ORIGINAL

BEFORE
THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

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In re: R-79060865, etc. Philadelphia Electric Company
Investigation into a requested $123 million annual
rate increase. Evidentiary hearing.

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Philadelphia, Pennsylvania

October 18, 1979

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In re: R-79060865, etc. Philadelphia Electric Company
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Stenographic report of hearing held
in Room 1304, State Office Building,
Philadelphia, Pennsylvania,

Thursday,
October 18, 1979,
at 9:30 o'clock a.m.

- - - - -

ADMINISTRATIVE LAW JUDGE JOSEPH KLOVEKORN

- - - - -

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THE ADMINISTRATIVE LAW JUDGE: I call this hearing to order.

Are there any preliminary matters to be discussed this morning before we begin?

MR. DASENT: Your Honor, I did mention to Mr. Hall yesterday the possibility of bringing Mr. Hill back. As you might remember, he was scheduled for the first day, and I was unable to be here.

If he could be brought back on November, I believe, 13th with Mr. Waddington, that would be convenient to me. We could handle the whole matter of valuation in one day.

MR. HALL: I don't believe that will be a problem, Your Honor. We have not been able to contact Mr. Hill to check his availability, but we believe he is available.

THE ADMINISTRATIVE LAW JUDGE: Fine. Thank you.

If not, I believe today we have cross-examination by Staff and the Consumer Advocate.

RAYMOND C. WILLIAMS, called as a witness on the part of the Respondent, being previously duly sworn, was examined and testified as follows:

CROSS-EXAMINATION (CONTINUED)

BY MS. BUSH:

Q Good morning, Mr. Williams.

A Good morning.

Q We have in the record that the average cooling degree days for the total of the four peak days was 197.

Do you have the figures for what each of those four days were?

A Yes. EDH for June 27, 1978, was 193; July 21 was 231; August 17 was 223; September 7 was 140. They are the four days that were the peaks during the summer of 1978.

Q And they result in the average of 197?

A That is correct.

Q In this study did you assume that there was a linear relationship between the KWH usage and the EDH?

A Yes.

Q Yesterday we had some discussion about the HT rate and comparing the calculations you have on page 40 of your cost of service study where you calculated the demand

cost based on the four peak days and energy cost and the customer cost.

And do I understand correctly your testimony that the rates that are charged, the customer charge are approximately half of what the cost of service study indicates the customer cost is?

A Supplement 6 pricing as the company has proposed it includes approximately half of what the full customer cost component is as determined by this cost allocation, that is correct, and it was set at that level as a first step toward achieving the objective of the full customer cost in order to minimize the effect on individual customers as a result of this move away from the 100 hours use minimum to the separately stated customer charge.

Q And further did you testify that this revenue deficiency in the customer charge as compared to the customer cost of service is collected in your demand blocks?

A Yes.

Q And do I understand correctly that your cost of service study does not indicate that the cost of a kilowatt of usage of demand does not vary with the amount of KW's used, that is, you have calculated here cost of 98.64 as one cost, yet your rate schedule has two different blocks?

A No, that is not correct. I didn't follow --- the 98.64, where did you obtain that?

Q I am looking in the new ---

A Okay. RCW-1A?

Q Yes.

A 98.64 is the total demand cost for production and transmission that is allocated to the HT class.

MR. SEGAL: What page are you referring to?

THE WITNESS: Page 40, RCW-1A, the yellow book.

MR. SEGAL: Yes.

(The testimony is continued on page 958.)

BY MS. BUSH:

Q That's - -

A That does not represent the total demand costs. One must also include the distribution costs which are shown under the column class peak, 797.

Q So that would be roughly $110.00, more or less on an annual basis for your determination of what the demand cost is for PD & HT per KW, is that correct?

A The sum of those two numbers represents the total demand charges that must be collected.

Q Correct.

A Well, let me - - it's the total demand charges that must be collected divided by the units over which they will be collected is the 9867 or the 106. The total of the two.

Q Now, you have - - therefore, you have calculated one amount that is the cost of service for 1 KW on an annual basis, yet there is some difference in what your rate schedule shows in that you have two different charges for a KW of usage, depending on the amount used, is that correct?

A Well, as we explained, the reason for the retention of the blocking in the demand charge is the continued collection of a portion of the customer charge in the demand block.

Q So you are correct in the customer charge, the

deficiency that we discuss in the earlier questions, in your demand charge?

A That's correct. The portion that is not collected in the customer cost separately stated is collected in the demand charge. That is the reason for the two blocks contained in the demand charge.

Q So you collected the customer charge in the first block, is that a logical inference?

A Yes.

Q And you testified, did you not, that if it were not for your concern about disruption, you would collect all of the customer charge in the customer charge and have one demand charge, is that correct?

A We would have customer charge and one demand charge, but this movement to this position in one step would cause, in my view, unacceptable effect on individual customers in that there would be very large increases of some relatively small customers.

Q But in principle to be consistent between your cost of service study methodology and your pricing structure, aside from the question of disruption, you would think that it would be consistent to have one demand charge?

A Yes. It is our objective in the way we are moving.

Q Now, I believe you - - I think you testified to

this yesterday and the numbers would support it, when you compared the demand cost under your cost of service study and the capacity charges or prices that you are collecting, there is a mismatch there, too, in that you are not fully recovering your demand charges through your demand cost to serve through your demand charges, is that correct?

A No. I didn't say that this was a mismatch. I said that it is essential that a portion of the demand charges be collected through the energy charge blocks to properly reflect the relationship between coincidence factor and load factor. This is a very realistic way of projecting the demand charges that vary as the customer's load factor increases.

Q So that by collecting some of your cost, demand cost through your energy charges, you are trying to approximate reflecting in your rates, the varying cost to serve that results from the usage over time by that customer?

A Yes. And if you observe the shape of the cost curve and the revenue curve comparison shown in RCW-1 and 1-A, you will see that they follow very closely.

Q Now - -

A Through all hours of use of the customer demand.

Q I think I understand what your objectives are in this pricing structure. I would like now to posit a few hypotheticals to you and to explore other consequences of this method of trying to track cost.

Suppose that you have a high tension customer who decides to - - responds to the national concern with conservation of energy and higher prices of energy and this customer decides to conserve KWH's and the customer does not assert any efforts, but reduces his KWH consumption by a thousand kilowatt hours on peak.

Now, is it correct that using the - - well, using the $96.00 under RCW-1, which was your peak demand cost, you would have a cost to serve of $96,000.00. I'm sorry. Let me strike that.

This customer uses a thousand KW on peak, so you have $96,000.00 for your cost to serve and strictly applying your cost of service study, and the revenues that you would collect from the customer are the thousand KWH times 12 months times $2.63 which is that block of KW charge, so you would have a revenue collection of $31,600.00.

A I didn't follow your calculation completely, but I believe you simply used the last block of the capacity charge, 263, a thousand kilowatts times that 263 times 12 to get 31,005 per year, is that right?

Q Yes.

A And then you used the number 96 which is not the total demand charges, but the total demand charges would be the sum of the 4 peak plus the class peak column.

BY MS. BUSH:

Q Under the new study, that would be 106; right?

A Yes, approximately. That is 106 times a thousand or 106,000 per year.

Q So, you got about a $74,000 revenue deficiency there; is that correct?

A Well, we haven't considered what is happening in the energy blocks.

Q Yes. You would then --- as your rates are structured, you collect any revenue shortfall in terms of demand through your energy charges; right? Is that right?

A As I have explained, we collect our demand charges in two places. Part of it is strictly through the capacity charge pricing and part of it is through the energy blocks as the customer's load factor increases, yes.

Q So, as we have calculated it, you would in fact collect 31,500 through the demand charge; is that correct?

A That is correct.

Q So that you have a remaining $74,000 to collect through the energy charges?

A Yes. We're ignoring the first block now, and we're ignoring really what is a customer charge component of that first block. Those are not the actual prices the

customer would pay.

Q Well, the first block, the 411 for the first 500 KW is essentially collected, the demand charge and half of the customer charge?

A That is correct, yes. I am just saying it is not the exact price the customer would be paying, is what I wanted to say.

Q So that now you have got for your energy cost under your cost of service study, RCW-1A, page 40, as 1.624 cents; is that correct?

A That is right.

Q So that any energy charge that you have for that customer you are first collecting, well, your average energy cost, which is 1.624, and then the remainder over that is an attempt to collect the demand charge shortfall; is that correct?

A First of all, the energy charge is collected and the remaining is demand charge.

Q So that to the extent that you have a customer who is conserving KWH and using the same level in terms of KW, you are putting the company at risk or subjecting the company to revenue instability in that you have structured your rates in such a way that you have to depend on the KWH usage to collect your demand charge; is that correct?

A No. We are not subjecting it to revenue

instability because the price per kilowatt hour, you will notice, for the first 150 hours use is much higher, and as most of the demand charges are collected in the early blocks of the energy charges, so that the demand charges that are collected primarily, the rate is much higher as one starts through the monthly load factor curve, the rate per kilowatt hour.

So that in your hypotheses where the customer is backing off his use of kilowatt hours, the kilowatt hours that are backed off have the lowest rate per kilowatt hour and, hence, do not have nearly as big an effect on the demand charges as the rates down at the lower end of the load factor curve.

The net result of all of this is the customer's price per kilowatt hour will go up to reflect his lower load factor use, and the fact that he has more demand charges per kilowatt hour included than he had at his higher load factor, this is very important.

Q Well, you are making a general assumption that more energy --- you are stating more energy costs are collected in the first block than in the latter blocks, therefore, the degree, assuming high usage of revenue stability is less than if you just looked at the tail block.

But is it not true there is a result of the way you have designed your rates, which is you will collect less revenues than your cost to serve if a person conserves

KWH and does not change their consumption in terms of KW?

A No, that is not correct, because that is exactly the reason for designing the rates as it is. You will notice that the cost curve climbs sharply and then levels off at the median load factor. And in your hypotheses what would happen is that the customer's revenue would back down along that revenue curve, and as long as the revenue curve follows the cost curve, then we are collecting costs, no more, no less. And that is the purpose of designing a rate in this manner.

If a rate does not follow the cost curve, then indeed you have this problem of load factor of customer changes. That is why it is important to have this load factor aspect in the rate design.

Q Let me see if I understand this, Mr. Williams. In the tail block you have a KWH charge of 1.9?

A That is correct.

Q And in your cost of service study, the energy cost is 1.624. The difference between that is .28?

A Right.

Q Now, if a customer conserves KWH, then you eliminate the cost of $1.62 and you eliminate the revenue of a dollar -- I mean, 1.62 cents, and you eliminate the revenue

of 1.9 cents; correct?

A That is correct.

Q And you also eliminate any capacity revenues that you are collecting in that tail block in the amount of .28 cents; is that correct?

A The difference between 1.62 and 1.9, yes.

Q Now, are you saying that a customer that is buying energy in the tail block is not -- the company is not collecting any demand charges through that tail block at all?

A No, I didn't say that. I said the difference that you cited between 1.9 and 1.62 is indeed that portion which is attributable to demand in the last block. The difference could be calculated for the first and second blocks, and I think you will agree it is much higher.

Q Yes.

A So that the cents per kilowatt hour for demand in the first blocks is much higher, and that proportion is exactly shaped to follow the cost curve, follow the coincidence. The fact that as a customer's demand starts from zero hours use up to three fifty, there is increasing coincidence. So that one must have a steep slope which is represented by a large cents per kilowatt hour in the first few hours of use and then a diminishing slope or flattening through the mid-section and a further flattening at the end of the curve.

Q But is it still, given what you are saying that the capacity charge to be collected decreases because the cost to those customers decreases as they get in higher levels of KWH usage, is that what you are saying?

A No. I'm saying that there is a coincidence factor relationship. As the customer uses his demand more hours of the month, there's more chance his load is going to be coincident with everyone else's load. That's the coincidence factor relationship.

Q Yes.

A And that relationship is what builds this curve that rises steeply and then levels off at higher hours of use during the month. Now, in order to follow those costs with revenues, we have three blocks.

The first block rises steeply. The second block decreases in slope and the third block decreases further. That follows faithfully the costs as they are incurred.

Q Is it not true, Mr. Williams, that unless you assume that the company is improperly collecting demand charges in the tail block energy calculation, that to the extent that a customer conserves in KWH usage, there will be a revenue shortfall in terms of collection of capacity cost in that tail block?

A No. Because as he conserves in usage, his coincidence factor changes because his load factor changes,

hence his position on this curve comes back down. Each kilowatt hour he saves during the month moves him back down the curve. If he reduces his usage from 720 hours during the month to 300, he is halfway back down the curve and properly not - - the chances of that customer's demand being coincident with all others is reduced, hence we shouldn't charge him as much demand and we don't. That's how we recognize it.

Q Well, the demand charge collected through the energy charge would be greater as the blocks go down, as energy blocks go down, is that correct?

A Rate per kilowatt hour is greater. The sum total of demand dollars collected decreases as the hours of use decrease.

Q If you have a customer in the tail blocks in terms of energy charge, and you are collecting - - the demand charges that you collect through the capacity charge are stable. That is fixed. We are talking about the change that occurs in terms of revenue collection, if his energy usage changes. Now, if you have a fixed amount of demand charges that you are going to collect from that customer through his KW charge, you have a fixed demand cost that that customer is imposing on the system.

To the extent that you have some demand costs being collected through the KWH mechanism, if a person conserves

in that mechanism, I mean KWH usage and keeps the capacity the same and you have designed your rates to tie the two together, would there not be a revenue shortfall in the amount of the difference between the actual energy cost and energy cost you're charging, which would be your demand collection?

A No. The demand cost is not fixed. As the customer's load factor decreases, his demand cost decreases. The only part that's fixed is the portion that's in the demand charge. A portion varies. That portion that is collected in the energy charge varies. And it faithfully follows his hours use.

Q All right. Mr. Williams, if you have a customer that you are charging - - this customer is in the tail block in terms of energy usage and you're charging the customer 1.9 cents per KWH and your energy cost is 1.62 per KWH - -

A Yes.

Q If that customer uses one less KWH, you are collecting 1.9 cents less for that decreased usage, but your cost that the system is saving is 1.62, is that correct? The actual savings in terms of what happens with the system is that if the system doesn't have to produce that unit of energy which costs 1.62, is that correct?

A No. Because by saving that 1 kilowatt hour, the customer is no longer 100 percent load factor. He is less than 100 percent load factor. And hence there's less

chance that he will be coincident.

Admittedly, a very, very small chance, but one cannot design rates, but theoretically, one could price this energy block with 720 pieces in it and faithfully follow each hour's use. That's not feasible. We have adopted three energy blocks/very which closely approximate the cost of incurrence.

Q Well, you say you can't have your designer rate where you have 720 blocks.

A I didn't say I couldn't design it. I said it wouldn't be feasible to administer.

Q It wouldn't be practical or feasible to administer. Would not a time of day rate in terms of administration aside from any other problems you might have with it be a more feasible way and more accurate way to assure the company that they're collecting the revenues, even though there might be a change in KWH usage?

A No, it would not. Because any time of day rate has to make very broad generalizations also, as to the average cost within a time period and what are the approximate peak periods and approximate peak periods. One has to make reasonable judgments in constructing any rate.

Q Well, given that assumption, which I agree with, is it not correct that a time of day rate more accurately, more narrowly addresses the particular variations that one has to take into account in designing rates?

A No.

Q On page 8 of statement 2-A, when you discuss there that inverted rates create revenue instability, are you talking about inverted energy rates? What particular part of the rates are you talking about and why would that not be applicable to declining block rates? That same principle?

A Well, I'm talking about the energy blocking being priced far above costs and not representing costs, and in that case, the loss of a kilowatt hour of revenue would not be representative of the costs that were saved by the non-production of that kilowatt hour, and therefore, there would be instability and a non-relationship between cost and revenue.

And one would be showing the customer the wrong price for the cost to serve that customer and that's not right.

Q If an HT customer increases his demand 100 kilowatts in December, but has the same demand in the summer months, how much additional generation and transmission cost would be incurred by Philadelphia Electric Company?

A May I ask you a hundred kilowatts increase over the same demand, what do you mean by the same demand?

Q All right. Suppose you are comparing two time periods where the customer uses 200 KW in the summer, both time periods and the first year he used 200 KW in the winter and

then he increased his usage to 300 KW in the winter.

A. And your question was what would - -

Q. How much would your production in transmission costs go up from the first period to the second period?

A. As I understood your question, the customer has a 200 kilowatt demand in the summer period and increases it to 300 kilowatts in the winter period. Philadelphia Electric Company is a summer peaking company, and we therefore look at the allocation of our production and transmission system based on our summer load, and allocated for the classes of service based on our summer load, so that from a cost allocation standpoint, there would be no additional costs allocated for this additional winter production and transmission use.

The system is in place. The additional use could be made of the system.

Q. The company's revenue would go up, of course, by the rate charge which would presumably be the tail blocks, 2.63 times the differential in the demand, 100. Is that correct?

A. That's correct.

I would like to add that the revenue would go up for that one month incurred, which is one-twelfth of the annual demand charge. If the customer continues that usage, which is most likely in an industrial, if he increases his usage 100 kilowatt hours, normally it is an increase in production,

that use would, in all probability, carry forward into a summer period and it would therefore impact on our production requirements.

(Transcript continues on next page)

BY MS. BUSH:

Q You don't really know in quantifiable terms how much that happens that a person increases their demand in the winter that it follows through all year round; do you?

A Obviously there are increases and decreases by individual customers month by month. No one customer is absolutely stable. We have to look at the whole spectrum of customers.

Q And if a customer decreased their demand in the winter by a similar amount, the revenues would go down proportionately but the allocation in terms of your cost of service study where you allocate on the summer prices for that class would not go down?

A Well, there is a ratchet application that would come into play in that since we are a summer peaking company, we would have an 80 per cent ratchet on that 200 kilowatt demand. So, that winter demand pricing can't be less than 106 kilowatts. And this is a means of reminding that customer that we are a summer peaking company and the demand he used in the summer months is what caused the production system to be increased, and, hence, he should share in that cost at least to the 80 per cent extent throughout the year.

Q You are assuming in that case that the customer's usage demand in the winter is 80 per cent or less

than what his demand is in the summer because the ratchet only comes into effect - does it not - when the summer demand is higher than the winter demand?

A Well, I understood you to say that suppose the 100 kilowatts increase became 100 kilowatts decrease, and if you subtract 100 from 200, you get down to 100. The demand would be kept at 160 by the ratchet.

Q I was using that hypothetical. If a customer's demand in the winter had been 300 KWH and it was reduced to 200 KW ---

A In the summer?

Q No. In the winter.

A Yes.

Q And staying at 200 in the summer, then the ratchet would not come into play in that situation?

A So long as the customer's wintertime demand is equal to or higher than the summertime demand, the ratchet has no application. In fact, so long as it's 80 per cent of the summertime demand, there is no application.

Q I understand that. So that we're talking about the situation where the ratchet doesn't come into play for reasons that are consistent with your ratemaking purposes, the revenues from that customer would be reduced in the winter months in which the demand was reduced - is that correct - as long as it was above the ratchet trigger point?

A The demand charges would follow the customer's use so long as it was above the ratchet trigger.

Q Well, the point that I am trying to clarify, Mr. Williams, I am trying to take the ratchet consideration out. Therefore, I have made a hypothetical where the ratchet wouldn't apply, that is, the summer usage of demand is less than the winter demand and that even when the reduction occurred, you are still above the ratchet point.

Assuming that situation, the revenues that the company collects go down as the demand goes down, but according to your theory of cost allocation, the cost allocated to that class does not go down; is that correct?

A And that is correct because the summertime demand of that customer has not gone down, and the costs are allocated on the basis of his contribution to our peak demand which occurs in the summertime.

Now, we're talking about the cost of production in transmission system.

Q Yes.

So that the cost to serve that customer remains the same but the revenues go down; is that correct?

A This is the customer that has 100 kilowatts in the summer and 200 kilowatts in the winter and decreases his wintertime demand by 100 kilowatts?

Q Yes.

A The revenues from that customer go down, yes.

Q But the cost to serve does not go down?

A The cost of the production and transmission system allocated does not change. The cost of the -- the production and transmission system does not change. The cost of the distribution system allocated to serve that customer does change.

Q Well, in relative terms we are talking about, for the different costs to serve, $95 a KWH and eight dollars a KWH?

A That is correct.

Q KW. Sorry.

In RCW-1A, on pages 43, 44 and 45, you have the various residential classes RH, R and WH, and you have a different energy cost for those three classes.

Could you explain to me why there is a difference? There is the same differential in the -- similar differential in the RCW-1.

A You mean the difference in the fifth place from the decimal between nine and two?

Q Yes. 1.739 cents, 1.732 cents and 1.731 cents.

A For all practical purposes, I think you will agree with that number, 1.73. Now, there is a difference between 1.732 and 1.739 which I cannot explain.

Q Do you think it might be a rounding error?

A I will be glad to investigate it if it is of substance.

Q Philadelphia Electric Company buys and sells on the PJM power pool; is that correct?

A Yes.

Q And is the price associated with these transactions of buying and selling on the pool the price that PJM system Lambda or the incremental cost of adding an additional kilowatt hour of output for the entire system?

MR. RIEHL: Could I have the question read back, please? I'm sorry. I missed it.

(Whereupon, the following was read by the Reporter as requested:

"Q And is the price associated with these transactions of buying and selling on the pool the price that PJM system Lambda or the incremental cost of adding an additional kilowatt hour of output for the entire system?")

MS. BUSH: I would like to amend that question to include the slight variations that would occur because of the split savings transaction.

MR. HALL: Do I understand the substance of your question to be, is the price at which power is bought and

sold between PJM numbers under the interconnection agreement the system Lambda for PJM or is it some other mechanism? Is that your question?

MS. BUSH: Yes. Is the price Philadelphia Electric Company pays or collects when purchasing power under the PJM the PJM Lambda or incremental cost of adding an additional kilowatt hour of output from the entire system.

THE WITNESS: No. Lambda is the operating cost of the last and most expensive piece currently operating on the interconnection.

BY MS. BUSH:

Q Okay. Does that cost then of the last unit running on the system constitute a cost that recovers the capital cost for any cheaper capital cost plants that are running in the system at that time?

I would like to change that - I'm sorry - from capital cost to energy cost, cheaper energy cost.

A Lambda is an energy cost representative price. Lambda represents the energy cost of the last and most expensive piece operating on the PJM.

Q So that any other plants that are running at that time, one can assume have cheaper energy cost?

A Yes.

Q When the Philadelphia Electric Company buys power from the PJM, do they pay essentially - perhaps there is

a slight variation because of the split savings transaction - does Philadelphia Electric Company pay essentially the running cost which you have defined as the energy cost associated with the most recent plant to go on line or to be running?

A No. The purchase price is halfway between the operating cost of the last increment and the average cost of the --- I'm sorry. The purchase price is halfway between the cost of the next increment that Philadelphia Electric would have available and that which is available from others on the interchange. That is the so-called split savings.

(The testimony is continued on page 979.)

Q So that if the cost for the next unit for Philadelphia Electric within its own system is 3.5 cents per KWH and the cost of the next increment for PJM is three, then the difference between that is five so you would pay three plus 2.5.

A For that increment.

Q For that increment. You provided, the company provided in response to Consumer Advocate interrogatory IR-2-RS21 - -

A Yes.

Q Now, this response, in the left hand column entitled, you will see it is a many page response, and in the left hand column you are talking about RR. Is that the PJM running rate?

A That's right.

Q So that if we look through all of these pages which cover from April 1, '79 to August 31, '79, you can see on an hourly basis, the running rate varies as well as on a seasonal basis. Is that right?

A It varies through the different periods of the day. Generally lower in the nighttime hours, higher in the daytime hours and varies from season to season. Yes. It varies all throughout the year. The continuous pattern is that it is generally lower during the nighttime hours.

Q And the right hand column in all of these sheets

is the, as noted at the bottom of the page, is the similar figure within the Philadelphia Electric system. That is the cost of the next, adding the next amount of energy, using the economic dispatch in Philadelphia. Or would you clarify what you mean?

A It is stated right at the bottom of the page, the right hand column is the energy value which is the highest cost energy produced through economic dispatch on the PE system at that hour.

Q And so that's the highest energy cost actually produced through the economic dispatch on the PECO system?

A Right.

Q Okay. So take, for example, June 1, 1979. Could I change that to - - I would like to look at August 12th. That is a Sunday. And we see there that says energy values, the greatest variation throughout the day is a low of 12.3 and a high of 16.0.

A For the PE rate you are quoting.

Q That's right.

A Yes.

Q And on the running rate for PJM, your variation is a little greater. Theirs is 12.3 to 19.9.

Now, if we look at the day before that, Saturday, August 11, you see a greater variation, say the energy value is from 16.0 to 34.7. Is that correct?

A No. I think it is 42.6. I believe that is the high. That's at about the middle there, 1:00 o'clock.

Q Oh, yes.

A In the afternoon.

Q So that's a little greater than a double differential?

A For that one hour, yes.

Q For the one hour. Other than that one hour, they are around - - there are some 38's and 34's. And we see for the running rate, a difference of 17.2 up to a high of 60.2.

A 60.2, yes.

Q And then on the day before that, August 9, which is a Friday, the energy value, there is a low of 16.1 - -

A 15.5.

Q 15.5. I'm sorry. There are several low ones there and then the majority of them are higher, ranging up to 51.2.

A Yes.

Q The running rate for PJM varies from 15.5 to 93.6.

A That's right.

Q When one compares those three pages, the energy cost both for Philadelphia Electric Company at the Lambda is,

decreases moving from Sunday to Saturday to Friday. Is that a pattern that you observed there?

A I presume you have checked the calendar.

Q Yes. Assuming those are the correct ones.

A Is August 12 a Sunday?

Q Yes.

A Certainly Sunday is lower than the other two days. The other two days are certainly higher than Sunday. Whether this is one Friday, Saturday and Sunday, I think to establish any pattern, one would have to look at every Friday, Saturday and Sunday of the year to draw the conclusion that you are drawing.

Q Well, from your experience, do you know anything that would lead you to think it would be probable or even possible that the energy cost for Philadelphia Electric Company will be as equal on Sunday as they are during a weekday?

A Generally a Sunday's energy values, I would expect to be lower unless there is some unusual circumstance of equipment outage, extreme weather or some such thing.

Q And that applies to Saturday as compared to Friday, too, but to a lesser degree, is that not right?

A Well, Saturdays may or may not be different. That oftentimes approximates another day. I would expect it to be a little lower than a weekday.

Q Well, on this particular day, aside from a pattern on an annual level, the daily average, they have the daily average here down at the bottom right hand side and is not the daily average for the Friday 36.6, for Saturday, 26.5 and for Sunday, 14.5?

A Yes, it is.

Q So that would indicate, at least for this particular case, there is a fairly significant differential?

A For those three days, yes.

Q But you are saying in your experience you could not say at this time that that would be a pattern that one would expect on an annual basis?

A I would expect weekend costs to be generally lower than weekday costs. Generally as a pattern.

Q With the exceptions that you noted before?

A Yes.

Q Now, looking now, looking at the Friday figures, is it fair to say that from this data and also from your experience -- and you can differentiate the two if you wish -- that there is a difference in cost within one day in terms of night versus day for the energy values?

A Yes. Generally, the energy values during the daytime hours of 8:00 a.m. to 10:00 p.m. are higher. In that area.

THE ADMINISTRATIVE LAW JUDGE: Would this be an

appropriate time to take a recess?

MS. BUSH: Yes.

THE ADMINISTRATIVE LAW JUDGE: Let's take recess until 11:00 o'clock.

(Whereupon a brief recess was taken.)

(Transcript continues on next page)

THE ADMINISTRATIVE LAW JUDGE: We are ready to proceed.

BY MS. BUSH:

Q Refer back to the first page of this Exhibit RS-21 that we were just discussing. April 1st, 1979, is the date.

A Yes.

Q Just taking that as an example, I am going to ask you some questions that apply.

Looking at the energy value, the daily average energy value for that day would be 14.61. If the company produced fewer KWH that day on the average, how much of a savings in cost would receive to the company for that day?

A The change in cost would depend --- the reduction in generation and output, are you assuming a uniform reduction throughout the day?

Q Well, assume one kilowatt hour in each of the hours. Wouldn't the company on the average save 1.461 cents per kilowatt hour in reduced usage per hour?

A If the reduction was uniform in each hour by one kilowatt hour, as I understand your question now, the savings would be 1.46 cents per kilowatt hour. This assumes that the billing rate now that we would be paying if we are assuming we are buying energy from the interconnection ---

Q I am talking about energy value, not the RR.

A Okay. The energy value being the highest cost energy produced on the PE system ---

Q Yes.

A --- in that hour?

Q Yes.

A Now, the reduction of cost for the highest increment would be at the price of each of those hours.

Q If you took any particular hour for within the PECO system only, say if you took hour five, it would be 11.7. If you took away a unit, the reduced cost would be 11.7?

A Under your assumption that the energy that is being produced on the PE system by PE equipment, as I understood your assumption, ---

Q Yes, that is correct.

A --- and that there is -- but we are not involved with the PJM here of split savings, ---

Q That is right.

A --- which I am not sure at all it is a valid assumption for this day without checking what the additions were, this is indeed what would happen, yes.

Q Well, if you look through all of these pages, aren't the energy values for PECO very close to the running

rates for the PJM and that the difference, there are minor variations but on most of the days they are the same? For example, on this page?

A Well, by definition at the bottom of the page, the right-hand column in this exhibit is the energy value of the highest energy produced by economic dispatch, close to but under or equal to the running rates.

Now, this makes no attempt to assess what was happening in that hour. We may have been in a buying position on the interchange and the price we were paying on the interchange would be halfway between what our next increment was, higher than this value, and what was available on the interchange, higher than the running rate. We may have been buying that amount. So that the average price we are paying is not represented by either of these columns.

What is represented is the highest cost energy being produced on the PE system by PE equipment in that hour.

Q That is on the energy value?

A Yes.

Q And the RR is the cost -- it is an equivalent figure for the PJM system, that is, the additional cost for -- the highest cost of energy produced through the PJM dispatch system at any one hour?

A It is the highest priced economic piece of

generation running on PJM at that point. It doesn't say that that is what PE is paying. A split savings would be above this running rate.

(The testimony is continued on page 987.)

Q This differential that you discussed earlier?

A Right.

Q Are there any other differences in what Philadelphia Electric would be paying to the PJM different from what PJM running rate is other than the split savings difference?

A Well, what Philadelphia Electric Company is paying PJM depends on how many blocks of load and at what prices it is buying. The billing rate is a combination of all these blocks of load being bought at any one time. It may be above or below the running rate as shown by another presentation we have made.

Q Well, if Philadelphia Electric can produce at equal to or less than what the PJM running rate is, they would produce their own kilowatt hours, is that correct?

A For that last block, that's true. But when you talk about the billing rate, it is a summation of all the blocks you are buying.

Q But the cost at that point, Philadelphia Electric Company decides to buy on the PJM because it would be more expensive to produce it within their own system, the cost at that time is the cost that Philadelphia -- the difference between the cost that Philadelphia Electric would pay under its more expensive generation and the cost that is the lambda at that -- the running rate at that time for PJM

rather than the PJM price?

A. It is not the Lambda.

Q. The running rate?

A. It is the available next block on the interconnection which may be above the Lambda. The Lambda is the operating last block of the interconnection. Now, if we need more, we have got to, in essence, see what's available on the interchange and that price is undoubtedly going to be above the Lambda. Compare that to what's available on our system to run. Halfway between those two points is the split savings point.

That's the price we pay for that increment. Then if we need another increment, the same procedure goes on. The billing rate is a summation of all these lines in any hour.

Q. But the billing rate is calculated on the difference between your next incremental cost and the PJM next incremental cost, the difference added to the PJM cost?

A. No. The billing rate is a summation of all these various purchases, which may be above or below any one increment. That's what's shown by another curve here.

Q. Well, is the import of what you are saying that since we have the running rates here in this column on the left, that the very fact of Philadelphia Electric buying might increase as time passes within that hour, what the running rate

is? Because a more expensive plant might have to come on line to meet that demand by Philadelphia Electric? That is this --

A This is the effect of any company making an additional purchase on the interchange, surely.

Q Is that what you are saying is why the fact that to explain your position, that Philadelphia Electric might be paying more than, aside from the split savings, if it is more than what the running rate of PJM is? Because it will change by the -- it might change as a result of the transaction, itself?

A No. The available price of others, other generation compared to PE's generation, halfway between those two points is the buy point for that increment. And that increment is going to be priced above the Lambda. That's what I said. Now, you're talking about billing rate, which is a summation of all these buys of various increments.

That effect is shown on IR-2, question 7. There is a graph there that I think pictorially demonstrates it rather well.

Q Could you explain verbally what this graph represents?

A Yes. It is a comparison of the billing rate, which is what PE is paying versus the running rate, and a dotted line drawn at a 45 degree angle is the point where the billing rate equals the running rate. That's where the two --

if one came across horizontally from 30 and meets that dotted line and then you drop down vertically, you will meet 30 on the bottom, running rate scale. That's the point where they equal one another.

In other words, that 45 degree running rate equals billing rate line. Now, also shown is a three month average running rate versus billing rate for the three months ended June, '79, and a one month billing rate versus running rate comparison for June, '79, by itself. And you can see that the billing rate is above the running rate at low values of the running rate, crosses it at approximately 26 mills and then continues below the running rate as one advances above 26 mills out to 66 mills, the end of the graph.

Q Is it correct that if you take an average of the running rate for this three month period that is graphed here and compare it to an average of what the company paid to PJM, which includes what they bought and what they sell, those two numbers would be approximately equal?

MR. HALL: Could I ask that that question be reread, please?

(The question was read by the reporter)

MR. HALL: Could I ask one question? You're asking a comparison between the running rate and a net energy purchase rate. In other words, the net of the purchases against the sales.

MS. BUSH: Yes.

MR. HALL: Okay. That's what I thought.

THE WITNESS: I think one can best reply to that by looking at the graph, itself, and the only way that could happen is if the period above the graph shown at the low levels of running rate were exactly equal to the area above the 26 mills.

Now, without an analysis of this period as to the hours that each of those things occurred, I don't think I can answer your question.

BY MS. BUSH:

Q Wouldn't the - -

A I would seriously doubt that it would, because 26 mills is relatively low as to the daytime running rate during that period of time. So I would expect to find more area above the 26 mill point.

Q Wouldn't the relationship between the two lines under 26 mills vary depending on the amount of buying and selling that was done?

A Yes. Sure.

Q Could you provide us with a calculation that compares the average running rate for those three months with the average of the net payment to the PJM? That is the net of what they buy instead of what you bought and sold?

A We will attempt to do that. We will have to

check the source data. I think it can be done.

MR. HALL: Off the record.

(Discussion off the record)

BY MS. BUSH:

Q Mr. Williams, on the graph at RS-7, the lines above 26 mills indicates that during those periods of time, the company is selling to the PJM, is that correct?

A No. Not necessarily.

Q Okay. That they are selling, the company is selling more than it is buying?

A No.

Q When the company purchases from the PJM, are they, by definition, paying more than their own energy value? Are they the same as or more?

A Than the company's own energy value?

Q Yes.

A We are paying less than it would cost us for that next increment of generation in order to be in a buying stature. Now, that increment of generation, but the billing rate is a composite of all increments, not just the last increment. The billing rate is a composite of everything you paid for when you were running at that rate.

Now, you may have been buying many increments. The billing rate is a composite of all buys.

BY MS. BUSH:

Q All buys at that time?

A No. Well, all buys in that time period which are made up of various prices. Each piece of equipment carries a separate price list.

In this area you are probably talking about combustion turbines. They are usually in 20 megawatt pieces. So, you buy a combustion turbine at 20 megawatts. Then you may buy another combustion turbine at a higher price. And the summation of all of those buys is what is being shown here as the billing rate.

Q So that your billing rate might end up being higher than your energy value aside from this split savings difference because another turbine might come on that is even higher priced than what you otherwise would have put on yourself, Philadelphia Electric Company?

A No. At each increment this analysis is made, and if Philadelphia Electric can produce more economically itself, it is done. It is a continuing analysis of the most economic increment available.

Q So, the billing amount would be higher but it would always be lower than what Philadelphia could -- at the cost which Philadelphia Electric could produce it itself ---

A For that increment.

Q --- for that time?

When Philadelphia Electric buys from PJM, is their billing rate more or less than the running rate?

A Could be either.

Q How often does it happen that the billing rate is less than the running rate when you are buying?

A The graph shows whenever the running rate is over 26.

Q Well, does both sale and and buying over that 26 ---

A That is what the billing rate is. It is an average.

Q We will try to clarify this and get back to it after lunch. I don't think we are getting very far now. Perhaps we can talk informally, and you can explain it, and maybe we will do more cross.

What is Philadelphia Electric Company's deficiency charge from the PJM?

A Deficiency charge?

Q Yes.

A Capacity charge?

Q Capacity, yes.

You could agree subject to check, if you would like, it is approximately $25.

A It is given in one of these responses. Perhaps

you have it in front of you.

Q I don't have a ready reference to it.

MR. HALL: I take it what you are referring to is the rate that is charged if a company is deficient.

MS. BUSH: That is right, in capacity.

THE WITNESS: It is a price set forth in the agreement. It is a matter of record.

MR. HALL: We will accept that subject to check.

MS. BUSH: Okay.

BY MS. BUSH:

Q Philadelphia Electric in fact does not assess this charge because of their reserve capacity situation; is that correct?

A Capacity charges are made in accordance with the regulations of the PJM agreement, and whether Philadelphia Electric has to pay any capacity charges or not depends on the situation at any given time.

Q My question to you is, in fact during the test year period, to your knowledge has Philadelphia Electric paid a deficiency charge, capacity charge?

A I will have to check. I don't know offhand.

Q Okay.

A Have we bought capacity on the interchange during the calendar year 1978 or ---

Q Historic test year and to date in the future test year.

A In other words, from April 1st ---

Q '78.

A --- '78 to ---

Q To date.

A To date.

Q Yes.

A related point you state on page three of your supplemental Statement 2A that the reason interruptible rate in your opinion is not appropriate at this time is because of the company's adequate reserve capacity.

Can one infer from these two --- well, assuming you haven't paid a capacity charge to PJM in the period that we talk about and your position with regard to interruptible rates, can one infer from that that the incremental capacity cost to Philadelphia Electric Company in terms of meeting new demand or meeting any demand that it would otherwise interrupt through an interruptible rate is that cost is either non-existent or insignificant?

A What I am saying on page three is that we have adequate reserve capacity now, so that I think that an interruptible rate would provide very limited benefits to us to provide us any additional capacity at the time of peak. Now, I think that is self-explanatory.

Q Well, that particular point goes to, I take it, the savings that you might get from shedding load given existing demand; is that correct?

A Well, that addresses the fact that there would not be any delay of new capacity additions by the implementation of an interruptible rate on the PE system at this time.

Q And for what period of time are you talking about here that you would not foresee any delay and need for this additional capacity that you would save by having interruptible rates?

A So long as the reserves are adequate on the PE system which currently is assuming the addition of Limerick is projected into the 1990's.

Q Is not another consideration that one must make in making this judgment decision or recommendation that the possibility of being able to serve -- to sell that capacity on the PJM system that one would attain through voluntary interruptible rate or interruptible rate that wouldn't harm your customers to whom you have a primary duty to serve?

A Assuming there was a market for that capacity on the PJM interchange, that is a possibility.

Q Is your assumption here that there is not a market on the PJM system?

A Well, I was looking at Philadelphia Electric Company's reserve capacity situation, and the Interchange also has adequate reserves at the present time.

Q I didn't hear that very last phrase.

A And the Interchange also has adequate reserves at the present time.

Q You provided a response to a Consumer Advocate Interrogatory 29, a study that you did with regard to the previously filed OP rate, off-peak rate. And I wanted to ask you at this time what was the company's rationale in not offering this rate in this case?

A This analysis shows, among other things, the cost of equipment to the customer to avail themselves of a rate like OP which is in the vicinity of $300, and we believe there is a very limited market for such a rate.

Q When was the last --- when did you offer this rate before?

A I believe it was R.I.D. 295.

Q Is there something that has changed since then that would lead you to believe now there would not be a market for it as contrasted to what you, I assume, believed before?

A This was one of the objections raised by others in that case, as I recollect. The cost to the customer would be about $300 to avail themselves of the rate, and it is

true. Therefore, we felt that there was really not much of a market to offer it to and, therefore, didn't do it at this time.

Q If you in fact offered the rate, wouldn't you get more accurate information as to whether in fact there is a market for the rate?

A Well, I should add there is one other thing that happened in between that period of time when it was originally offered, and that is we have changed the availability of the water heating rate, the controlled water heating rate to make it available for storage heat used in conjunction with the space heating system, for example, a solar heated system that would need additional input to a storage tank of water. This storage supplement could be provided as rates now stand under our water heating rate. And this was one of the considerations in this original offering, that OP would do that service.

That aspect of OP has already been built into the water heating rate, if you will. So that that was another reason that we believe even further limited the applicability of rate OP.

Q Well, what percentage of the total market LIRA that you would envision would be OP, if it existed, would be solar applications that need more heat storage?

A It certainly was one of our considerations as the original offering to provide such a possibility. As we all know, the solar market is a very young and developing market and it is tough to predict how much is there.

Q In making that original proposal, I assume from what you are saying that you designed the rate to have a one time immediate charge for the capital or for the cost of installation of the $300.00, is that correct?

A No. This would be customer owned equipment. Not company owned equipment. The customer would have to install this contactor to disconnect his service during the offpeak periods. And it would be customer owned and the customer would make a $300.00 investment, on average, for the installation.

Q To the extent that that rate would encourage offpeak usage and in the long term, though not in the short term, it would reduce Philadelphia Electric Company's capacity needs, would you consider it legitimate in the rate making content to view that investment as an investment in future capacity?

A Well, the investment would be by the customer, not the company. I don't think - -

Q I understand that. I'm asking you another alternate way to view it which would be as an investment by the company. For example, are you familiar with I think an Oregon Public Utility that used investment in insulation as an alternate investment in future capacity? I'm asking you would you consider that as a legitimate way to view this as an investment for the company?

A I think the situation in Oregon is entirely different from the situation in Philadelphia Electric Company. The capacity reserve is entirely different than their embedded cost of capacity as compared to what they have to add is entirely different. But the problem here is that this controller is normally a piece of equipment that is like a fusebox, if you will, that is in the customer's home. It is past the meter. It is past the point of utility ownership for the utility to reach inside and own this piece of equipment in the customer's home.

We would create some problems from an underwriter's inspection standpoint and that sort of thing that I think would be best handled by keeping it clear of utility ownership.

Q Aside from the question of the reserve capacity differential between here and Oregon and the other utility, what would be the current cost of additional capacity for Philadelphia Electric? Per KW?

A Well, the capacity being added is base load

nuclear currently under construction.

Q And that's between 600 and a thousand? Or more? 614? Or would it be more than $300.00?

A That capacity is, of course, under construction committed and anything you do with OP is not going to save that capacity, if you will. It is not going to save the construction of capacity. The only thing that could be saved is the next plant after that already under construction.

Q Well, it could either change the - - it might or might not have an impact on the decision in terms of construction schedule of the plant currently under construction and in the long term, it would - - well, the next plant to be constructed which I assume is Limerick 2, it would impact that, is that correct?

A I cannot reasonably envision any change in load from rate OP impacting the construction of that capacity, no.

Q But if the company, if that's - - if that is the way that the company approaches efforts to reduce its peak load, don't you get into a situation kind of a spiral that you never get out of? I mean don't you have to start with saving capacity so that your construction decisions you make in the future will have that fact and the effects of these changes have the benefit of experience of those changes?

A No. I think that the way to have conservation

is to indeed show customers the proper price for what it is costing to serve them and that's what we are trying to do, through our rate structure totally, by the offering of night service riders in HT, PD and the suggestion in this filing of a night service rider in GS, to give customers the opportunity, if indeed they have an offpeak load, to be priced accordingly and recognize that and will give them the price incentive and price signal to change their load.

We are also proposing a residential experiment as ordered in the last RID #38 with the same objective of controlling residential demand, to give a price incentive to control residential demand. All these things, I think, are valid efforts to encourage by proper price signals of cost to the customer to use as they need energy, but only as they need it, because they should see exactly what it costs and that's why I think rates should reflect costs so that the customer can make an evaluation of whether or not it is indeed worthwhile paying that cost.

That's why I believe it is important that rates should reflect our costs.

Q You aren't saying that this OP rate would not reflect cost, are you? I mean that's not your objection? That's not the thrust of your objection to the rate?

A No.

Q In fact, you gave no examples of other kinds of

load control pricing mechanisms that you are instituting?

A. Right.

Q And my question is what would be the company's -- I mean you are doing things to save load so that's obviously not the objection to this load and this could be designed where it would accurately reflect cost, so that wouldn't be an objection to this rate. And you gave me examples of rates in load control for the GS class, the night rider, and the demand rate for the residential heating customer and my concern is -- to residential heating customers when you are in fact to summer peaking system, my concern is what rate is the company offering to general residential customers where they can have the option to alter their usage pattern and pay the cost to serve and reduce their total bill?

A. That's the purpose of the residential experiment that we are embarking on as a result of the last case. We have 360 customers involved in that experiment which is just now becoming, we expect to have off the ground by the first of next year. The meters are ordered, the customer sample has been drawn, the customers have been contacted and we are progressing and working with the Commission staff to make sure that what we aredoing is in compliance with the RID 458 order and that is certainly the objective of that experiment.

Q I understand that. Are there other than residential heating customers in that experiment?

A. They're all residential heating customers because they are the large use customers and it is felt that this is the greatest opportunity for a change in demand level.

Q. Well, isn't that, I mean the company has 1.3 residential customers, and they have what, around 30,000 or 60,000 RH customers?

A. About 35, 40,000.

Q. 35,000?

A. Yes.

Q. And in fact, you are, by definition, gearing this option toward high users and toward people who use in the winter heating system, so you are denying any kind of rate relief in the form of cost base load management to the vast majority of your residential customers.

A. No. I think we have in place the water heating rate which is certainly a recognition of the service cost during offpeak periods. And you asked me why we didn't offer this OP rate at this time. Now, I have tried to explain. I am not saying that the company is objecting to the principles of the OP rate. We don't.

Q. You just don't think there would be a market and that you have not part of the market through the solar rate being opened through the WH rate?

A. That's right. We do not object to the principle. That's why we offered it originally.

Q So if there were a market for this, you would have no objection to implementing it?

A I would not. That's right. I would recommend it be implemented with availability to 24 volt loads only.

Q Why is that?

A Without, by changing it available to 120 volt loads as well as 240 volt loads, it is very difficult for anyone to be sure that the customer doesn't merely lift the appliance from an uncontrolled circuit to a controlled circuit. Use the off-peak rate, in other words, when it is cheap and when off-peak shuts off, merely plug the appliance in the regular residential socket. The company has saved no capacity, but has received reduced revenue for the same service. A 240 volt load is normally hard-wired to the appliance and such a transposition can't readily be made and certainly we don't want to become policemen into everyone's home.

Q I would like to ask you some questions now about the R and RH rates.

As I understand it, for the R and RH rate, they both have the same rate under 500 KWH and over 500 in the summer, and the difference that we have is in the winter over 500 that our proposed rate is 5.65 and the WH and the RH over 500 is 3.04.

A That's right.

Q So that a 3000 KWH customer, one that's R and one that is an RH in December, one will pay, well, the RH will pay approximately $65.00 less than the R customer. Is that right?

A I don't know what level of service you are assuming.

Q 3000.

A Have you lifted that number from our calculations or have you made your own calculation?

Q We made our own calculation.

A I will accept it subject to check.

Q Okay. Now, isn't it true that because Philadelphia Electric Company is a summer peaking system as we discussed earlier, particularly we are talking about a similar example of HT in the demand area, that if a customer uses KWH in the wintertime, that customer provides revenues to the company that are beneficial to the company in the sense that he is not imposing summer higher cost on the system. Summer related higher cost on the system.

A Well, that's the characteristic of a heating load. We know that the heating load is only going to be on in the winter months and therefore, a lower price can be offered to serve that load.

Q Well, I take it you are referring to the fact

that you know with the RH customer, that customer is going to add more in the winter than they do in the summer.

A. We know that the RH customer is going to provide approximately how many kilowatt hours of energy will be sold to a heating customer with resistance heat during the winter months, yes.

Q. In terms of benefit to the company, in the winter, that is a creation of revenues to the company without increasing the cost to the company other than the energy cost, doesn't it -- -- isn't it irrelevant whether that usage, that 3000 KWH usage is from heat or any other application in terms of benefits to the system?

A. The price per kilowatt hour that's offered to the residential heating customer reflects the expected average price per kilowatt hour that will cover our cost to provide his service during the eight winter heating season months for the kilowatts and kilowatt hours of a typical heating season. Admittedly, this price per kilowatt hour can vary depending on the type of heating season, a heat pump having a lower total kilowatt hours during the heating season than a straight resistance type heater.

This sort of variation can best be reflected by measurement of demand and energy as is being proposed in this experimental rate. And indeed, with such a rate as is

being proposed, the same pricing could be offered and would be fair for any type of load factor that occurs during the winter months, and therefore, the rate would not have to be restricted to heating customers.

Q You are talking about experimental rates.

A That's right. Where there's demand and energy measurement. One could make that same rate available to all uses because it properly reflects load factor. Where you have a straight kilowatt hour rate, of necessity, the average price per kilowatt hour has to reflect the average load factor of that load you are providing, namely heating.

Q Well, in terms of your cost of service study for R and RH, page 43 and 44 of RCW-1-A, the demand cost and energy cost are essentially the same for those two classes, is that correct?

A The production and transmission demand charges for RH are approximately $108.00 and for R, $107.00. The class peak is 22 versus 23 and this is not surprising because we are looking at the four summer month periods. Or four months of the summer period and both classes are doing essentially the same thing during that period. They are serving air-conditioning load, primarily.

It is the biggest load.

Q So you allocate your costs based on what's happening in the summer?

A. That's right. We allocate the production and transmission.

Q. Production and transmission. So does it not follow that a customer, no matter whether it is heat use or anything else that would get a combination of appliances that would get that customer to 3000 KWH level or whatever level, that customer is benefiting the system under your theory because they are providing revenues where they have the same cost to serve?

A. I don't follow your question. Both customers have a summertime demand which is essentially air-conditioning and hence, they're allocated the approximately same total production and transmission charges. But certainly, a customer who uses 3000 kilowatt hours in one winter month and then drops down to 500 for the remaining winter months imposes a different cost on our system by requiring us to build a distribution system to feed that 3000 kilowatt hour load for the one month than does a heating customer who uses that demand over the eight winter months and produces many more kilowatt hours. Many more kilowatt hours of revenue to pay for the investment into distribution system.

If the rate were available to all customers at the heating block price, you could establish a high demand during one month of very few kilowatt hours use used for the eight month period and that would not be equitable pricing.

BY MS. BUSH:

Q Have you done a study that verifies what I took to be an assumption in your response, which is that residential customers who use at a higher level did not do so consistently over the eight winter months?

A The heating block price is provided only over 500 kilowatt hours, 500 kilowatt hours being the average level of base use excluding heating for the class.

Now, the kilowatt hours over that for a heating customer are priced in accordance with the total kilowatt hours that we expect to receive from that customer during the eight winter periods, eight winter month period. A customer without heating certainly will have an entirely different pattern of use over that eight winter month period. And the load factor of that load would be entirely different. So that it must be priced differently.

The mechanism by which they could be priced the same, if you had a meter that recognized demand and energy, namely, demand measurement, that is what we are proposing in this experiment.

Q Do you have some study or what do you base your assumptions on about the load factor of the residential customer who has three thousand KWH usage during the winter months and a residential heating customer that has three thousand?

A We have done a study of the heating load and know what load shape we can expect over the winter period from that heating load. And we know it is entirely different than the load shape that we get from regular residential customers without heating.

Q You have done a study of regular residentials to see their load shape over the winter months?

A Yes.

Q And were those studies comparing the same level of usage customers?

A The study is done on a stratified basis at various levels of use, and load shape is developed for each level of use.

Q So, you have compared the high use regular residential with a residential heating?

A Yes, and they are different.

Q And what are the differences that you saw in these load shapes?

A Load shape is a tabulation of 48 half-hour loads for a daily period, and one compares those one load versus the other. Now, visually you can see they are different.

Q Well, can you give me some information from these studies that relate this difference that you saw in the two groups to the 2.61 cent differential in the price?

MR. HALL: Could I have that question reread, please?

(Whereupon, the following was read by the Reporter as requested:

"Q Well, can you give me some information from those studies that relate this difference that you saw in the two groups to the 2.61 cent differential in the price?")

THE WITNESS: We can provide you with a load shape for the large use residential customer as compared to a load shape for the RS customer.

BY MS. BUSH:

Q This will be over the eight winter months that we were discussing?

A The load shape is developed for a winter day, and that is what the comparison will be. We don't develop load shape for 8760 hours a year.

Q You are talking about the daily load of the two customer classes, groups?

A Yes. That is the load shape. That is what influences the cost. The demand that that customer puts on the system at any half hour is the distribution system that has to be provided to serve that customer.

Q Could you as part of that response relate the

differences that you are going to show in the daily load shape to the 2.61 differential?

MR. HALL: What do you mean "relate"?

MS. BUSH: Well, the cost, the rate is based on the differing cost to serve which is related to the daily load shape. I would like to see how those two match, the actual price to the cost.

MR. HALL: I don't believe Mr. Williams in fact said the difference in the rate is totally related to the difference in the load shape. I don't recall that is his testimony.

THE WITNESS: That comparison is made with the return from RH versus residential class. That is really the bottom line of the comparison of the pricing, the return on the RH as compared to the return from the regular residential as shown on page four of RCW-1 and 1A.

That looks to total cost and total revenues and how did you make out, based on the rates in effect and proposed to be in effect. And it shows under proposed rates RH will provide 11.86 per cent return and regular residential will provide eight per cent return.

BY MS. BUSH:

Q So, you are saying that the dynamics in terms of usage is not -- that is not a justification for your price differential, that is a justification for your different

rates of return?

A The different load factors cause different costs to be incurred. The summation of those costs and the summation of all of the revenues from the different prices of the two rates are summed in the cost allocation. And the result of all that summation and bottom line, if you will, is 11.56 for RH and eight per cent for regular residential.

MR. HALL: Your Honor, would this be an appropriate time to break for lunch?

MS. BUSH: That would be fine with me.

THE ADMINISTRATIVE LAW JUDGE: We will resume at 1:10.

(Whereupon, at 12:25 o'clock p.m., lunch recess commenced to be resumed at 1:10 o'clock p.m. the same day.)

THE ADMINISTRATIVE LAW JUDGE: We are ready to begin.

Miss Bush?

(Raymond C. Williams resumes the stand.)

BY MS. BUSH:

Q Mr. Williams, before lunch we were talking about the cost imposed on the system for the WH as contrasted to R customers on a daily basis during the winter period, and you were going to provide me with certain information.

A Yes.

Q The water heating off-peak charge is 3.53 cents per KW for the first 400 and 3.14 for the additional KWH, and since that usage is by definition off-peak on a daily basis, can you at this time provide me with some information that would explain the justification for the cost differential in these rates as the WH rate as compared to the RH rate?

A Well, the end block pricing of the two are very close. The WH rate could be constructed with a customer charge and a single block energy charge. The only reason for the blocking in that rate is the collect customer charges. It could very properly be stated with a separate customer charge. This has been the historic method of presentation. Certainly it would be appropriate to stay a customer charge than a single energy charge.

Q So, you could have a separately stated customer charge that would recover the $94 that your cost of service shows for the customer charge, and you have an energy charge that would be as low as the RH energy charge?

A It could be separately --- yes, it could be so

stated within the context of revenue requirements of this rate, the concept of a separately stated customer charge and an energy charge I would certainly agree would be appropriate.

Q But the energy charge should be the same as the -- at least the same -- at least as low as the RH class block energy charge?

A It should approximate that, yes.

Q Do you know in fact whether it should be lower or the same? Do you have information that would compare the daily load shapes for those classes?

A Well, the water heating load is a high load factor load relatively constant year around.

Q Wouldn't the daily ---

A And it is, as you state, off the system peak by its controlled mechanism.

Q To that extent it would be better than the RH load because it would be totally off peak?

A Well, the RH load we are discussing here, I presume you mean the heating load, ---

Q Yes.

A --- which is only on in the eight winter months, that amount of load over the base load. So, they are both really off the system summer peak.

Q I am talking about ---

A The RH load is different in that it is not

off the daily peak, that is right, that it does require distribution system capacity, where the water heating load is off both the system peak and the distribution system peak by its control nature. So that one would expect to see no difference, presumably.

Q It would be lower?

A Yes.

Q Are there any customer costs being collected in this tail block?

A Yes, the customer costs are not all collected by that forty cents difference. Some of them would remain by this existing structure.

Q They are not all collected in the first block?

A Well, the differential between the two blocks is approximately forty cents.

Q Yes.

A And forty cents times the average 400 kilowatt hours per month use gives $1.60 per month. $1.60 times 12 is the annual collection, and that is less than the $57 per year customer charge.

Q The class peak for the regular residential, is that in the summer?

A Yes.

Q And the residential heating customers, their

class peak is when?

A Your question was the absolute class peak of residential heating customers?

Q That is right. And the class peak ---

A That is in the winter.

Q The residentials in the summer and residential heating in the winter?

A Right.

Q For the water heating rate, your KCH-1A shows as the class peak cost $1.937, and the maximum KW for that class is 5.5. So that the demand cost would be $4.51; is that correct?

A Where are you finding 5.5?

Q Well, the controlled device furnished by the company shall be suitable for use of loads up to 5.5.

Do you know what percentage of your load is above that if customers install their own? This is in the rate schedule, second paragraph, special rules and regulations.

A Yes. That is the maximum size water heating will accept. That is what that says.

Q This is predominantly what you have on this rate?

A No. That is not predominance, no. That is the maximum.

Q Okay. When you say predominantly, you do not have 5.5, you mean predominantly have water heaters that the customer has installed that are greater than 5.5?

A No. The predominant size water heater on our system is four and a half.

Q Okay.

A There are some two and a halfs, and some one and a halfs, but we have some up to five and a half.

Q Assuming that the customer uses 5.5 KW, would the cost of, from the cost of service study of .8137, the total overall demand cost for that customer would be $4.51 and you have 57.85 is the customer charge and adding those two together, that's a cost to serve of 62.36. And then if you take the energy, if you take a 400 KWH block energy cost of .01731, on an annual basis, that energy cost would be $83.09 and adding those two costs together, you get $145.45.

Now, our calculations show that for that customer, that the bill would, in fact, be $169.44. Do you agree with that calculation? That approximately a $24.00 or 16 and a half percent charge that is higher than the actual cost to serve?

A The costs are, as shown on page 65, are calculated at 10.82 percent return. The return on this class is a little higher than that and I think that's what you see.

Q What return is there for this class?

A. I will have to check. I don't know. But I know it is over the system average and 1042 is the system average.

Q. Do you think it is as high as one and a half times the system average?

A. I will have to check. I don't know.

Q. You will provide that information to us?

A. Yes.

Q. About the rates of return, Mr. Williams, is it not true that what number you get in terms of what the exact percentage rate of return is and the accuracy of that number is totally dependent on the accuracy of all the judgments that you make in the cost of service study?

A. The rate of return that is used in these unit cost developments of customer demand charges is indeed the same for all, namely 10.42 which is the system average rate of return, so that we are comparing all classes to the same level of comparison to make it meaningful.

Q. You are not talking about the class system rate of return as on page 4?

A. The class system rate of returns vary above and below that system average as shown on page 4. And in order to make a meaningful comparison of where we stand relative to the system average bogey return, we do these unit cost studies on that system average return.

Q Is this rate of return for this class, do you know if it is 1 percent higher, 2 percent, 6 percent?

A I will check. I don't know.

Q You don't know? With regard to class rates of return as shown on page 4 of your cost of service study, my question, then, is is not the accuracy of that number dependent on the precision and accuracy of any judgments that are made in allocating cost in your cost of service study?

A Well, I don't know what you are terming a cost of service study.

Q Your cost of service study.

A I heard that. But the material on page 45 is what I call a unit cost study. It is a product that we are able to produce after we do a cost of service study, which is the basic document contained in the first some 39 pages of RCW-1-A. So that the returns used, namely the system average return back in the unit cost study have no bearing on the cost of service study which is the basic document. The 10.42 is a result of the cost of service study, and the cost allocation study that's done up front and that 10.42 is a system average return that that study yields.

Now, in order to look at each class and the components of each class, we use that system average, 10.42 in the unit cost study in the back pages of the book.

Q Well, aside from the unit cost study - -

A. It has been called to my attention that on page 60, we have a diagram that I believe would answer your question, we had before, that shows the cost of service as a solid line and the revenue under existing and proposed rates is dotted lines and you can see that depending on what level of annual energy you assume, you can be below or above the cost to serve line.

Q. What is the average usage for WK customers? Average annual usage?

A. 4800.

Q. So that's - -

A. And I think that's the example you cited, 400 kilowatts a month, isn't it?

Q. Yes.

A. So that that would be consistent that the proposed rates would yield an annual revenue above the cost of service line. The shape of that revenue line could be changed by restructuring the rate with a higher customer charge which in effect, would start you off higher up the vertical and take it out at a lower slope as one goes out. That's the discussion we had previously. It was customer charge and a single energy charge.

Q. All right. In your testimony, in statement 2-A, you address the question raised by Chairman Goode in his

memo about the rates of return by class and you, as I understand it, it is your position that rates of return, a legitimate goal of rate making, in fact you think the only fair and reasonable way is to have an equal rate of return by class, is that correct? Each class should provide the same rate of return as every other class?

On page 9, I believe you addressed you state that each class of customer should be expected to pay all of the cost to supply service to that class, no more, no less. In other words, we should strive for an equal rate of return for all classes. To have any other goal is discriminatory.

A. And continuing in the next paragraph I say any reduction in residential rates for social or political reasons should be recognized as exactly that. There is no other reason to establish as a policy goal a lower return for the residential class.

Q. I want to discuss with you right now social or political goals. I want to discuss what I quoted in the first paragraph which is your view about equalized rates of return and I will repeat for the third time my question.

Is it not true that the accuracy of the numbers that you have on page 4 of your cost of service study which shows the rates of return by class, the accuracy of that percentage number is dependent on the precision and judgments that you have made in the cost of service study?

A. In doing any cost of service study, judgments are required and the end result is obviously dependent upon those judgments. We believe that the judgments have been reasonable and fully supported by research data and reasonable tests and we believe our cost of service study is reasonably done.

Q. I understand that. At the same time, is it your position that your judgments are the only reasonable judgments that could have been made that resulted in these rates of return?

A. This cost of service study methodology that we are using is the result of not my judgment alone, not any one person's judgment alone. It is the result of years of research and study and trying to do the best, fairest job we can in allocating cost.

Q. I'm not questioning in these questions the quality of your judgment in your cost of service study. What I'm asking you is a separate question which is do you also say in addition to the fact that you think your judgments are valid in this, that you made in the cost of service study, are you also saying that no other judgments could have been made that would have been reasonable and would have resulted in a different rate of return for any one class?

A. We believe that our methodology is the most reasonable for our company's condition. That's our opinion.

Q Do you also believe one step beyond that that another person could not make another reasonable judgment and allocate cost in a slightly different way that would result in different rates of return than what you show on page 4 of RCW-1?

MR. HALL: Objection, Your Honor. I think Mr.Williams has already stated that he thinks the company's approach is the most reasonable. Obviously, we have to get into what the other judgments are and what the other studies are and so forth. One can't really speak in general terms in terms of what such a future study would be and whether it would be reasonable or not.

MS. BUSH: I appreciate if Mr. Hall would not answer the question for the witness. I have not gotten an answer from the witness. I think Mr. Hall has answered it just the way he thinks it should be answered.

MR. HALL: Mr. Hall isn't answering the question. He is stating an objection.

MS. BUSH: You gave an answer in your objection, however.

MR. HERSHEY: I would like to hear the answer, too.

THE ADMINISTRATIVE LAW JUDGE: Would you read the question?

(The question was read by the reporter as follows:

"Do you also believe one step beyond that that another person could not make another reasonable judgment and allocate cost in a slightly different way that would result in different rates of return than what you show on page 4 of RCW-1?")

THE WITNESS: I believe that the cost allocation we have done is done in the most reasonable manner for this company and its conditions. As a part of this filing, we also submitted cost allocations done on several methods as directed by the Commission. The results of these several methods vary but extremely in small variation from our method which to me substantiates that our method is a reasonable one. Even changing to these other methods such as the average of the twelve months demand, the average in excess demand, the single annual demand, these other methods of allocation produce very small variations in the bottom line result and that, to me, substantiates that indeed the method we have used has been a reasonable one and an appropriate one.

BY MS. BUSH:

Q Mr. Hall, I am not -- excuse me. Mr. Williams, I am not asking you to testify on behalf of any other cost allocation methodology. I'm asking you as an expert in rate design, is it your experience that if a person designing rates

makes different judgments about allocating costs within a range of reasonableness, would that, in fact, or might that, in fact, result in differing rates of return?

A. I think that's exactly what's proved by our use of these other methods. Those are other approaches, other judgments. We have used them and the rates of return did not vary appreciably at all.

(Transcript continues on next page)

BY MS. BUSH:

Q So that the rate of return is not a precise factor that measures exactly in a mathematical precise way what rate of return any one class is providing?

A The cost allocation study provides a reasonable area of judgment for the returns as among the various classes. It is not meant to be precise to the enth.

Q In your statement that we should strive for equal rate of return from all classes, can I fairly assume from that statement that it is your opinion that there are no differing risks measured by any standard you would like that different classes impose upon the system?

A I do not believe that there is a reasonable differentiation of risk measurement that can be applied to the various classes, no.

Q So, there might be a risk differential, but there is no way reasonably to measure it. Is that your testimony?

A No. To my knowledge, there is no risk differentiation that exists and can be used.

Q Are you aware in the literature or your contact with other people in your field that there are experts in the field that think there is a different risk among classes and it can be quantified?

A I am aware of some testimony in that area.

yes.

Q Are you aware of Mr. Brennan's testimony in Delmarva Power & Light Company?

A Yes.

Q But you don't agree with Mr. Brennan's theory? Is that your testimony?

A That is correct.

Q But you agree with what he testified as to his overall rate of return for the company?

MR. HALL: Objection. This is rather irrelevant at this point.

MS. BUSH: The question is withdrawn.

BY MS. BUSH:

Q I would like to posit a hypothetical situation to you, Mr. Williams. Comparing two different systems that both have total KWH sales of a million and one has two customers that uses 500,000 KWH and one has 10,000 customers that use ten KWH each.

Now, would you still maintain that characteristics of usage of the particular customers of the company have no relevance to what kind of risk those customers impose upon the system?

A What you are asking me to compare has no relevance to a utility system such as ours as I can view it, but one would have to allocate the charges in the same

manner as customer demand and energy to serve those two customers and come up with those cost components and properly allocate them.

Q And you would not take into account in your pricing structure any recognition of the risk, differing risk that those customers as individuals might impose upon the system?

A My pricing structure would take into account each of the three components to serve them and the continuity of revenue to support all of those components.

Now, exactly what my pricing structures would look like, I would have to consider that before I develop such prices. But certainly it would be based upon the customer demand and energy components on an annual basis and a likelihood of checking those costs.

Q So, even though the company would be at great risk, say, of one of the customers that uses 500,000 KWH, terminated usage, much more at greater risk than if one of the customers in the system that used ten KW, you would not try to guard against or insure against that risk for the companies in terms of its revenue stability?

A I said that I would have to price the supply to each customer with the idea of recovering my costs on an annual basis to supply that customer, and I would consider what mechanism was necessary to assure myself of

recovery of those costs.

Q So, you might move beyond the traditional things that you have considered in this particular case, that is, in the current rate case, like customer charge, demand charge and energy charge, if you were presented with this kind of a situation?

A They would be the basis of my allocation of cost. How you collect those costs, through what pricing mechanism, would depend entirely on many things I would want to know about those two conditions. The situation is entirely different, certainly, than a utility system where there are thousands of customers that make up each class, and one would have to take that into consideration in developing appropriate pricing.

Q So, you wouldn't do it through the rate of return, but you would recognize some kind of risk, and you would design your rates in a way that you don't know now what that would be to insure the company against the risk?

A Well, I would recognize the importance of recovering all of my cost, customer demand and energy, just as I recognize the importance of recovering my cost presently from the HT class with a ratchet on summertime demand.

That is a pricing mechanism that is built into the rate to recognize the fact that the demand may occur only during a short period of time, but the investment

in that facility is a continuing thing that has a continuing revenue requirement, and a person would have to use that kind of thinking in developing a rate for two customers on a utility system. There is a continuing revenue requirement and some pricing mechanism would be necessary to recover that cost.

Q So, you recognize there are risks that are different by -- from different customers but that you would devise other mechanisms, for example, a ratchet to address that problem?

A I am recognizing that costs are incurred from simply three sources, a customer, demand and energy component.

The pricing mechanism to recover those costs becomes a judgment upon the customers in the class, the type of load. The pricing mechanism has many shapes that it may take, and this always becomes a judgment in utility ratemaking or any ratemaking.

Q Aren't those factors that you are describing now more variations that occur in an annual period on a seasonal basis or daily basis, you are not really addressing the problem of any revenue stability over time because of variations, unexpected and unpredictable variations in sales from any one class?

A That is exactly what I am addressing. When a company makes an investment in production capacity and

transmission capacity, one borrows the money, and one must support that investment, and one must recognize those charges are going to be there on a continuing basis. And it certainly is appropriate to develop a pricing mechanism to recover those charges from the customers that are using those facilities. That is what we try to do.

Q Well, for example, didn't Allenwood Steel Company in your service territory shut down at some point in the last few years?

A Yes.

Q What, within your pricing structure, do you have that insured the company against the risk of the radical loss in revenues associated with the termination of that customer from this system?

A When a customer shuts down, goes out of business, leaves the system for any reason, the residential, commercial or industrial, obviously that piece of load is lost to the system unless some other customer comes in and replaces it, which is now the case in the case of Allenwood Steel property.

Q But, Mr. Williams, when you are talking about --- when you are comparing residential to industrial and you got 1.3 million residential customers and about 9,000 industrial customers and the usage, total usage of a residential customer is only 23 per cent and industrials is 63 per cent,

when you talk about losing one industrial customer, aren't you talking about a much more significant impact on the company than losing a residential customer?

A Certainly the load loss is bigger per industrial customer than the load loss per residential customer, no question.

Q But to your mind, that doesn't present a greater risk with that?

A To my mind we have some mechanism built into the pricing itself where we have a minimum associated with the contract quantity that the industrial uses. We have a ratchet on his contract. We have a ratchet on his summertime amount. Those are our mechanisms to recognize variation in seasonal load, to recognize variation in production capacity, if you will, on the contract level.

So that a customer does not seek more capacity than he realistically needs, and we don't have to build more than he needs.

I think those are appropriate pricing mechanisms of utility rates.

We have no customer charge in the existing residential rate. We don't make that customer make any commitment. His minimum commitment on a residential basis is $2.50 a month. I think the pricing mechanisms recognize the commitment of the company.

Q You mentioned the types of pricing mechanism or rate structures that you have that protect on an annual basis the companies subject to revenue loss.

Do you have for HT class an exemption, some type of exemption related to the eventuality of a strike, labor strike by the employees of the customer?

A Yes. There is a casualty rider. Is that what you are referring to?

Q Yes.

A We have a casualty rider in the tariff which provides for relief on a short-term basis for some unusual unexpected circumstance.

Q It's provided, I think, in interrogatory response to the Consumer Advocate.

A It's tariff page 54.

Q Yes.

What does this particular rider provide with regard to strikes?

A The applicable clause states that when a customer is prevented for a length of time in excess of 48 hours from using all or a substantial part of the amount contracted for by reason of strike, riot, fire, storm, flood, drought, interference by civil or military authorities or any other cause beyond his control, and if those conditions prevail, the contract minimums are waived under the guarantee

waived, as we do not demand collection of the minimum demand charges for that month or portion of a month that is involved in the billing.

We do it on a daily basis, the days of the strike.

Q So, it is not the end result of that rider that, at least the other HT customers have not -- all of the customers of the company are underriding to -- subsidizing to the extent the customer's management position on vis-a-vis its employees in any differences in opinion those two parties might be having?

A Not at all. I think it is a reasonable recognition between two contracting parties that in case of a catastrophe, some relief will be given.

Q Well, I would agree with you, Mr. Williams, for the other eventualities listed there, but I have some concern that having a strike as one of the eventualities against which the customer is protected is taking a social or political position that other customers of the company might not agree with.

A A social consideration in my view is a continuing consideration, not a short-term unexpected casualty relief.

Q You don't, of course, have a similar exemption for residential customers who are engaged in a strike, do you?

A In the case of the industrial, the only reason exemption is given is obviously the industrial's load disappears. The residential during a strike, the load doesn't change.

Q But hasn't it been your testimony that the rates that you charge the customer reflect the cost of service?

A When all parts of the rate are in place and one of those parts is a guaranteed condition, this provides the customer relief of that guarantee, for the short period of the strike, because he has been experiencing a casualty for that period of time.

Q But to the extent that your contracts and your rates reflect the cost to serve and to the extent that for a short period of time or whatever period of time they are not in application, does that not, by definition, result in a revenue loss, a lack of revenues to the cost to serve for the company?

A To the extent that the contract guarantee is not applied, there's a revenue loss, yes. There is another provision to the casualty rider that extends the contract term for a length of time equal to the time where such casualty relief was given. When an industrial signs a contract, he commits to a minimum of three years and if such casualty relief is given for one month, that three year period is extended by

a month.

Q Yes. But that doesn't really impact on as long as that industry is operating, which is most likely the case, that does not really impact on the fact that the company is not collecting rates that are consistent in their opinion with the cost to serve and that there is a financial result of that which impacts all the customers of the company.

A Well, over the three year period of time, the contract minimum is collected is my point.

Q Yes.

A For that one month period, you are correct.

Q And in fact, it is probably the case, is it not, that the collection of the contract, the one month beyond the normal contract period would not, in fact, work out to be a collection of the contract during a time when the customer was not receiving service?

A It depends on his operation during that one month extension.

Q Well, what has been your experience in terms of whether customers have had to pay the contract terms when they are not in fact receiving service at the end of the normal contract period?

A The ratchets are applied month by month as the load level varies. I have made no study of the extension application of that provision.

Q So you don't really know whether, in fact, it happens that the company makes up its revenues during a month period after the termination of the service when the customer otherwise would not be or is not receiving service but just paying the terms of the contract?

A No. I am sure that it does because the minimum terms are always in effect. They are in effect during that one month extension just as they would have been in effect during the one month when the casualty rider was applied. I know that they are in effect.

Q But you don't know whether, in fact, the customer is taking the service during that period or not?

A He is either taking it or paying for it. One or the other. He is paying the contract minimums if he is not taking that. So I know that.

Q Well, we know he is paying for it. But isn't the question whether, in fact, whether he is using it during that time?

A That depends on his level of production during that month.

Q In response to RS-25, you have -- I wanted to clarify what these numbers in terms of numbers of customers are, that they represent. I had an impression that you had twenty -- it's about the lead study and the number of --

A Yes, I have it.

Q So that column two, there, is the total number of customers in each rate as indicated?

A That's right.

Q And are they the same number of customers that are graphed in volume Roman numeral IV-C-17?

A Yes.

Q Okay. I have some questions generally on your cost of service methodology. Is it your testimony that the embedded cost of service study that you do is a means whereby you can determine and evaluate the relative rates of return for the various classes?

A Yes.

Q And in this process, you have allocated costs based on demand energy and customer components, is that correct?

A No. We have not - - that's the final result of the unit cost study, is the cost determination by customer demand and energy components.

Q Okay. But you look at various costs that the company has and you try to quantify whether these costs are created by demand related activity or by energy or by customer?

A Yes.

Q And you have an energy cost that is an average energy cost, is that correct?

A Yes.

Q It varies with the quantity of energy produced by the company? On an annual basis?

A The energy cost is the total cost of energy production by the company divided by the kilowatt hours sold is the way the average energy cost is arrived at.

Q That's on an annual basis, right, in accordance with the time period under study?

A That's right.

Q Now, you also have taken some costs that you say vary with the number of customers that you have. Is that correct?

A Well, the costs that are customer related are the costs that are allocated to the customer components, yes.

Q What are the customer costs or what are the costs that vary with the -- -- when you add or when a customer is added or leaves the system?

A Well, the costs that are allocated to the customer component in our study are the costs of the system just to reach that customer with minimum demand, and all costs above that are demand related costs.

Q So your customer cost in the terms of your study are not costs that actually in fact usually vary when you add or subtract a customer to the system. They are a judgment that you have made of what is the minimum to serve a customer.

A. They are an allocation of our present system, and all the pieces of that system that are necessary to reach from the transmission system out to that individual customer's meter.

Q. But they are not costs that would, by necessity, vary when you add or subtract a customer from the system?

A. A customer added or subtracted from the system can be a customer in apartment two leaving the system where the meter is in place and the meter is turned off. There's no change in investment in the system. Customer three comes in and takes over the apartment and that's a turn-on. There's no change in investment. The customer added to the system can be the customer that builds a new house three miles away from the last line. There's considerable investment to reach and serve that customer added to the system.

Q. So you don't distinguish between those two eventualities?

A. We look at the total minimum cost to the system to reach customers and divide by the number of customers and that's the customer component.

Q. To what extent does your line extension policy and what is that policy, to what extent would that policy cover the situation where you have a customer adding on the periphery of the system?

A For residential customers, there is no charge for the addition of that customer to the system. To the customer. For commercial and industrial customers, the customer'sadditional revenue is matched against the additional cost to connect that customer to the system and if the cost is in excess of the revenue, the customer is requested to make a contribution.

Q Could you provide us calculations as to what a similar formula would be for residential customers as contrasted -- where you have that kind of calculation for commercial and industrial, could you provide that for residential?

A We do not make a revenue test for residential customers. We connect and extend the residential customer without a charge. That's our policy.

Q I'm not asking you to adopt or change your policy, but to provide me a calculation to show what that amount would be in a comparable fashion to what you have calculated for industrial and commercial.

A We have calculated on commercial and industrial on each individual customer basis. It varies widely among customers in commercial and industrial class and would vary widely among customers in the residential class.

Q In your residential gas division, do you have a formula for extensions for residential gas customers?

A Yes, we do.

Q And what is that formula? Or could you provide that for us in written form?

A There is a ratio of cost to revenue and that cost is not net, there is a contribution required from the customer. That is applied to residentials as well as commercials in the gas side of the business. Because there, the customer obviously has an option as a residential customer to choose or not choose gas heat.

We are in a competitive market with other fuels. The residential electric customer certainly needs electric service. He has no other choice and therefore, we make no connection charge for extension of facilities.

Q Does your rationale with regard to residential heating customers apply?

A Residential heating customers are indeed residential customers for their basic use of electricity, just as all other residential customers are. They need basic electricity supply for occupying their home for lighting and cooking, just as every other residential does. There's no difference.

Q Would you provide us with a calculation that is the cost to add a residential heating customer three miles from the existing distribution system of the company?

MR. HALL: Do you want the extension underground or above ground or what?

MS. BUSH: Above.

BY MS. BUSH:

Q Now, in your cost of service study, you allocated some demand cost on the four peak days, which were your production and transmission plant, is that correct?

A All of our production and transmission costs are allocated on the basis of the average peaks of that class for four summer months.

Q And you also allocated costs that were the distribution expenses on the basis of the non-coincident peak on the various customer classes, is that right?

A Yes. Not some, but all distribution costs are allocated on the basis of the non-coincident peak of the class.

Q And were some of these costs costs that varied with area peaks, substation peaks and individual customer peaks?

A They are the non-coincident peak of the customer class.

Q All right. And are there - -

A Residential, GS, HT, PD, those class peaks.

Q Are there some costs which vary with area peaks, substation peaks and individual customer peaks?

And if so, how did you allocate those?

A I don't understand your question. I presume

you are talking about distribution system costs, when you talk about area peaks. Area peak is normally a nomenclature of an area of the distribution system.

Q Yes.

A We look at the residential class peak and allocate the distribution system costs based on that residential class peak, and the portion of the distribution system that's required to serve the residential class, namely all the way down to secondary volume.

Q So you didn't make a study which would be quite complicated and extensive of subarea peaks or individual peaks and allocate costs on the basis of that? Rather, you used the class peak as a proxy for allocating those costs to each customer within the class on the same basis?

A We are allocating costs to a class. We are not allocating costs to an area or to a customer. We are allocating costs of the system to a class which is a part of that system. If one's objective is to allocate costs to an area, then you would look at the peak of that area.

Q So the answer to my question was no. You do not look at the subpeaks?

A It is not appropriate to look at when you are allocating costs to a class to look at anything except the peak of that class.

Q Well, I wasn't asking you whether it was

appropriate or not. I was asking you whether you did that.

A. To the extent I understand your question, no.

Q. Now, with regard to your fuel costs as we discussed earlier, you used an average cost of energy calculated on an annual basis. You did not take into account the varying costs of fuel over a daily or seasonal period, is that correct?

A. We looked at energy costs for the annual period. That's correct.

Q. And you did not take into account the variation on a daily basis or seasonal basis?

A. We looked at annual energy cost and divided by annual kilowatt hours.

Q. Mr. Williams, you have answered twice one-half of my question and you haven't answered the other half. That is did you look at and allocate energy costs on a basis that indicates the variation on a daily or seasonal basis?

MR. HALL: Objection, Your Honor. I object to the repetition of the question. Now, the answer answered that question. Just didn't use your words. That's the only difference. I think Mr. Williams is entitled to answer the question in his own words.

MS. BUSH: He answered part of it. There might be a reason. It doesn't necessarily follow that he is going to

answer the second part the way that I might infer he would. I would like the record to be clear and I would like for him to be clear on that point. I can ask the questions separately and get separate answers.

MR. HALL: I do not perceive two separate parts of the question. But if you wish to ask it again, that's fine.

BY MS. BUSH:

Q Mr. Williams, did you, in allocating or establishing energy costs, take into account daily changes in the cost of energy?

A No, I did not, because I looked at energy on an annual basis and divided by annual kilowatt hours.

Q Mr. Williams, in making your calculation as to the energy cost, did you calculate that taking into account seasonal differences in energy costs?

A Well, when you say take into account, certainly the seasonal variations are taken into account in the annual total. They are in there. They are a part of it. And to that extent, I certainly took them into account. I have tried to explain exactly how I did it. Seasonal variations are all added into the total and I used the total. That's how I did it.

Q So that the way that you established your rates, the energy charged to the customer as calculated in your cost

service study does not reflect seasonal variations directly?

MR. HALL: What do you mean directly?

(Transcript continues on next page)

MS. BUSH: Well, he just said that he averaged them altogether. Directly means some non-averaging way.

MR. HALL: I can't really define that.

Your Honor, I think we are getting into word arguments here. Mr. Williams is answering the questions as he understands them, and it is just being repeated, and I would like to object to the continuing of that. I don't think we are going to get finished today or with this subject or any subject unless we have some limitation.

MS. BUSH: Well, if Mr. Williams can't answer the question, then he can say he can't answer it. If he doesn't understand directly, then he can ask what I mean.

MR. HALL: He answered the question at least three times.

MS. BUSH: You yourself admitted he didn't answer that question, he answered the other part of my question. So, I am breaking the other two parts down.

MR. HALL: I don't recall doing that.

BY MS. BUSH:

Q The rates that you charged the customers that are based on your cost of service study, that is, the energy component, does not directly reflect the seasonal variations in energy cost to the company; is that correct?

A The cost allocation in allocating cost looks

at the total energy cost for the year and divides by the kilowatt hours for the year.

The pricing in the rates in the tariff have different seasonal prices to convey a price signal to the customer that we are a summer peaking company. They do vary.

Q That is your summer/winter differential for the residential class and your ratchet for the HT class? Is that the reflection in your rates of the differing energy cost on a seasonal basis?

A You have mentioned the residential class, you mentioned HT. There are also provisions in GS and PD that reflect seasonal differences in price and are intended as a price signal to the customer.

Q Are you saying that the ratchet provision, for example, in the HT class is designed to reflect not the differing demand cost but the differing energy cost?

A No, I am not saying that.

Q Would you explain to me how the HT class -- how the ratchet in HT class reflects the seasonal variation in energy cost to the company?

A It reflects difference in seasonal cost of the company. I thought the question was what seasonal differences are there in your pricing, and this is certainly a seasonal difference in pricing, namely, the ratchet.

Q My question was energy ---

A I explained the difference in cost allocation - that is this book - that that is total annual cost, 12 months. It includes summer, winter, spring and fall. It is divided by total kilowatt hours. That is the single number.

Now, as a pricing mechanism - that is this book to the customer ---

Q Yes.

A --- we do have seasonal differences to convey to the customer that we are a summer peaking company, we would like you to limit your use during the summertime because that is what causes us to add capacity.

We do that in the residential rates by changing the price per kilowatt hour because that is the only price in a residential rate. We do it in the commercial industrial rates by demand ratchets because that is most closely related to the cost incurrence, namely, the demand.

There is no demand component in residential rates. So, we have to relate to kilowatt hour.

Q My question was not how the company's rates reflect the seasonal capacity cost or the fact that you are a summer peaking system, but how do your rates reflect the seasonal cost variation for energy, KWH energy, not capacity?

A Our HT and PD rates do not have any change in the price of energy from one season to another. Our residential rate, our GS rate does have a change in the

price per kilowatt hour from one season to another. That is an energy price, and it changes from one season to another.

MR. HALL: Your Honor, is this an appropriate time for a break?

THE ADMINISTRATIVE LAW JUDGE: I think so. Let's take a five-minute break.

(Short recess.)

THE ADMINISTRATIVE LAW JUDGE: I have one preliminary matter, to remind the parties that 10:00 a.m. is the deadline for filing briefs with me on the company request for certification and motion for order determining relevance of Limerick testimony.

At 2:00 p.m. tomorrow afternoon my decision will be delivered to the Secretary's office, and under the Commission's rules, the parties have until Tuesday to file briefs to the Commission on this question.

MS. BUSH: Tuesday morning the memo ---

THE ADMINISTRATIVE LAW JUDGE: Tuesday morning; the memo on ---

MS. BUSH: --- on Salem must be in?

THE ADMINISTRATIVE LAW JUDGE: Yes. The motion to strike.

(Raymond C. Williams resumes the stand.)

BY MS. BUSH:

Q Mr. Williams, if I could try to set the background for what I think we are talking about and trying to clarify here is, you get cost allocations or cost determinations, and you have got pricing structures, and you got energy and demand.

I am trying to determine what in your opinion is the extent to which the cost of service study and the extent to which the rates each separately reflect the seasonal cost of energy to the company. I think we have discussed earlier in the day the capacity situation of the company and how your rates are designed to address that problem.

And I am particularly interested in this because you have addressed it in your testimony, and it is part of the first ratemaking standard under PURPA in that one of the standards that must be considered and determined by the Commission is to what extent your rates take into account the extent to which total cost of the utility are likely to change its additional capacity added to meet peak demand relative to rate demand and additional kilowatt hours of electric energy are delivered to electric customers.

I think you testified before the break that

as to the ratchet and the summer/winter differential for the residential customers as reflecting the summer peak demand cost of the system. Is that correct?

A I was discussing the seasonal pricing mechanisms and how they are included in each of our rates.

Q Yes.

A And the seasonal pricing mechanism in residential rates is a differential in kilowatt hours cost between the four summer months and the eight winter months. And Rate GS, there is a difference in kilowatt hour -- sorry -- difference in price between summer months and winter months. In Rate GS there is a difference in prices per kilowatt hour between summer and winter. And in PD and HT there is a ratchet on summer demand.

All of those mechanisms are in the rates to convey to the customer the fact that it costs Philadelphia Electric more to supply their summertime load on the basis of this is our peak load period, this is when we have to add capacity, if load is added to our system, and this is generally when our price of energy, strictly energy is higher.

So that those messages are conveyed by those pricing signals in the various rates by the mechanisms that I have described.

Q So, it is your testimony that the energy cost to the system which you have in your cost of service study

figured on an average annual basis, in that those costs, energy costs are more in the summer than in the winter? Is that part of what you just said?

A They vary from time to time as we progress through the year and through the day, yes, and in general they tend to be higher during the summer.

Q And that the summer/winter differential in the residential class recognizes this higher energy cost in the summer?

A It is a pricing signal that is meant to convey to the customer all of our increased costs as it happens in the summer as compared to the winter, that we are a summer peaking company and we try to convey this message to customers with this pricing signal. That is the intent. That is the reason rates are constructed as they are.

Q Looking at the HT rate, are you saying --- is it your testimony that although none of the particular capacity charges or energy charges as such show a summer/winter differential, that the ratchet for the four summer months, you intend that and envision that as a signal to the HT customer that your energy costs are higher in the summer?

A It is a signal that all costs are higher, and it is ratcheted on summertime demand.

Each of the energy blocks has a demand sizing mechanism in it, so that when a demand is ratcheted, more

energy falls in each block.

Q When you say it is a sign that all costs are higher in the summer, you mean demand and energy?

A It is a means to recognize the total cost change from one period to another.

Q Customer costs, you don't include those as being seasonal; do you?

A No.

Q When you say that the energy costs for the company are higher in the four summer months than the eight winter months, your cost of service study doesn't reflect that.

On what do you base that determination?

A I said generally we would expect to see higher energy cost during the four summer months, and that is when we meet our peak load, that is when we are running up to the peak of our capacity and generally running higher cost equipment.

Q So that this is based on your general knowledge that during your peak period, you are running your peaking plants and, therefore, the energy cost per unit is, in general greater, than?

A Well, the whole pricing mechanism is meant to convey that this is the peak load period. This is when costs are highest. That is the purpose of a price signal.

Q The actual energy cost that the company

purchases, that is the purchased power energy cost, not the nuclear, coal or hydro, those costs, are they higher in the summer or winter, the energy cost?

A They vary. As we have discussed extensively, they vary on an hour by hour basis. But in general when you are meeting the peak load conditions in the summer, they tend to be toward the upper end of the range.

Q I understand what you are saying in general, but I am specifically asking about purchased power, which you might not know, but to your knowledge, are the PJM energy costs seasonably varying, and if so, generally which seasons are the costs, energy costs higher?

A The actual Lambda of PJM is determined not only by the seasonality of the load. It is determined by the equipment down for maintenance on PJM at any one given point in time. It is determined not only by PE load but other companies' load, some of which are winter peaking.

Q So, the sum total of all of those various factors from your experience, if you know, is there a seasonal variation in the energy cost for PJM, and if so, what is it?

A In general, the energy costs of PE company tend to be a little higher in the summer period.

MS. BUSH: Your Honor, would you direct the Witness to answer my question, please?

MR. HALL: In what way don't you consider it

to be answered?

MS. BUSH: I am not asking him about Philadelphia Electric energy costs. He has answered that question, and I understand that.

I have asked several questions to try to communicate to him to the extent that it is my lack of communication skill that I am interested in the PJM energy cost and whether it is my lack of communication or his inability to answer, I would like to know if he can't answer or I would like an answer to my question.

MR. HALL: Can you express an opinion, Mr. Williams, into the PJM energy variation or ---

THE WITNESS: I believe we have already provided extensive data on an hour-by-hour basis on PJM costs, Lambda.

Generally, PJM costs tend to be higher in the summer months slightly. When I say summer months, I am comparing my four summer months average as to an eight winter months average, that is, Philadelphia Electric summer/winter season, that is the basis of my rate class.

BY MS. BUSH:

Q What price do you use per kilowatt hour when you price energy from Muddy Run?

A Muddy Run energy is based on the input energy to store the water in the uphill position, if you will, and

the output of that is realized -- a lower level of output is realized during peak load periods, and the cost of that output is based on the cost to put the input into the reservoir.

Q That input energy cost, can you give me a figure that will represent an average of what that cost is? I assume it varies. Does it vary with what plant you are using to produce the energy to run Muddy Run?

A Certainly. We essentially pump Muddy Run during the nighttime period and weekend periods and transfer this lower cost energy during those relatively off-peak periods and use it in our on-peak daily afternoon periods.

Q Do you have a figure that you use internally for your purposes or any purposes of the company that you designate to be the average energy input for Muddy Run?

A No. It varies with the PJM or whatever source of pumping is being used.

Q Could you give me what the range would be for your plant that you produce on the weekends and evenings?

A I will see if we can obtain some information on that subject.

Q Do you generally purchase from PJM to obtain the energy to pump the facilities?

A If that is lower cost than that which is available on our system to do it, yes.

Q Can you say whether 75 per cent of the time

you pump it with purchased power?

A I would expect to a large extent it is done with purchased power.

Q Would you say 90 per cent?

A Without analysis ...

Q Would you give us some rough figure what percentage of the source of power, whether it is purchased power or not? And is the pumping ratio for Muddy Run 1.45?

A I'm sorry?

Q Is the pumping ratio for Muddy Run 1.45?

A Yes. That has been given in response to an interrogatory.

Q Now, you have a night rider in Supplement 6 for general service customers; is that correct?

A Yes.

Q What is the rationale for that night rider?

A To give the customer who can make use of a demand during off-peak hours that is more than his on-peak demand to receive it at a lower price.

Q That is 7:00 p.m. to 7:00 a.m.?

A 57A, tariff page, shows it is 8:00 a.m. to 10:00 p.m.

Q And is this rider offered -- it is part of the rationale of this rider that based on your cost of service study, the capacity costs that are most important to consider for the system are/four day summer peak capacity cost?

A No. The basis of this rider is that during these off-peak hours, namely 10:00 p.m. continuously until 8:00 a.m. in the morning, the customer's load will generally be over our system peak, and therefore, the only demand charges that we charge for the night service kilowatts during that period are the distribution system demand allocator.

Q So you are not --

A We do not charge for production and transmission because we believe that such demand during this night service period would not require any additional production or transmission system capacity.

Q Well, would the customer's usage in the winter season also not require additional production and transmission?

A The demand charges of the on-peak period are allocated on the basis of the class' contribution to the summertime load. Now, these demand charges are collected over a twelve month period. They are the production and transmission charges. They are divided by twelve months. They are collected over twelve monthly periods. What you are suggesting is the collection of these charges over a four month period, which would make these demand charges quite high. We do it

over a twelve month period.

Q So that your pricing of demand charges in the winter is more for a - - it is your collection device is not cost incurrence?

A It is exactly representative of the cost that that class imposes during the summer peak period. Now, how you are going to price them and collect the charges, we believe it is fairest to look at the twelve month period and collect the charges from that class.

Q I have made a calculation based on the figures you have given in MS-1 and 2 which are excerpts from FERC form 1 with regard to particularly your revenues from AMTRAK and industrial customers. You might want to check these figures later and accept them subject to check now.

A I missed your reference to the source.

Q MS-1 and 2. Those are pages from form 1. For this 1978 calendar year, I have calculated that your revenues from AMTRAK are $28,907,882.00. And your KWH is 847,962,677. The similar figures for industrial customers are $538,377,000.00 and 15,144,701 KWH.

My calculations indicate that the percentage of the total revenues that AMTRAK provides to the company or provided in this year was 2.36 and the percentage KWH is 3.01. For the industrials, the percentage of the total revenues is 44.8 and the percentage of total KWH is 55.4.

My question to you, is my understanding correct that you are not proposing an increase to AMTRAK? Increase in charges to AMTRAK?

A. Incorrect. We are proposing exactly the same rate increase to AMTRAK as to every other HT customer.

Q So they are within the HT class?

A. Yes.

Q What is the special contract that you have with AMTRAK?

A. For maintenance of the conversion equipment from 60 hertz to 25 hertz.

Q Within the HT class, what is the relative load factor for AMTRAK as contrasted to the other HT customers?

A. I have the load factor for the HT Class. I don't have the load factor for AMTRAK. The HT class load factor is shown in ROV-1-A.

Q Is it fair to assume that AMTRAK's load factor on the daily basis, load shape on the daily basis would not be as good as other HT customers?

A. HT customers have many, many, many different load factors. AMTRAK is one of them. They are all different one from the other. HT is a demand energy rate and it properly recognizes those variations in load factor. That's why the coincidence factor - load factor relationship is important and intended to do. Virtually every HT customer

has a different load factor than the other HT customer.

Q Given the usage that -- the nature of the service that AMERAK provides, would it be your opinion that for that customer, the load factor and the coincident factor relationship is the same or similar to what you see for the class as a whole?

A Without looking at expressly when AMERAK's demand occurs, I can't answer that question. I know that certainly the commuter operation peaks at 5:00 o'clock at night and it is generally the time of the -- usually on the downside of the summer peak and fairly close to the winter daily peak.

Q Would you turn to page 10 of your statement 2, please. You discuss on that page distribution plant cost and related expenses, is that correct?

A Page 10?

Q Of your statement 2. Not 2-A but 2.

A Yes.

Q And there you indicate that expenses were divided between the demand and customer component, is that correct?

A I indicate the distribution demand costs are allocated based on a non-coincident class demand.

MS. BUSH: Could I have the answer read back, please?

(The answer was read by the reporter as follows:

"I indicate the distribution demand costs are allocated based on a non-coincident class demand.")

BY MS. BUSH:

Q Well, first of all, the distribution plant costs and expenses are divided between demand, customer and directly assigned. Is that correct?

A Correct.

Q And then the demand cost you took and you allocated those between based on non-coincident class demand.

A That's right.

Q Now, did you, in determining that demand to allocate on non-coincident demand basis, did you use -- when you were deciding what to allocate on the basis of demand and what to allocate on the basis of customer, did you use a minimum distribution grid approach?

A Yes.

Q I think you testified earlier that you used that approach because you felt that was what was the minimum system necessary to get from the transmission facility to the customer.

A That's right.

Q Is that correct?

A Yes.

Q Are you familiar with the zero intercept method which - - are you familiar with that method? Zero intercept?

A Generally so.

Q And would that result probably in a different split, division between demand and customer components?

A Without making the calculation I don't know. I would doubt that there would be a big difference.

Q Would you - - is that considered, to your knowledge, in the field, an acceptable methodology?

A It is another approach.

Q You don't know to what degree a different result would obtain from application of that approach?

A Not without making the calculation, no; I don't.

Q And your method of allocating those costs is not such that it tries to target the costs that would actually change when a customer is added or taken from the system but rather what your judgment is as to what a minimum system, what minimum system has to exist or be in place to serve customers, is that correct?

A Our system recognizes the minimum system to reach from the transmission system to the customer's meter. That's correct.

Q Those costs that you allocate through this methodology, if one were to view them in a causal manner, are they, in fact, for the most part, costs that would not actually vary either with -- and I'm saying for the most part, vary within increase in energy, increase in demand or increase in customers?

A They would not vary with increase in energy nor increase in demand. They would change with increase in customers. And they are a very necessary part of reaching the customer. The system must exist to distribute the power from the transmission grid to the customer, and that's what we attempt to recognize with our customer component.

Q Well, I understand that you view these costs as costs that must, costs that support a system that must be in place to serve all of your customers, and I'm not -- I don't have any dispute with that, but my question is are those costs costs that in all cases vary with the actual addition or subtraction of an individual customer from the system within the geographic limits of the system?

A On average, they vary with the addition of one customer, one may not have to change all of the system, certainly from the transmission to reach that customer. But with the addition of many customers, eventually, that system has to recognize that addition and reflect that cost. This is on average, the minimum size system that's needed for each

customer on the system, consistent with our average embedded cost system of allocation.

Q And when you say on the average, that cost has to increase if you add many customers. You are not talking about in that situation, I take it, the case where the company extends beyond its extant distribution system, are you?

A I'm talking about the addition of customers. Now, whether they be beyond the existing line or whether they be within the existing line, eventually, that system must recognize the addition of those customers.

Q Okay. I would like to take out of the discussion for the moment, the first category you talked about which is additions beyond the existing system and when you say within the system, if you add a customer, the cost has to increase, what kinds of costs are you talking about in specific terms?

A Each case becomes a different consideration. It may be the extent of a service from an existing secondary. The secondary may not exist. The secondary may have to be extended. Primarily may not exist. It may have to be extended.

Q Well, in the particular service territory we are talking about, which is urban Philadelphia and suburban Philadelphia which has, for the most part, been developed for many, many years. We aren't talking about, really, except to a minor extent, a new housing development, are we?

A. Certainly within an area of a "developed area", you can have a new customer come on that requires extension of primary, secondary or transformer installations. The conditions vary widely from one customer addition to the next. You can't - -

Q. I'm sure that it can, but what I'm trying to find out from you, based on your experience and your knowledge of the system, what is the predominant occurrence. Let's take - -

A. The predominant occurrence is indeed an average recognition of the system to reach all customers. That's what we have done. We have looked at an average. That's the predominance. Now, you can focus in on any one unusual or any one certain circumstance and price it out. They vary widely on the basis of the pieces that I have just enumerated.

You have asked to price one out where we would extend the line three miles.

Q. Well, let's take one of the accounts that would be allocated this way. On page 10 of RCW-1-A, account 593, maintenance of overhead lines, secondary lines, you have allocated a portion on the basis of customer, number of customers. Now, is, in fact, the amount and cost the quantity and quality of maintenance that the company would have to do on overhead lines usually formed by the addition or subtraction of a customer from the company's customer population?

A. It certainly is. If I have to extend a span of line to reach a customer and a tree falls down over that line, and I have to put it back up, I have spent more maintenance money and I don't have the line there.

Q. You are talking about costs having to do with trees falling down, not whether you add or subtract a customer?

A. Maintenance has to do with maintaining equipment. That's the definition of this account you asked me to look at. 593, maintenance of overhead lines. That has to do with maintaining the line after it's up. Everything that happens to that line is maintenance.

Q. Right.

A. And I have tried to give you an example of how the maintenance could increase if that additional span of line is installed.

Q. Isn't that just what the distinction is, what you have testified here to and I am not quarreling with your perspective that you allocate these costs on the basis of customer that you see or are costs to maintain a minimum system, but that is not, in fact -- that's a different rationale or theory of policy than what I am asking you about which is whether these costs vary directly with adding or subtracting a customer from the system.

A. That's exactly what I answered. The more miles of exposure you have, the more maintenance you have. The

addition of a customer that requires one span of addition, you have an increment more maintenance.

MR. HALL: Excuse me, Your Honor. Could I ask how much longer you intend to continue this afternoon?

THE ADMINISTRATIVE LAW JUDGE: I intend to recess at 4:00.

MR. HALL: Your Honor, could I ask you for the indulgence of about a three minute recess for a telephone call?

THE ADMINISTRATIVE LAW JUDGE: Certainly.

(A brief recess was taken.)

(Transcript continues on next page)

MS. BUSH: Your Honor, I would like to identify for the record at this time a one-page document that has just been distributed as OCA Exhibit No. 1 entitled "Revenue, January 1973-December 1978."

And this document contains column one revenue figures computed from RS-1, which are the excerpts from form one in the beginning of Consumer Advocate interrogatory responses, and column number two is more accurately termed the square root of the variance which is based on a formula of the sum of the square root of each year's revenues minus the mean for that class, that class' revenue divided by M minus 1, and column three is, as it says, column two divided by column one.

And that is all of the questions of Mr. Williams.

MR. HALL: Ms. Bush, before we leave this, there will be a witness presented later who will testify to this material, or is there someone we can question with regard to it?

MS. BUSH: If you have any questions, either I can respond to them or Mr. Rohr can respond to them.

MR. RIEHL: This is being marked for identification at this point?

MS. BUSH: That is right. It is being marked as OCA Exhibit 1, and you can calculate where the

figures came from, and I gave you the formula. They are from RS-1.

(Office of Consumer Advocate Exhibit No. 1, being one-page document entitled "Revenue, January 1973-December 1978," was produced and marked for identification.)

MS. BUSH: I would like to ask Mr. Williams a few questions about this exhibit to get his opinion on several points.

(Raymond C. Williams resumes the stand.)

BY MS. BUSH:

Q In your experience, is the formula that I gave as the basis of column one, square root of the variance, an acceptable method of calculating variations in patterns of numbers over time?

MR. HALL: Would you state the mean again, please?

MS. BUSH: Yes. It is the square root of this entire formula that I am about to give which is ---

MR. HALL: Could I suggest an alternative procedure? You can give it to us in written form. Mr. Williams would be available next week, and you can ask him

questions then.

MS. BUSH: All right.

MR. HALL: I think that would be probably more preferable than fumbling with it now.

THE ADMINISTRATIVE LAW JUDGE: Mr. Williams will be available next week, and at that time the Staff will have cross-examination of him.

If there is nothing further, I think we will stand adjourned until next Tuesday morning, 10:00 o'clock.

(Whereupon, at 5:40 o'clock p.m., the proceedings were recessed.)

--ooOoo--

I hereby certify that the foregoing is a true and correct transcript of my stenotype notes taken by me during the hearing on the above cause, at the herein indicated time and place, before the Pennsylvania Public Utility Commission.

MOHRBACH & MARSHAL, INC.

By Eugene W. Holbert
Eugene W. Holbert, RPR, CP

By Kay Swigart
Kay E. Swigart, R.P.R.

10-19-79

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R-79060865
OCA-1
Phila
10-18-79

Revenue* January 1973-December 1978

	(1) Mean	(2) Variance	(2) ÷ (1)
Residential	353,721,872	6.566×10^7	.1856
Commercial	139,310,850	2.852×10^7	.2047
Industrial	423,470,144	1.003×10^8	.2369
Street Light	12,752,823	2.320×10^6	.1819
Total	960,758,873	2.033×10^8	.2116

* Source: Computed from RS-1

DOCKETED
INVESTIGATION
OCT 22 1979
DOCKET

DOCUMENT
FOLDER

ORIGINAL

Before

THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

--oOo--

In re: R-79060865, etc. - Philadelphia Electric Company. Investigation into a requested $123 million annual rate increase.

Evidentiary hearing.

--oOo--

Harrisburg, Pennsylvania

October 23, 1979

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Pages 1075 to 1213

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Harrisburg, Pennsylvania 17112

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Before

THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

--oOo--

In re: R-79060865, etc. - Philadelphia Electric Company. Investigation into a requested $123 million annual rate increase.

Evidentiary hearing.

--oOo--

Stenographic report of hearing held in Hearing Room No. 3, North Office Building, Harrisburg, Pennsylvania,

Tuesday,
October 23, 1979,
at 10:08 o'clock a.m.

--oOo--

BEFORE: JOSEPH KLOVEKORN, ADMINISTRATIVE LAW JUDGE

--oOo--

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PHILADELPHIA ELECTRIC

No. 5 - Direct Testimony of John J. Carroll 1135A

THE ADMINISTRATIVE LAW JUDGE: I just have one announcement. Yesterday notice was sent out concerning those three non-evidentiary hearings in Philadelphia. Disregard that notice. The corrected notice will be going out the latter part of the week.

Does anybody else have any preliminary matters to take care of?

MR. SAYRE: Just a brief one or two, Your Honor.

I did not serve by mail our brief opposing certification of state of your order opposing the motion for the order determining relevance in the sense you ruled on it and were due to rule on it before anybody could get our copy.

I have passed it out to all parties here today, and I have more copies for anybody who wants it.

The second thing is that I have received the information request that I was discussing on the record with Mr. Hall last week regarding Mr. Hill's testimony, but I would like to remind the company on the record that today is now two weeks from the date that we cross-examined Mr. Rinemann, and during the course of that cross-examination, we made a great number of data requests, and I believe the other parties did, too.

MR. HALL: I believe we responded to some of those, and there are still some others to go. We are working on those.

MR. SAYRE: Thank you. Can we expect the rest of them by the end of the week?

MR. HALL: I believe so, yes.

THE ADMINISTRATIVE LAW JUDGE: I believe this morning we are continuing with the cross-examination of Mr. Williams, and Staff is prepared to proceed at this time.

RAYMOND C. WILLIAMS, called as a witness on the part of the Respondent, being previously duly sworn, was examined and testified as follows:

CROSS-EXAMINATION (CONTINUED)

BY MR. JOHNSON:

Q Mr. Williams, I would like to discuss with you for a few moments the history of the off-peak water heating break which Philadelphia Electric offers to its customers.

And if you would, please, could you tell us when that rate was first offered and the form of the rate at that particular point in time?

A Yes. The rate was first offered in 1932, and it was strictly an off-peak rate at that time. Later -- I believe it was in the '40's ---

Q With regard to the rate as offered in 1932, how was the charge for that service made?

A I don't have a copy of that tariff in front of me.

Q Subject to check, it is our understanding there was a flat kilowatt hour rate, in other words, uniform rate for each kilowatt hour consumption and a separate meter charge.

A I believe that is correct.

Q It is our understanding that the next modification of the off-peak water heating rate was made 1936; is that your understanding?

A Yes.

Q And would it be your understanding that at that time there was a continuation of the flat charge per kilowatt hour consumption but that the meter charge was eliminated and a minimum charge was substituted for the meter charge?

A Yes.

Q Now, are you aware of the next modification to the rate structure of that particular rate?

A We introduced another facet of the water heating rate, that of being available for uncontrolled water heating. I am not sure of the date of its introduction. I believe in the latter '40's.

Q That was about 1963?

A '63?

Q Or was it earlier.

A I will have to check historical over time. I am not sure of the date. I know it was --- I thought it was

before that time. I know it was available certainly during the '60's and was just eliminated by the Commission at its last order, R.I.D. 438.

Q Now, is it also correct in 1963 that the declining block rate was first introduced for this particular rate?

A The 400 kilowatt hour rate point as it presently exists, yes, really is a proxy for the customer charge. The price of 400 kilowatt hours is higher than all kilowatt hours thereafter, and the difference in those two prices is really a proxy for a customer charge.

Q You do not have the separate customer charge for the off-peak water heating rate; do you?

A Not a separately stated charge, no. However, the rate could easily be written in such a manner.

Q And your present filing does not propose a separate customer charge for that rate?

A No, but I --- it does not, no.

Q However, you are proposing for the first time a separate customer charge for Rate GS, PD and HT; is that right?

A That is correct.

Q If in fact you were proposing a separate customer charge for the off-peak water heating service, do you have an opinion as to what that amount should be?

A As shown on page 45 of RCW-1A, the annual customer charge on a cost-related basis should be $57.83, dividing that by 12 yields $4.82 cents per month, would be a cost base customer charge.

Q Mr. Williams, if in fact you were to propose a separate customer charge, would it be your proposal that the full customer cost be recovered, or would you temper that some way and propose something less than the $4.82 per month?

A Well, we are dealing with a water heating rate where indeed the average use is about 400 kilowatt hours a month per customer. The existing minimum is $1.67. So that certainly I would think the customer charge should be in the area of three dollars, three to four dollars, I would think would be a reasonable customer charge.

Q If a customer charge were introduced to this rate schedule, that would serve to replace the minimum charge?

A That is correct.

Q And that would also, assuming that you were to seek the same total revenue requirement from that class, serve to reduce the kilowatt hour charge?

A That is correct.

Q You are presently attempting to recover the customer charge through the kilowatt hour charge; is that right?

A That is right.

1-9

Q In your opinion, Mr. Williams, is there any significant demand cost associated with the off-peak water heating rate or water heating service?

A No, there should not be because by its very nature, it should be off the system peak and -- primarily off the class peak. So that there should -- one would not expect to have very much demand charge, if any.

Q Mr. Williams, if you were to be granted your entire rate increase as requested, what rate of return would that provide for the WH rate?

A That was requested at the last hearing, and we are developing that number right now. I don't have all of the data with me.

Q You have not proposed a separate customer charge for any of the rate schedules under the residential rate; have you?

A We did not propose a customer charge for the residential rates, either Rate R or Rate RH, and our consideration there was that the manner in which this rate increase is spread, namely, with all fuel removed from rates before the increase is spread among the various classifications results, as you can see, from page A-5 of DPS-2 with the residential classes receiving slightly higher increased percentages than some other classes.

1-10

And we felt that this was not perhaps the time to introduce a customer charge which would inevitably result in some further increases to the small residential users, although that is not to say that I -- I still agree with the concept of a customer charge. I think it is important that our residential rate should have a customer charge as a part of its pricing mechanism.

Q Is it your thinking or your concern with regard to the customer charge the impact upon the small user, small residential user?

A The introduction of a customer charge would result in some higher increases to very low level users of residential services percentage-wise. However, they would be quite small on an absolute dollar basis.

Q If Philadelphia Electric were to request or if any party to this proceeding were to advance the need for a separate customer charge for the residential class of customers, would you direct us to the information which we would need in order to make that calculation, in other words, the annual customer cost?

A Certainly that is in RCW-1A, just as we observed on page 45, the customer cost for WH, a parallel development of customer cost for Rate R can be found on page 44 of RCW-1A, and that shows an annual cost per customer

of $150.93, which on a monthly basis would be twelve fifty.

Certainly one would introduce not a customer charge of that level, but I would recommend starting with a modest level of customer charge, such as two to three dollars as a separately stated customer charge.

Q Presently or under your proposed rates, at what usage point is the customer charge fully recovered from the residential class of customers?

A The customer charge is recovered as a part of each kilowatt hour billed, and I believe the demonstration of the need for such a customer charge can probably be best viewed in the relationship between rate of return and annual kilowatt hour use which we have prepared for each of the test years, and that shows that a customer on the present Tariff 25 must reach about 200 kilowatt hours per month before we get to a no-loss situation, in other words, a zero return.

Q The data request that we made orally, I believe you have responded to, that is, provide a curve showing the relationship between annual residential use and rate of return on the original cost measure of value for ---

A Yes.

Q --- the present rate and the proposed rates.

A I have those curves available here.

Q And I believe I was served with a copy which based upon ---

MR. HALL: Mr. Johnson, we have some curves to distribute, unless you have some foresight, I don't think we are talking about the same thing.

MR. JOHNSON: This would be numbered RS-5. Perhaps I got an advance copy.

MR. HALL: Why don't I distribute these now and ---

MR. JOHNSON: Mr. Hall, I understand that the company anticipated the need on our part for the 12 months ending -- is it March 31, 1980, and has prepared a graph for that period of time, also?

MR. HALL: Okay. I have here a graph for December 31, '78, if you wish it.

MR. JOHNSON: December 31, '78.

MR. HALL: Which would be in response to the oral request.

MR. JOHNSON: And I believe the company has also done one for a 12-month period ending March 31, 1980. We would like to have that, also.

THE WITNESS: That is correct.

MR. HALL: Okay. Let me distribute what I have and let's move from there.

MR. JOHNSON: Yes.

Just for purposes of identification, perhaps we can refer to these two graphs as the 1978 graph at RS-5 and the March 31, 1980 graph at RS-5, if that is acceptable.

MR. HALL: That is acceptable, but if you wish to cross-examine him at some length on it, we would be willing to make it an exhibit of Mr. Williams for purposes of the record, whichever you prefer.

MR. JOHNSON: That is fine with me.

MR. HALL: Your Honor, I would like to have identified at this time for purposes of reference in this regard as RCW-4 two graphs which Mr. Johnson has just described, these graphs being a relationship between annual residential revenues and costs by annual kilowatt hour usage levels, the first chart being for 1978, which I will make page one, and the second chart being for 1980, March 31, 1980, which I will make page two.

Mr. Williams, were these charts prepared under your direction and supervision?

THE WITNESS: Yes, they were.

MR. HALL: And is the material contained therein true and correct to the best of your knowledge and belief?

THE WITNESS: Yes, it is.

MR. HALL: Your Honor, I would ask that these charts be marked as RCW-4.

THE ADMINISTRATIVE LAW JUDGE: Without objection, they will be so identified.

(Philadelphia Electric Company's Exhibit RCW-4, being two graphs, being a relationship between annual residential revenues and costs by annual kilowatt hour usage levels, the first chart being for 1978, and the second chart being for March 31, 1980, was produced and marked for identification.)

BY MR. JOHNSON:

Q Mr. Williams, did you undertake a similar graph to RCW-4 in the rate proceeding docketed at R.I.D. 295?

A Yes, I did.

Q And would the methodology in constructing the graph, your Exhibit RCW-4, have been the same or similar to the methodology you used in constructing the graph or graphs at R.I.D. 295?

A Yes, it is.

Q Now, looking at your graphs at your Exhibit RCW-4, are we able to discern from these graphs at what point in usage the entire customer charge is recovered?

A Well, I think the most useful and easily interpreted use of the graph is to view the point where the existing rate, the solid line, crosses the zero return line, and that is just about 200 kilowatt hours per month. So that between zero and 200 kilowatt hours per month the

company is losing money on service.

Q When you say losing money, does that mean a zero return to the company?

A No. It means that we are not meeting expenses. The zero return point is at 200 kilowatt hours per month. From that point forward we start getting a return on our investment.

Q So, you are not even meeting your own out-of-pocket expenses for usage less than 200 kilowatt hours per month?

A That is correct, we are not.

Q Before we go on with this graph, if we could digress for a moment, Mr. Williams, you have bills which are of a consumption level of less than 200 kilowatt hours a month; don't you?

A Yes.

Q You have bills at a level of 100 or less kilowatt hours a month?

A Yes.

Q If you know, Mr. Williams, could you give us some kind of approximation as to the total number of bills which represent a consumption level of 100 or less kilowatt hours in a month's period?

A We have a bill analysis. I can obtain that information for you. I don't have it before me.

Q Subject to check, Mr. Williams, based upon some analysis that the Staff has done, it would appear that on an annual basis, that the bills at or below 100 kilowatt hours represents about 750,000 bills?

A I will accept that subject to check.

Q Do you have an opinion as to what character of usage would occur at a level of 100 kilowatt hours per month or less? What would this represent insofar as a dwelling unit?

A At that level of usage, we are really probably dealing with such things as vacant apartments that are in a state of transition from one tenant to another or perhaps a second home or vacation home that is not being used.

It's very difficult to imagine that it could be a residential usage level at 100 kilowatt hours a month.

A refrigerator by itself would use 100 kilowatt hours a month.

Q Now, Mr. Williams, if we can go back to the graph, you had indicated that a level of 200 kilowatt hours a month or less, that you are receiving no return whatsoever and that a positive return would only be experienced as you exceeded 200 kilowatt hours a month. I believe you were going to go on and explain more about that graph.

A Yes. The next important point I think on the

graph is to look at the ten per cent return level, which is the approximate level of average return for all classes, and go across horizontally the ten per cent return level until you meet the existing tariff, attached 25 line, and you will see that that point is just about 1250 kilowatt hours per month on the existing rate. On the proposed rate it moves back to about 750 kilowatt hours per month. So that not until a customer's use reaches these levels is the customer providing full return equal to that of the system average.

Q Mr. Williams, if a customer charge, separate customer charge were introduced and I guess it would depend upon the level of the customer charge, but regardless of the amount, would you expect this curve to reach a ten per cent, at a lesser usage level?

A Yes. The effect of a customer charge would be to get rid of a lot of this negative area for low-use customers.

The problem is that in that area, the customers receiving kilowatt hours for each five or six cents per kilowatt hour that is paid and there is very little collection of any customer charges until one accumulates quite a number of kilowatt hours, the customer charge would accomplish the purpose of returning payments for the facilities there ready to serve the customer at all times and then start

collecting on a kilowatt hour basis in addition to that fixed return.

Q Now, recognizing the fact that one of the principles of ratemaking is to minimize dramatic change and recognizing the fact that you may to some extent be influenced in your rate design by Commission pronouncements in their orders, would I be correct in that assumption, that the past Commission orders with regard to Philadelphia Electric and perhaps other companies to some degree influenced your proposed rate design?

A Yes.

Q If we put those aside and said to you, Mr. Williams, you are going to be starting anew, you are starting a brand new company, Philadelphia Electric is a brand new electric company, and you can at least initially propose whatever you think is correct and cost justified, what would you propose with regard to the residential rate?

A I would propose a customer charge and an energy charge, a rate made up of those two components.

Q What would the energy charge be? Would it be declining block, would it be inverted or flat or what would it be?

A I would propose an energy charge. I believe we could have a single energy charge that was higher in the

summertime and lower in the wintertime to convey the seasonal pricing signal with the same customer charge for both seasons.

Q Mr. Williams, did you testify in the recent gas case, Philadelphia Electric Gas?

A Yes, I did.

Q In that case, did you testify in favor of a customer charge for your gas company customers?

A Yes, I did. We have proposed in that case a customer charge and a single commodity charge for gas.

Q That would be true of the residential class of gas customers?

A Yes. Yes.

Q Now, you are proposing in this proceeding for the first time a customer charge for PD, HT and GS?

A Yes, we are.

Q If Philadelphia Electric were granted something less than the$123 million requested, hypothetically let's say $50 million, $60 million - I don't know if that is critical - would you, nevertheless, want to maintain the level of customer charges which you are first introducing in this proceeding, or would you cut those back proportionally?

A I would suggest maintaining the level of customer charge that we are proposing because we are moving only about halfway toward a cost level of customer charge

justification, and this was tempered with the resultant customer effects in mind.

And I believe that we should continue to make this move and make any reduction in revenue in the demand and energy charges of the rate.

Q Okay. Now, the broader question, assuming that you are granted, let's say, half of the amount you requested, in what areas would you cut back proportionately and what areas would you propose that you maintain the level of increase as originally proposed based upon a $123 million filing?

A I would propose to fashion the energy charges in such a manner that they follow as closely as possible the cost curve reflecting coincidence factor/load factor relationship at the level of return that was granted for the total company.

Q Does that represent something different from a proportionate cutback? In other words, let's say for purposes of illustration you proposed a five mill increase per KWH for the residential class and you are granted half your increase, that would not necessarily follow that you would propose a two and a half mill increase or half of the proposed increase per kilowatt hour?

A Yes. We are dealing now with HT and PD, I believe.

Q I am talking in general terms now, Mr. Williams. If you want to deal with specific rate classes, please indicate which rate classes you are ---

A I was thinking in terms of HT and that former question.

Q Okay.

A But essentially so, if the customer charge is maintained, then the cutback is proportional in the demand and energy charges, yes.

Q Perhaps rather than dealing with specific rates it would be easier for me and perhaps easier for you if you would look at the total situation and indicate to us for the record now or later, if you feel you need some time, what you would propose doing with regard to customer charges, demand charges, energy charges, if in fact you are granted some percentage of the total request, and how -- in what areas you would cut back on the same proportion and what areas you would depart from that and why.

Do you understand the question?

A Yes.

I would try to maintain the customer charges as proposed and make the cutback proportionately in the demand and energy charges of the rate.

Q With the demand and energy charges if you are granted 50 per cent of your reflected rate increase and it

would represent a 50 per cent cutback in the proposed increase?

A Approximately, yes, with the offset of a customer charge.

Q Yes.

For Rates PG and HT, last week I believe there was some reference in one of your answers to a load factor/coincidence factor curve; is that right?

A Yes.

Q And would I be correct that this is known as a Bary curve or these are known as Bary curves?

A Yes.

Q Is it true that based upon the Bary curve analysis, that for a given KW demand, that cost allocation for that given KW demand increases as load factor increases?

A Yes.

Q Is it also true that revenues for a given KW demand increase as load factor increases, revenue responsibility?

A Yes, revenue responsibility. The revenue, of course, depends upon the individual company's rate design.

Q Yes.

Would it be correct that this Bary analysis is only applicable to on-peak demand?

A Yes.

Q Are you aware of the origin of the Bary curve insofar as time?

A Yes. Its origin goes back to the '30's with the load research committee, Association of Edison Illuminating Company, of which Mr. Bary was chairman, and the development of this curve was a part of that committee's work, primarily as a result of Mr. Bary's suggestion.

Q And this is Theodore Bary that we are talking about that developed these curves?

A No.

Q Constantine Bary.

A Constantine Bary.

Q And he was an employee of Philadelphia Electric; is that right?

A Yes, he was.

Q And originally did he develop his curves for Philadelphia Electric?

A Yes, he did.

Q Is it correct that these studies were originally done for a winter period of time?

A Yes, because at that time, back in the '30's, most all companies were winter peaking companies, and that was the period of concern.

But as the years went by, interest grew in summer peaks, and then they were done for both periods, summer

and winter peaking periods.

Q And the data which was used to develop the curve originally was the Philadelphia Electric data?

A That is right, yes

Q And were subsequent studies done based upon Philadelphia Electric data in the '40's and then again the '50's?

A Yes. And then interest in the curve grew and other companies made contributions to those subsequent studies, also.

Q Would it be correct that the Bary curve used in conjunction with this proceeding is based upon data from eight electric companies?

A Yes.

Q Has there been any significant change in the results of the current study compared to the earlier studies?

A No. They have been remarkably stable as to the general shape of the curve in that it rises quickly at low load factors, tends to level off during the median range and then approaches 100 per cent, of course, 100 per cent load factor.

Q Mr. Williams, as I understand, your cost of service study is based upon the peak day in each of your four summer months; is that right?

A That is correct, June through September.

Q All right. Now, with regard to 1978 - that is the summer period we are talking about - if you know, could you tell us when the peak occurred for PJM, and was it in fact one of the peak days that Philadelphia Electric used in your cost of service study?

A I will be glad to check that. I believe there was a coincident day, but I am not positive without checking.

Q In your opinion, is the summer load of Philadelphia Electric weather sensitive?

A Yes, it is.

Q Does Philadelphia Electric have an initiation of service charge for any of its customers?

A No. No.

Q Mr. Williams, is there a cost involved in the initiation of service? By that I do not mean extension of distribution line. I am talking about paperwork involved in setting up an account.

A Yes.

Q How is that recovered now?

A It's recovered as part of operating expenses, just as many other charges are recovered.

Q Have you made any study as to what these costs entail for the residential customers, let's say?

A We have been requested to make such a study, and

I have requested data from the appropriate people. I expect to have results available shortly.

Q Have you considered an initiation of service charge?

A No, we have not. We feel that it is one of the many parts of doing business. Certainly there are charges associated with setting customer accounts up. It's one of the charges, one of the many charges that is caused by customer requirements.

There are other charges, such as answering customer interrogatories, phone calls, there are charges with servicing customers continually, all customer classes. They are all recovered as part of operating charges.

This admittedly is one of them, but there are many charges incurred by servicing customers. Obviously as soon as a utility accepts customers, one has to accept the responsibility of serving those customers and doing the many things associated with such service.

Q I guess, then, it really boils down to a question as to what degree you want to fine tune your charges to recover costs from those people who incur the cost?

A Yes.

Q Directing your attention to the first page of your Statement 2A, the paragraph which begins in the middle of the page, "Philadelphia Electric Company," near

the bottom of that paragraph --- in fact, the last sentence in that paragraph states, "The demand charges and energy charges take into account the cost of providing additional capacity or energy to electric customers."

Are you talking about incremental or marginal cost pricing in that sentence?

A No. What I am referring to is the manner in which our rates are structured, the coincidence factor/load factor relationship we have been discussing, particularly as a part of our commercial and industrial rates, provides and recognizes the costs at the load factor of the service to the customer and the additional load that would be added depending on where that customer is in the load factor curve on his existing load, any additional load will be recognized by a change in movement along that curve appropriately with the change in coincidence factor with that additional load.

Q The last paragraph which begins in the bottom of page one of your Statement 2A, does this attempt to say that the cost of service study performed by Philadelphia Electric supports the rate R rate structure?

A No. It says that the company believes that its cost of service study is a thorough one based on analysis of loads of each of the individual classes and we believe done in a thorough and reasonable manner to allocate costs

to each of those classes, and the result is /separate costs into the three components, customer, demand and energy that are widely recognized as the appropriate three causal relationships of costs and that we have before us a target or bogey where the rates should be objectively headed. It does not mean that the existing rates are meeting these objectives.

Q Mr. Williams, I would assume that you are fairly thoroughly familiar with the Public Utility Regulatory Policies Act?

A Yes.

Q Is it your understanding that one of the standards to that Act is to develop marginal cost pricing?

A I believe the words are that marginal cost should be considered.

Q In order to consider it, you would have to do some form of marginal cost pricing study; wouldn't you?

Let me rephrase the question. In your opinion, in order to satisfy the mandate or requirement of PURPA, what would you have to do and what would you have to undertake? Do you have to do additional load studies?

A Well, certainly to satisfy the PURPA requirement, one must satisfy Section 133 of PURPA which requires extensive load data submission to the FERC by November of 1980. This load data must be by classes of service and upon

regulations that have just recently been issued on exactly the details of the requirement for load data. And that is extensive, and we believe that as a result of our company's studies, we will be able to meet those requirements.

Q Without any additional cost involved?

A No. We may well incur additional cost to meet fully the continuing requirements of the future years' submissions of PURPA. The first submission will apparently accept some reasonable estimates, but more detailed studies will be expected for future submissions. And it seems likely that there is going to be additional cost involved to meet those detailed submissions in the future.

Q Do you have any idea as to what additional cost would be involved?

A We are trying to evaluate that right now. We have made estimates that run as high as a million dollars, some a half million dollars.

MR. SEGAL: Excuse me. Are you referring, Mr. Williams, to the cost of load studies or all of the PURPA standards?

THE WITNESS: No. I am talking now about Section 133, Load Studies.

MR. SEGAL: Just load studies?

THE WITNESS: Yes.

BY MR. JOHNSON:

Q And if you undertook such studies, how would you attempt to recover the cost?

A We would attempt to recover the cost in future rate proceedings.

I might say that some statements by the members of the FERC staff that I have read would envision a million dollars for a company or a size as being very reasonable, in fact quite small in their view.

Q One of the items in the Public Utility Regulatory Policies Act which, for the record, I guess we can refer to as PURPA, is lifeline rates.

I guess, Mr. Williams, you would agree with me that there are probably almost as many definitions of lifeline as there are people who have focused on that particular problem?

A Yes.

Q Do you have an opinion after reading PURPA as to the PURPA definition of lifeline, and if you do, what in your opinion is the PURPA definition of lifeline as it is used now?

A Well, of course, PURPA requires that lifeline is a separate consideration apart from their other rate-making standards and is something that can't be grandfathered.

It designates a consideration of lifeline

principle. That has some very broad definitions, as you say, and I think the generally accepted one and the one that I understand PURPA is talking about is the providing of some minimum level of residential service at a price below cost to provide that service.

Q In looking at your Rate R, in your opinion, does Rate R, both existing and as proposed by Philadelphia Electric, provide lifeline consistent with the definition in PURPA?

A As we viewed from the Exhibit RCW-4, the existing residential rate is providing service up to the level of approximately 200 kilowatt hours per month at a price below the cost to provide that service, no return to the company and, in fact, a loss.

Q Then on the basis of your last response, are you saying that it is your understanding that the PURPA definition of cost of service means anything below zero return?

A Yes.

Q And not something below the overall return? In other words ---

A I'm sorry. May I retract that?

What I understand PURPA to be saying is that cost of -- a provision of service below a full return, so that anything below the full return of the class would be

a lifeline -- anything below the full return of the company average for that class ---

Q Under that definition ---

A --- is indeed a lifeline like concept.

Q Under that definition, then, Mr. Williams, the usage even greater than 200 kilowatt hours under the R rate would be a lifeline rate for the residential class; wouldn't it?

A Yes, that is true.

Q Your 200 break point was assuming no return whatsoever?

A That is exactly right.

Q How high a usage --- what would be the usage level, up to what point, which would be consistent with lifeline as you understand that definition under the PURPA act?

A Approximately 1250 kilowatt hours per month is the point where we reach the system average return of ten per cent under the existing rates.

Q Do you have any idea as to what percentage the total bills would fall below that amount?

A I will check that. Just a moment. About 96 per cent.

MR. SEGAL: That would be 96 per cent of residential bills?

THE WITNESS: That is correct.

BY MR. JOHNSON:

Q Mr. Williams, are you familiar with Commission order at R.I.D. 129?

A Yes.

Q And in that order, did the Commission direct you to shift some of the revenue requirement from the residential class to other classes of customers?

A That was the rate order where the existing rate structure of the residential rate was first created, and as a result of that order, there was a shift of revenue from residential to other classes in order to achieve the total revenue requirements, yes.

Q And this shift was contrary to the proposal of Philadelphia Electric?

A Yes.

Q And did it also represent a shift in revenue requirement from low use residential customers to high use residential customers?

A As a result of the rate restructuring, that was the net effect, yes.

Q Can you put this into a dollar amount, Mr. Williams?

A I could provide some data to you on that.

Q At R.I.D. 295, you are familiar with the

Commission's order in that proceeding?

A Yes.

Q And was there any language in the Commission's order which directs Philadelphia Electric to shift the revenue burden of revenue requirement either from low usage residential customers to high use residential customers or completely out of residential class, contrary to the proposals of Philadelphia Electric?

A There were --- yes, there were directives as to the distribution of revenues above and below 500 kilowatt hour level in the 295 order. There were interim increases, and as I recollect, two of them were specifically directed to be not made effective for the first 500 kilowatt hours. There were two interims, I believe, and the final, and two of the three were not applicable to the first 500 kilowatt hours.

Q Mr. Williams, if you know, was there any basis for the 500 kilowatt hour usage break point with regard to treatment of the rate increase of residential customers?

A It was a judgment by the Commission in its order.

Q Directing your attention to page 13 of your Statement 2A, going through a mathematical exercise, Mr. Williams, if you were using the total return as the denominator and the return for each rate schedule as a

numerator, what we would get, then, is a percentage for that rate class representing that percentage to the total return? In other words ---

A Yes.

Q --- for 1978 calendar, HT would return 102.6 per cent of the system average return?

A Yes. I understand.

Q Okay. And we could do that for each rate classification and do it again for the 12 months ended 3/31/1980?

A Yes.

Q Having done that, subject to check, it would appear to us that for the period 3/31/1980, that Rate HT represents a greater percentage compared to the system average than it did in the prior period, calendar '78? For calendar 1978, represents 102.6 per cent of the total system average; for 3/31/80, 105.2 per cent; for rate PD, 109 per cent of calendar '78 system average, 118.8 per cent for the 12 months ended 3/31/80. Rate GS, 139.1 per cent for calendar '78 and 146.7 per cent for the future test year. For Rate HM, 113.5 per cent for '78 and 113.8 per cent for the future test year period.

Now we get to the last one, and this represents an exception.

For calendar '78, Rate R, 82.8 per cent; for

12 months ending 3/31/1980, 76.8 per cent.

Do you have any comment on the fact that all of these represent an increase when compared to the system average when you move forward in time but for Rate R which represents a decrease?

MR. HERSHEY: I object, Your Honor. I don't know that that is really relevant. It seems we are dragging on here.

The figures speak for themselves that were produced by the Staff, and I don't know that Mr. Williams has to comment on them.

THE ADMINISTRATIVE LAW JUDGE: Well, we are moving along rapidly. I will overrule the objection.

BY MR. JOHNSON:

Q I am correct, Mr. Williams, one of the criteria, one of the goals of Philadelphia Electric was to come closer to the system average return for all rate classes, that was a goal in your rate structure, rate design; isn't that true?

A Yes. But I think we should view the data in a little bit different manner. If you look at page four of RCW-1A, one sees on that exhibit on line 31 the rate of return before increase and on line 33 the rate of return after increase for the system and the total.

If you go through the same procedure you have

just described relating the class return to that of the system average, I believe you will find that when you move from line 31, that each class on line 33 moves toward the system average rate of return after the increase.

In other words, I am comparing on page four the situation before increase to the situation after increase based on the test year data. And what I am saying is that the relationship of each class to the average after increase moves closer to the system average than it was before the increase.

And I believe that is a more appropriate comparison than the one you made for the data on page 13, which is both conditions are after increase.

MR. JOHNSON: I believe that is all we have. Thank you, Mr. Williams.

THE ADMINISTRATIVE LAW JUDGE: This might be an appropriate time for a recess. We will come back at twenty until 12.

(Short recess.)

THE ADMINISTRATIVE LAW JUDGE: Are we ready to resume?

MS. BUSH: Yes.

THE ADMINISTRATIVE LAW JUDGE: Ms. Bush?

BY MS. BUSH:

Q As I understand it, Mr. Williams, from your proposed tariff, you have two different time periods for the off-peak rider. GS is proposed from 10:00 p.m. to 8:00 a.m. and PD and HT are from 7:00 p.m. to 7:00 a.m., is that correct?

A That's true.

Q What is your rationale for the differing off-peak periods for the different classes?

A The night service provisions for PD and HT have been in existence for some period of years. There are customers availing themselves of those provisions now. The provision for GS is being newly proposed in this proceeding, and we believe that the more appropriate hours are indeed those that are proposed for GS, from 8:00 a.m. to 10:00 p.m. is the on-peak period, based on our most recent view of the cost of operating the system.

To make such a shift for existing PD and HT customers would undoubtedly create some hardships for existing night service rider customers. That's the reason we have not proposed that shift at this time, without further

extensive investigation on an individual customer effect. But to initiate a new night service rider provision, I think it is entirely proper that it be instituted at the proper time period.

Q When you say hardships, what kinds of things did you have in mind?

A. Well, there would be, they have undoubtedly made adjustments to their operations, use of service, perhaps large capital investments in order to utilize the existing hours and without a complete understanding of all these problems, I think it would be wrong to arbitrarily shift the hours.

Q Do you have any plans to do any kind of study or further investigation as to how difficult it might be to change the rider for the PD and HT class?

A. This would certainly be an objective to move the PD and HT class to these same hours we are proposing for GS, after such a study is done, yes.

Q What are the periods for your WH off-peak rate that the timer is set for the water heating equipment to be off?

A. The timer is such that it provides six and a half hours off during each 24 hour period. That six and a half hour period can be adjusted and is adjusted on a seasonal basis by the company. So that it is off at 4:00 p.m. in the

winter months and back on at 10:30 p.m.

In the summer months, it is off at 1:00 p.m. and back on at 7:30 p.m. The summerpeak being in the afternoon period, the winter peak being normally the evening as lighting load is more important in the winter months.

Q Is that on the full eight month period?

A That's correct.

Q In response to Consumer Advocate Interrogatory RS-1, that would be IR2-RS-1, the company provided KWH sales and total revenues for residential class as a whole as well as the other classes. Do you have this information broken down on a customer class basis within the residential class?

A By class, you mean R, RH?

Q And WH.

A And WH.

Q Yes.

A Yes, we have that information.

Q Could we have that same information that we requested for the R, RH and WH broken down on that basis, please?

A On an annual basis, for this period as shown - -

Q Yes.

A Are you interested in all - - There are quite a number of years here.

Q Do you have it for the test year, for the historic test year which would not be on an annual basis?

A Yes.

Q Could we have it for that period, then?

A Yes. For the historic twelve months ended March, '79.

Q Yes.

A Yes. It has been - -

Q That's right. It is in DPS-1.

A DPS-1 is on an annual basis by classes. It is already there.

Q Yes. Well, what difficulty would it be for you to get it on an annual basis for I know we asked for it for '73 to present, say from '76 through '78 on I guess you have to have it on a calendar basis.

A A calendar would be best, yes. '76 through '78?

Q Yes. In company filing volume 4, C-20, page 9, you begin with the water heating and you list first the unrestricted and then the off-peak monthly usages of the hundred largest customers. Do the WH figures here include any regular residential usage or is this solely WH usage?

A Strictly water heating usage. It is separately metered. No residential.

Q Now, in my cross examination of you last week,

we had some discussion about the energy cost as measured by the PJM System lambda or the billing rate that the company pays. If the company is paying, is purchasing on the PJM and their billing rate for that point in time is say, 3.5 cents per KWH, and that's taken into account, that's after the split savings accounting has been done, so that that's the cost that Philadelphia Electric is paying to the PJM.

Now, suppose that you make a purchase to pay for energy that you are, the company is buying at that point, at the cost of 3.5 cents per KWH and further suppose that the rate that you are charging your retail customer is 2.75 cents per KWH, if that one customer to whom you are charging 2.75 cents per KWH were to increase usage by one KWH, would the cost to Philadelphia Electric Company be the 3.5 cents per KWH and the revenue collections 2.75 cents per KWH, thus resulting in a revenue deficiency of .75 cents per KWH?

A. Well, you are looking at a very narrow window in time, a one hour period, and asking me to compare the cost of energy purchased with the price that a customer is paying at that moment.

Q. Yes. It is a hypothetical situation.

A. The rates, of course, are fixed for long periods of time, which must average out to the appropriate cost of power. Assuming that additional purchases could be

made at that same level, from the PJM, the difference you have cited is so. I don't know whether the additional kilowatt hour would be available at that price from PJM. Perhaps it would be higher.

Q Well, if it were higher, that would then increase the differential between the charge that you have to the retail customer and what the company is paying at that particular point. Is that correct?

A If the next increment was more expensive, the difference between the 2.75 and that next increment would be bigger. But that is a very narrow window and moment in time, whereas the rates we are fixing are for an eight month period in the winter and a four month period in the summer, which must average the collection of energy costs, demand costs and customer costs.

Q Well, in averaging the energy cost, you attempt to recover all of your revenues on an annual basis, but does that not fail to take into account that the situations when there is a variation between what additional consumption, usage a particular customer would have and what the company would have to pay to the PJM to purchase that additional KWH of energy?

A We attempt to recognize these differences in cost to provide service with several mechanisms in the rate. One would be seasonal prices.

Q There are questions this morning about the low usage rate established by the Commission at RID 295. To your knowledge, has there been an appeal, a challenge to that rate as being discriminatory?

MR. HALL: Miss Bush, I take it you mean a challenge in the Commonwealth Court?

MS. BUSH: Yes.

MR. HALL: An appeal from the order.

THE WITNESS: I would have to review that. I don't recollect the details.

BY MS. BUSH:

Q You don't recollect that there was an appeal?

A I'm not sure without checking.

MR.HALL: I believe, as the company's attorney, I can respond to the question. There was an appeal and it was on the rate structure issue with regard to low residential rate.

BY MS. BUSH:

Q To your knowledge, Mr. Williams, did the Commission decision in that case offer a cost base justification for the rate under 500 KWH usage rate?

A No. It did not.

Q Did a subsequent clarification of the order offer a cost base justification for the rate?

A Not to my knowledge.

Q Mr. Williams, on page 6 of your testimony, you state that any advertising expenses currently incurred are referred to customer information on safety conservation or customers billing practices, and you do not believe that the company currently engages in any advertising that could be classified as political, promotional or institutional.

A That's right.

Q Is the company claiming in the current rate case contributions it makes to Edison Electric Institute?

A Yes.

Q And does the company include in its current claim any contributions made to Atomic Industrial Forum?

A I will have to check that. I don't know.

Q Are you aware that the company recently had sponsored various activities, the focus of which activities and discussions were the safety of nuclear power?

A I'm not familiar with what activities you are referring to.

Q Well, I have with me an article from the Philadelphia Inquirer dated 10/19/1979 which reports that the company had a or sponsored an energy coffee, quote unquote for about 125 people at its headquarters at 23rd and Market Streets. Were you aware of that event?

MR. HALL: Could I ask that Mr. Williams be given the opportunity to look at that clipping?

MS. BUSH: Certainly.

(The document was handed to the witness)

THE WITNESS: Yes. I'm aware of this.

BY MS. BUSH:

Q Are you aware that the material used in that conference or that energy coffee were materials supplied by the Edison Electric Institute and the AIF?

A And the AIF?

Q Atomic Industrial Forum.

A I am not aware of all the literature that was distributed. I know that the general purpose of the meeting was a discussion of energy sources and the problem of energy today. It was a free interchange among people of varying use.

Q Do you know who were the panelists at the discussion at company headquarters that day and what their employment positions currently are?

A I think - -

MR. HALL: Objection, Your Honor. I think this is fairly irrelevant. I don't see any relevance to anything Mr. Williams has testified to or anything that deals with this particular rate case.

MS. BUSH: Well, Your Honor, Mr. Williams has made a statement in statement A, page 6 that the company currently does not engage in any advertising that could be

classified as political, and I think that I have a right to argue whatever I think is appropriately political advertising and I have a right to explore exactly what these expenses are.

MR. HALL: Well, is it your position that because the newspaper wrote it up, it is advertising?

MS. BUSH: No. It is my position that because funds were expended on this that are claimed in the rate making process, those funds should not be supplied by rate payers because they are funds that support a particular point of view that the company has on a highly controversial political issue, that is the appropriateness and safety of nuclear power.

MR. HALL: I'm satisfied.

BY MS. BUSH:

Q Do you recall the question or would you like me to repeat it?

A You asked, if I recall, who the panelists were. One was Roberta Kankus, an employee of Philadelphia Electric Company, Janice Carlin, an engineer with Westinghouse Electric and Cheryl Sakenas, a biologist of Radiation Management Corporation.

Q Is Roberta Kankus a nuclear engineer with Philadelphia Electric Company?

A Yes, she is.

Q And is Janice Carlin a person who travels around the country making speeches in support of nuclear energy? To your knowledge?

A The newspaper article addresses her with that title. I'm not familiar with her background, personally.

Q Are the expenses associated with information quote unquote centers at the Peach Bottom plant and the Salem plant included in expenses claimed in this rate proceeding?

MR. HALL: Could I have that question reread, please?

(The question was read by the reporter)

THE WITNESS: The information center at Peach Bottom is operated as a part of Peach Bottom station and the expenses are,a part of the expenses are included in operating expenses, yes. And the nature, of course, of that center is to convey information to the public. It is open to all public and is there for informational purposes. There is no purpose other than to convey information to the public for their understanding.

BY MS. BUSH:

Q Is information conveyed information related to the production of nuclear energy?

A Certainly. It is a nuclear plant.

Q Does the company have available there for the

public and included in its expenses costs associated with developing any information that supports a view different from what the company has with regard to the cost and safety or other matters relating to the production of nuclear energy?

A. The company has available there information on the operating technical aspects of the plant, what makes it work, facts and figures about the plant, and it is an attempt to provide free and open information about a nuclear production facility. Obviously, the public can't tour a nuclear facility, so this information center provides the public with operating data about a nuclear plant and it is provided as a means of energy information and public information.

We provide it for an informational basis only. That's the purpose of it. I think we would be sorely remiss as a public utility if we did not provide full information so that the public can, indeed, make an appropriate choice with full knowledge.

Q. Well, I don't have any question as to whether the utility should be providing the information, but who should be paying for it. The information that is provided at the information center, would you characterize that information, any of that information as consisting of information that could be viewed as critical of the question of production of nuclear energy?

A. The information is factual from an engineering

standpoint and an operating standpoint. Certainly, there is no promotional aspect for the use of electricity or encouraging the use of electricity or anything. It is strictly a technical presentation on a nuclear plant, how it works. And many, many people have stopped by for information on this subject, and I think it is a valuable service that's being provided to the public.

Q Well, in your opinion, could there be factual information that would be different from what the company is offering at the informational center, with regard to various aspects of nuclear energy? Is it possible for such information to exist?

A I suppose so. What the company provides is factual information. We don't attempt to give political viewpoints. We attempt to give factual information on operating statistics and manners of operation data. There is no political viewpoint expressed by the company at the center.

Q Well, do you view nuclear energy and various subquestions involved in the general area of nuclear energy to be an area in which people can disagree and in which they can present various facts that might be different from the company's the fact that the company would choose to produce?

MR. HALL: Objection, Your Honor. I think this

is becoming somewhat extended for whatever limited relevance it might have. Ms. Bush has asked the direct question and now we are just reasking it in three or four different forms.

The direct question being is there promotional advertising and the direct answer being no.

MS. BUSH: That's a conclusory question and conclusory answer. In cross examination, as I understand it, counsel have the right to pursue the various assumptions, the various points of view of the witness and from what I can hear Mr. Williams saying, we haven't yet established that there might be a controversy around nuclear energy and that the company might be presenting one point of the controversy and not another. And I think I have a right to establish that.

THE ADMINISTRATIVE LAW JUDGE: I believe your question to Mr. Williams, if I may paraphrase it, is do you know that there is a substantial difference of opinion concerning the use of nuclear power in this country?

THE WITNESS: There are different opinions, yes.

THE ADMINISTRATIVE LAW JUDGE: Anything further?

MS. BUSH: Yes. Just a minute, please.

(Pause)

THE ADMINISTRATIVE LAW JUDGE: If I may make

a request at this time, Mr. Hall, to the extent possible, could we get a breakdown of the expenses incurred by the company in operating this information center at Peach Bottom and also the expenses incurred by the company in operating the information coffee that was the subject of the newspaper article?

MR. HALL: Okay.

MR. BOCK: How about the center, itself?

MS. BUSH: Is it open yet? Or is it claimed in this case? The Salem 1?

THE WITNESS: I don't know, without checking.

MR. HALL: We would have to check.

MS. BUSH: Okay. It is, I think, a more difficult question that I have, the information for you to provide is, as I understand from the article, the material, the actual physical documents that were at the energy meeting were provided by Edison Electric Institute and AIF, and I would be interested to know at what cost to them and what contribution the company has made on an annual basis to both of those organizations.

MR. HALL: Well, we can provide the actual documents to the extent that they are still available and I assume they would be. We can also provide the company's cost in terms of providing money to Edison Electric and AIF. We can also provide a statement of our understanding as

to what those organizations spend their money for.

In terms of the specific cost of the particular leaflet that we will be providing, I don't think we have that information.

MS. BUSH: All right. That will be fine.

Your Honor, I wanted to let the parties know and Your Honor know that there is another investigation involving the company currently being undertaken under the docket of Keystone Alliance and the Philadelphia Electric Company, which arose out of the last rate case at which time I asked for some information to be provided with regard to expenditures for surveillance or security measures taken by the company in protection of its nuclear facilities or I guess its Market Street Office when there are anti-nuclear demonstrations that Judge Matuschak directed the Office of Consumer Advocate and the particular party who is interested in that matter to file a separate complaint with the Commission and that has been done.

As I understand it, this specific area of nuclear related surveillance and security measures are being investigated there and there either has been filed or will be filed an amended complaint to broaden the scope of that into nuclear related advertising.

We would like to see what information the company is able to provide in this case and how detailed that

might be and how difficult some of the more specific expenditures are and difficult to break out, to see what would be appropriate to address in this case and what would be appropriate to leave for the Keystone Alliance docket.

THE ADMINISTRATIVE LAW JUDGE: My only thought on the subject right now is that we are operating under a time constraint and I know that these complaint proceedings sometimes have a tendency to go on and on and on. I don't know exactly how much we are going to be able to get out of that.

MR. HALL: On the company's behalf, Your Honor, obviously we have no objection to providing data that's relevant to the proceedings and we will do so as we have done throughout. I would disagree with Ms. Bush that there is any nuclear surveillance and I would like the record to reflect that. The company has stated, I think repeatedly in various public forums that all that is involved is the taking of pictures for security purposes around company facilities.

Now, obviously, whether that is so or not so, whether the company view is right or the company view is wrong would be in that separate proceeding and that is where it should stay.

THE ADMINISTRATIVE LAW JUDGE: I believe that's going to be Judge Kranzel's problem, not mine.

MR. JOHNSON: There is one aspect of that proceeding that applies to this proceeding and that is that assuming that these expenditures are not considered to be proper expenditures for rate making purposes, it is my understanding that certain of these activities took place in the historic and/or the future test year in this proceeding.

So if, in fact, the company's basis for their claim includes some measure of these expenditures, then it does become germane to this proceeding if, in fact, these are not legitimate and proper expenditures for rate making purposes.

THE ADMINISTRATIVE LAW JUDGE: I agree, Counsel, but my point is I don't believe we will have a decision on whether they were legitimate or germane expenditures by the time, at least my report is finished.

MR. BOCK: For purposes of completeness, I think we should note there's another investigation involving this company involving coal overcharges in the years 1975 and 1976 that is presently going on and that is assigned to Administrative Law Judge Crumlish.

I do not see any particular relevance of what will come out of that proceeding.

MR. HALL: I don't see any relevance of this at all.

THE ADMINISTRATIVE LAW JUDGE: The progress of

that proceeding is extremely slow.

MR. BOCK: I will pass that on to Judge Crumlish.

THE ADMINISTRATIVE LAW JUDGE: We have had many discussions on that subject.

MS. BUSH: I have just a few more questions, Mr. Williams.

BY MS. BUSH:

Q Is Philadelphia Electric Company a net purchaser on the interchange?

A Yes.

Q Now, you have testified in your pre-filed testimony and we have had extensive discussions on the record with regard to your position that rates of return by class should be equalized. Do you have available to you or have you done any studies that you use to support that view?

A I have available to me the writings of several classical people on this subject. Professor Bonbright being one and - -

MR. HALL: Mr. Williams, would you keep your voice up?

THE WITNESS: A company gentleman, Mr. Constantine Barry, mentioned earlier in this proceeding and both of these experts generally recommend an equal rate of

return from all classes of service as being appropriate.

Q When you say generally recommended, do they have a specific exception that you are referring to?

A. Well, the rate making considerations that we have discussed before, namely historic position and the moderation of move from one condition to another condition must always be considered in bringing about any equalization in rates of return and that has certainly been a consideration in our rate making.

Q Would you provide me with a reference to whatever publication that you are referring to with regard to Professor Bonbright?

A. Certainly.

MS. BUSH: That's all the questions I have.

THE ADMINISTRATIVE LAW JUDGE: Let's recess at this time until 1:30.

MR. HALL: Before we recess, Your Honor, excuse me. There's two small things I would like to do. One, Mr. Carroll has an amendment to his testimony which I would like to make and I would like to put him on and do that before, so the parties can consider it at lunch.

Secondly, we promised to provide with regard to Mr. Williams RCW-3. I have that here today to identify and distribute to the parties. I would like to identify it for the record. Let me distribute, first.

(Documents were handed to all parties)

BY MR. HALL:

Q Mr. Williams, do you have before you a document entitled Exhibit RCW-3 of the Philadelphia Electric Company in this proceeding?

A Yes, I do.

Q And is that document in three principal parts, the first being a copy of a letter from Secretary Thierfelder to Walter R. Hall, the company's attorney at RID 438? Is that the first document?

A Yes.

Q And I take it the second document is a copy of a letter from Walter Hall to Secretary Thierfelder enclosing the company's response to the earlier Thierfelder letter?

A Yes. That is correct.

Q And the third document entitled Exhibit 1 is a response of the company to a request for information made by Secretary Thierfelder on behalf of the company, is that not correct?

A Yes.

Q Mr. Williams, are each of these documents true and correct copies of the various documents which I have identified?

A Yes.

Q And was this exhibit prepared under your direction and supervision?

A. Yes, it was.

Q And does this exhibit, in fact, contain the significant documents which were involved in the request for the Commission to Philadelphia Electric Company for the company to provide certain additional information for use by the Commission in further analysis of rates HT and PD at RID 438 docket?

A. Yes, it does.

MR. HALL: Your Honor, I would request that this document be identified for purposes of this record as Exhibit RCW-3.

THE ADMINISTRATIVE LAW JUDGE: Without objection, it will be so identified.

(Philadelphia Electric Exhibit RCW-3, a three part document, first page of which is a letter dated July 31, 1979 to Mr. Walter R. Hall from William P. Thierfelder, Secretary, was produced and marked for identification.)

MR. HALL: Your Honor, I have Mr. Carroll here for identification of a document.

THE ADMINISTRATIVE LAW JUDGE: Mr. Williams, you are temporarily excused.

MR. HALL: Off the record.

(Discussion off the record)

JOHN J. CARROLL, called as a witness, having been duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. HALL:

Q Mr. Carroll, do you have before you a document entitled Statement No. 5, Direct Testimony of John J. Carroll?

A Yes, I do.

Q And is this document or does this document contain eleven pages with two tables attached?

A Yes, it does.

Q And is this document, in fact, your prepared testimony in this proceeding?

A Yes. /With the revision to page 8 which you just passed out. This is my testimony from the proceedings.

Q Was this document prepared under your direction and supervision, Mr. Carroll?

A Yes, it was.

Q And with the exception of the material on the revised page 8 which we will speak of in a minute, is the material contained in this column true and correct and if I were to ask you the questions therein contained, would your answers be as they appear in that document today?

A Yes, they would.

Q Referring you to the revised page 8, Mr. Carroll, would you state the purpose of this revision?

A Yes. Reviewing the determination of the Salem No. 2 expenses, I came to realize that the development of the expenses in March of 1980 was slightly different than the development of the expenses from October through February, and the original page 8 was prepared as if all months were exactly the same and I thought it was appropriate, then, to put into my testimony the fact that there was a slightly different procedure in the month of March.

Q And am I correct, Mr. Carroll, that what you are explaining on page 8 is an adjustment made in Exhibit DPS-1 and 2, to the company's claimed test year expenses to reflect or to eliminate from these expenses, and I believe this is only adjustment to DPS-2, but it is an adjustment to eliminate from those expenses operating costs of Salem No. 2?

A That is correct.

MR. HALL: Your Honor, I believe the revision is self explanatory as to what it contains. I would ask that Mr. Carroll's statement be identified as Statement No. 5 and the parties merely interleaf in the revised page 8 in that statement.

THE ADMINISTRATIVE LAW JUDGE: Without objection, it will be so identified.

(Philadelphia Electric Company Statement No. 5, Direct Testimony of John J. Carroll, was produced and marked for identification.)

MR. HALL: That's all.

THE ADMINISTRATIVE LAW JUDGE: If there's nothing further, we will recess for lunch until 1:30.

(Whereupon at 12:28 p.m. the hearing recessed to reconvene at 1:30 p.m. the same day.)

(Transcript continues on next page)

THE ADMINISTRATIVE LAW JUDGE: The hearing will come to order.

We will resume with the cross-examination of Mr. Williams.

Mr. Segal?

MS. BUSH: Before Mr. Segal starts, I would like to add one, specify one additional bit of information that I would like with regard to the advertising question, and that is whether Janice Carlin(sic) is being paid by Edison Electric Institute to make speeches or engage in other activities around the company that disseminate any point of view on nuclear energy.

MR. HALL: We can respond to the extent if the information is available to us of whether or not there is such a paid individual on Edison Electric Institute's payroll, and if we can find out it is that individual, we can respond to that. That information we will seek to provide.

MS. BUSH: Thank you.

BY MR. SEGAL:

Q Good afternoon, Mr. Williams.

A Yes, sir.

Q I believe this morning, Mr. Williams, you had testified in response to some questioning by the Commission Trial Staff that Philadelphia Electric Company bills at or

below -- for service at or below 100 kilowatt hours per month, total approximately 750,000 bills?

A Yes.

Q Can you tell us ---

A Per year.

Q Per year.

Can you tell us approximately how many bills per year reflect service for at a level of at or below 200 kilowatt hours per month.

A 2,360,000 approximately.

Q Can you tell us approximately what percentage of residential accounts are billed at or below 200 kilowatt hours per month?

A The answers I am giving are based on a bill analysis, and that is the only way to respond to your question, is on a bill analysis basis, approximately 17 per cent of the bills are rendered for service 200 kilowatt hours per month or less.

Q 17 per cent of all residential?

A Right.

Q Does that include or exclude RH and WH?

A Strictly Rate R.

Q I believe you refer in your testimony that a level of usage of 100 kilowatt hours per month or below would indicate a vacant home or one that was a second home

that was only sporadically used? Is that a correct paraphrasing of your testimony?

A That was my estimate of what most of these uses would be at that level of monthly use, yes, since it was so low to be most unusual for a residential service use at that level, active residential use with any number of people living there.

Q Would you express the same opinion for a usage level of 200 kilowatt hours per month or below?

A No. I think certainly as you progress forward, you do encompass the more likelihood of an active residential service with people using it full time. It grows slowly. It is weighted strongly by the size of the family involved.

A person living alone tends to have a very low monthly use of electricity. A family of six or seven tend to have a much higher monthly use of electricity.

So that as you move up the scale of kilowatt hours per month, the likelihood of it being a full time use of one person, two and three increases.

Q Now, your testimony that a level of usage of approximately 100 kilowatt hours per month or less would indicate to you, in your opinion, that it might be -- would probably be a vacant home or second home or something of that nature.

Is that your personal opinion, or is that

opinion based on any studies that PE has done?

A No. It is an opinion based on my knowledge of appliance monthly use. I believe I cited the use of a refrigerator being approximately 100 kilowatt hours per month and that in many cases, use at these very low levels is due to apartments in transition from one tenant to another or second homes or vacation homes.

Q Wouldn't you agree on your own experience in this area that there could be apartments of one or two persons residing in that apartment who would not be using more electricity other than a refrigerator and lights and maybe a television and a couple of radios?

A Well, as I say, the use of electricity is very closely related to the number of people in the household and a person living alone, depending on their living habits, could conceivably have monthly usage in the area of 200 kilowatt hours per month or 150, perhaps, if they are extremely frugile in their use of electricity.

Q Is there anything that has already been submitted in this case which would indicate - I believe it is based on an Edison Electric study - the average kilowatt hour usage for various home appliances?

A On page 11 of my Statement 2A I list the monthly use of various appliances. It totals 250, which I state as a minimum monthly energy need.

Q Would it be fair to say, Mr. Williams, that the opinion that you have expressed that usage of, or, a bill for usage of 100 kilowatt hours or less per month indicating a vacant apartment or second home or something of that nature, presupposes the average family of four people, and you weren't necessarily thinking about individuals residing alone?

A No. I don't think that is fair because the refrigerator alone you will notice on this chart shows 90 kilowatt hours per month. So that if the refrigerator were on operating with no one living there, one would expect to see 90 kilowatt hours.

And certainly when you add the person living in the apartment, one person, it's difficult to imagine the use falling below 150, 200 kilowatt hours per month.

Q The refrigerator that you are referring to on your chart on page 11, what size refrigerator is that? Do you know this?

A This is an average size refrigerator from EEI statistics.

Q Is that frost-free or manual defrost?

A I believe it is a manual defrost.

Q Are you familiar with the existence of apartment-size refrigerators that would be smaller than the average refrigerator?

A Yes.

Q Do you have figures available which indicate the approximate usage for a typical apartment-size refrigerator?

A I don't have specific numbers available, but they would vary approximately according to the size of the space cooled.

Q It would probably be less than 90 kilowatt hours for the average refrigerator?

A Yes, sir.

Q Now, I believe you have testified that the summer load of Philadelphia Electric Company is weather sensitive. Am I correct that that was your testimony?

A Yes.

Q That testimony that you gave refers to the overall summer load of the company and does not differentiate between classes; is that correct?

A I was discussing the overall company load, as I recall in discussing the company load patterns, yes. But we do have customer test data of various levels of use, and they all show a summer peaking characteristic.

Q Mr. Williams, I believe you testified in response to questions this morning concerning comparison of rates of return by class, comparing those to the system average rates of return?

A Yes.

Q Am I correct that the testimony that you have offered in your pre-filed statements and the testimony you have given this morning concerning that issue refers to rate of return calculated on embedded or average cost and not marginal cost?

A The returns that are calculated for ratemaking purposes and to which I am referring are an embedded average cost, yes.

Q And not marginal cost?

A That is correct.

MR. SEGAL: Your Honor, at this point I have no further questions.

I would like to note for the record that our rate structure interrogatories have not yet been answered, and I am told by Mr. Hall that the answers will be available to us tomorrow, I believe.

MR. HALL: Approximately I think two-thirds of the rate structure interrogatories will be available tomorrow. There are a few that will go beyond that.

I would note that the interrogatories that were due today, with regard to the time frames under which we have been working, we will make Mr. Williams available to you to respond to any questions you have regarding these. He is scheduled to be available Thursday.

MR. SEGAL: Your Honor, at this point Mr. Dasent is prepared to at least begin his cross-examination of Mr. Williams.

THE ADMINISTRATIVE LAW JUDGE: Proceed, Mr. Dasent.

BY MR. DASENT:

Q Mr. Williams, just to follow up on page 11 of your Statement 2A, where there is a profile of appliances that go into the low user category, in your judgment, at least, could you tell us the source of the kilowatt hours usage figures?

A Generally the Edison Electric Institute average use per appliance.

Q If I looked at their profile, I could check these numbers against that, and I guess the PRMD-7 filing as well; is that correct?

A Yes. PRMD-7 I believe was the same profile, as I recollect.

Q Could you tell me under miscellaneous small appliances what appliances were included in that category?

A That would vary with the individual customer. It's anything that is not listed above, I guess is the simplest way, depending on the customer's own preference for use of appliances.

Q I see. But inasmuch as you came up with

a discreet number for those miscellaneous appliances, I thought you might have had something in your own mind that would use up that particular amount in a given month.

A No. I viewed several other small appliances, and the selection of the individual appliances would obviously be a customer choice. So, there is a margin of individual differences that would be applicable there.

Q So, I would take it, then, that an electric mixer and perhaps an electric oven and any host of other things could go into that 13 kilowatt hour usage?

A I wouldn't suggest that an oven would, no.

Q I mean portable oven.

A Your example of a mixer or a blender or a hair dryer or something like that.

Q I remember PRMD-7 your discussion of certain types of short-cut appliances to cook, let's see, individual hamburgers or some of the other miscellaneous appliances you find in a kitchen.

Did you have those in mind as well?

A They could fit into that category.

Q Now, as far as lighting is concerned, is that for a five-room house or a larger house, or do you have any idea?

A No. It would be a small home.

Q Could you specify the number of rooms?

A A maximum of five.

Q And for the furnace motor load, does that assume a certain size furnace, or is that a standard figure for a small house of five rooms?

A That is right. It is a furnace appropriate for that size home.

Q Now, Mr. Williams, I would like to get into a general discussion about rate structure.

I take it you will agree that loads vary by year, by season and through time generally; isn't that correct?

A Yes. There are variances.

Q And costs associated with those loads also vary through time as well; isn't that right?

A Yes.

Q Now, in a typical utility system, you have various types of generating facilities to handle these various types of loads or various levels of load; isn't that correct?

A Yes.

Q And such plants are characterized or such plant is characterized as baseload, intermediate or peaking capacity, isn't that right?

A. Yes.

Q Now, in PE's service territory, you have a generation mix of nuclear, coal, oil fired and pump storage and hydro facilities, isn't that right?

A. Plus interchange, yes.

Q And the percentage of capacity represented by nuclear is about 17 percent right now, isn't that right? Subject to check?

A. Capacity as opposed to output?

You said capacity, not output?

Q Yes.

A. You are relating nuclear capacity to peak load or to installed total capacity?

Q Installed total capacity.

A. That's about right.

Q And roughly, 19 percent for coal fired including mine mouth and other coal?

A. Yes.

Q And roughly 18 percent for hydro?

A. Yes, that's right.

Q 27 for oil?

A. Right.

Q And 16 percent for internal combustion?

A Right.

Q Those figures, I take it, would vary, if you were looking at the output in megawatt hours?

A Yes, they would.

Q That would drive them, at least with nuclear, would drive it up?

A That's correct.

Q And in fact, it would drive the coal up as well?

A Yes.

Q Could I ask you what your source of information is? Is that a company manual or - -

A This is company data, yes. It is a little handbook. Put together with company annual data.

Q Fine. Now, typically, there's a firing order or economy dispatch in terms of the usage of these various types of facilities we have been talking about, isn't that right?

A Facilities, the generation is dispatched on an economic basis.

Q And baseload would be on most of the time, I take it?

A The company's baseload equipment, yes.

Q And intermediate capacity would be used for

what percentage of time?

A. As the load curve grows through the day, intermediate capacity is added or PE capacity, depending on the time you are in a cycle, what the most economical course to take.

Q. And peaking is used, then, during I take it periods where the magnitude of your load is really abberational? Is that right?

A. Is what?

Q. Abberational or marginal. In other words, peaking use is not used all the time?

A. Peaking is the top of the cycle.

Q. Could you assign a percentage in an ideal sense, what you would look for in baseload versus intermediate versus peaking?

MR. HALL: Mr. Dasent, I don't know how much further you want to go into this or not - -

MR. DASENT: That's about it.

MR. HALL: Mr. Carroll is the company's electric operating capacity witness who has somewhat greater knowledge of this. Mr. Carroll would be a more appropriate witness.

MR. DASENT: If Mr. Williams knows, if you have an idea, a rough sense of what the percentage usage you would assign to those various types of plant, I would like to

hear it.

THE WITNESS: I believe one can see that best by the data we provided in response to the filing requirements. That shows the use of baseload peaking capacity throughout a 24 hour period. It is part of - - it shows it for - - it varies depending on whether we are in a summer day, a winter day, the days that the peak load periods are shown beginning on page 4-C, 18-A.

BY MR. DASENT:

Q Which volume are you referring to?

A Volume 4, 18-A, 6 of 10 is the first one and then there is - -

MR. SEGAL: Can you hold on for a second, Mr. Williams?

THE WITNESS: Continuing presentations on pages 6, 7, 8, 9 and 10.

BY MR. DASENT:

Q Which attachment are you referring to?

A It is attachment Roman IV-C-18-A.

Q On an annual basis, though, can you offer us any estimate of what percentage you would expect peaking versus intermediate versus baseload capacity be used?

MR. HALL: What do you mean to use?

MR. DASENT: I mean how much they will be in use as opposed to available.

MR. HALL: Percentage of use? Mr. Boyer provides that in his testimony and was cross examined on it last time. That's not Mr. Williams' field at all.

MR. DASENT: If Mr. Williams knows and cares to say, if he doesn't know, I can accept either answer.

THE WITNESS: I believe these presentations show that certainly baseload is by far, the largest time usage type of equipment. And intermediate is next and peaking is the smallest as a percent of total time. They are dispatched on an economic basis to provide the lowest cost power generation possible.

BY MR. DASENT:

Q Now, I take it that it is your view that much of the costs incurred by any utility is to make sure there's sufficient capacity available for the peak, isn't that right?

A That is certainly a concern. That we are able to meet the peak, certainly.

Q Could you tell me the system load factor for PE company?

A That is shown in RCW-1-A. Page 65 shows the annual load factor for each of the individual classes of the company's load and the annual statistical report provides that information for the company system.

In 1978 on a system basis, it was 5.4 percent

annual load factor.

Q Now, referring to page 65 of RCW-1-A, I take it the regular residential class has a load factor of some 27.9 percent, is that correct? I'm sorry. I'm reading the wrong line. 41.7 percent.

A That's right.

Q As compared to a higher load factor for high tension users of some 63 percent, is that right?

A That's correct.

Q Now, just so the record is clear, could you define load factor for us?

A Certainly. It is basically the percent of the time that the peak load occurs. If a system has one load continuously, that's 100 percent load factor.

Q All right, Mr. Williams. What's a high or a good load factor for a given utility system?

A They vary considerably depending on the type of load that the utility system serves. A utility system serving a concentrated industrial load could conceivably have a load factor in the area of 70 percent. As more residential load is mixed in, as summer peaking characteristics or seasonal peaking characteristics are mixed in, the annual load factor decreases.

Q Now, PE's load factor isn't, I take it, as high as you could get it, isn't that right?

A. I don't know what you mean as high as you can get it.

Q. PE's load factor isn't all that high, to my mind. I don't know how you are thinking about your load factor. Is that the ideal?

A. No. It is not the ultimate in the efficiency of use of all equipment, no.

Q. Would you be striving to lower it or get it a little higher?

A. Increase it.

Q. From this case and in previous cases, it is my understanding that PE's demands are placed on the system or the company's system at erratic times, so that your system load curves or I should say the company's load curves will have substantial peaks and valleys, am I right?

MR. HALL: Are you speaking of daily or seasonal?

MR. DASENT: Seasonal.

THE WITNESS: The company's seasonal load curve is one of the peaking characteristics in the summer period which is during the period of June through September. The peak is caused primarily by air-conditioning type load or various classes of customers.

BY MR. DASENT:

Q. I take it that you are agreeing that there are

peaks and valleys by the nature of your answer. Am I right or am I wrong in that assumption?

A. Certainly. The peak occurs during one of these four summer monthly periods. And there are periods when the load is lower than that peak. On an annual basis.

Q. The daily load curves would be similar, I take it, am I right or wrong in that?

A. Daily load curve is something that one can expect to see a peak as the day progresses and rising to a peak in the afternoon hours during the summer months and peaking in the evening hours during the winter months, with generally lower load levels occurring from 10:00 p.m. on through the nighttime hours until 8:00 a.m. of the following day.

Q. Now, we have talked about the company's curves. What about each individual class curve? Would they also have peaks and valleys?

A. They are all drawn individually by class in RCW-1-A, on page 61 and 62. 61 is a summer load curve shape and 62 is a winter load curve shape and that shows the daily load curve for each of the classes of customers.

Q. Do you have load curves by strata for the peak summer days and the peak winter days for the residential class? Your rate structure volume contains some of those graphs?

A. Yes. On 4-C-17, they are shown by the various strata for summer.

Q If I am not mistaken, are those the same curves that we saw in the last case?

A. Yes, they are.

Q And these curves were derived from what information?

A. A 1975 residential load survey.

Q Is there a copy of that available? That you could supply to me?

A. Well, this is the result, by strata, of that study.

Q As I understand it, though, the study, itself, gives some insight to us as to the sampling procedures you used, and some of the nuts and bolts of applying the study to the cost of service study. Am I right or am I wrong?

A. No. If it is not described how it is applied to the cost of service study. The load study is a study to develop class load shapes. Those class load shapes are then used and adjusted for the kilowatt hours of load that occurred in subsequent years after the test. The shape is maintained, but factored up to the new kilowatt hour level of load for subsequent annual period, and that data forms an input to the cost allocation study.

The load study, itself, is the mechanics of

going out and installing the meters in the field,getting the information in off magnetic tape and into a format, data format such as is shown here in 4-C-17.

Q Now, it is my understanding from reading the load study last time that it did give us some insights into your sampling procedure and how that data was collected? And what steps you took?

A. As far as the sampling procedure, yes.

Q Is that copy available? Is a copy of that study available and would you provide it?

MR. HALL: Excuse me, Mr. Williams. There is a physical document called a study that puts this altogether?

THE WITNESS: No. There are results. There are computer printouts. These are the outputs of the load study, if you will. There isn't a compendium all put together in hard copy.

MR. HALL: Mr. Dasent, I believe you are remembering a request that we had from the Commission Staff last time to state the sampling procedures that were employed in the residential load study and I believe there was specially put together a paragraph or so which did that. Perhaps Mr. Williams can refresh my recollection on that.

I seem to recall this - -

MR. DASENT: I definitely recall that much and I thought there was a description of a study as other utilities

put out indicating in narrative form, your sampling procedure, how customers were selected for each strata.

THE WITNESS: That information is a part of the filing requirements. The strata definitions and limits are shown in this 4-C volume.

BY MR. DASENT:

Q There's no study beyond that? There's no narrative description of what you did with the graphs?

A No.

Q That's it. Fine.

MR. HALL: I will note there's substantial data which we have indicated in response to your interrogatories that you are welcome to come and see.

MR. DASENT: Well, the data - - let me refer you back just so we are clear, to Exhibit RCW-1-A.

BY MR. DASENT:

Q The curves on that particular graph are indicative of the class contribution to the various peak days for the year 1975 or for the year 1978?

A No. This is the year 1978 and it is the average of the four weekdays when the peak occurred in the months of June, July, August and September and what each of those classes was doing at that hour of the peak. The load shape that was obtained by the '75 study has been adjusted to the kilowatt hour level of use of that class in this 1978

year.

In other words, the same load factor was used but adjusted for the new level of kilowatt hours.

Q And the new level of kilowatt hours is that weather adjusted?

A Yes.

Q All right. When is the -- what is the annual peak for Philadelphia Electric Company? Is that indicated on the bottom of page 61 as June 27, July 21 and August 17 and September 2 for the calendar year 1978?

A These were the peak days of these four summer months. The absolute peak of these four days was the August day of August 17.

Q Okay. And what was the magnitude of the peak on that day?

A 5,667 megawatts.

Q Now, is that adjusted for weather?

A No. That's an absolute peak.

Q When it is adjusted, what is it rounded down to? Or what is it adjusted downward to? What figure?

A I don't have the weather adjusted value here. I could obtain it for you.

Q If you can provide it.

MR. HALL: Mr. Boyer does that and I believe it is in his exhibit VSB-2 or else he provided it for the

record last time. It is already in the record. We will see if we can obtain it for you.

BY MR. DASENT:

Q Are the monthly peaks for the four summer months fairly similar in magnitude?

A June was 5209. July, 5338. I have given you August. September was 5099.

Q And all these are not adjusted for the weather is that right?

A That's correct. They are not.

Q Do you have any idea roughly what percentage the winter peak is to the summer peak in this utility?

A I don't have the winter peak available to me at the moment. I will be glad to give you that.

Q Do you know even roughly what the percentage is?

A It is about 80 percent, to my recollection.

Q Now, I take it in the ideal situation with the utility system, we would be trying to get a higher system load factor by getting the various peaks on the system roughly equal? Would that be a goal of yours or at least pulling down the higher peak to the lower peak?

A Generally it is advantageous to improve annual load factor, yes, and the ways you have described are ways of achieving it.

Q And that's the purpose of your summer-winter differential, isn't it?

A Well, the purpose of our summer-winter differential is a price signal to customers that indeed we are a summer peaking company and that we would like to let them know that it is more costly for peaks to increase in the summer months, because it will ultimately cost all customers more money and it is desirable to price energy to convey these pricing signals that we are a summer peaking company and hopefully this will restrain the growth of use of electricity in peaks in the summer months.

Q Now, PE has been a summer peaking utility for about twenty years, as I recall, isn't that right?

A That's about right.

Q With that in mind, I take it you are not looking down the road envisioning it becoming a winter peaking utility, are you?

A I don't see that happening very soon, no.

Q How did you arrive at the specific summer-winter differential that you have proposed in this rate case? What's the justification for it?

A The summer-winter differentials are in different formats in different rates as we have discussed previously.

Q I'm sorry. Let's focus on rate R.

A Rate R, the summer-winter differential of one cent was established at the conclusion of RID 438, and the application of rate increase in this case was simply an addition of a percentage increase to that existing one cent differential between summer and winter prices, which I believe is a reasonable price signal to give to customers.

Q Does the difference in summer and winter prices bear any relationship to the magnitude of the summer and winter peaks?

A No. Not specifically to the peaks.

MS. BUSH: Excuse me. Could I have that question read back, please?

(The question was read by the reporter)

THE WITNESS: Excuse me. I do have available to me the weather corrected peak for 1978, which you just asked for a few moments ago. And that is 5630.

BY MR. DASENT:

Q For which month?

A That was 1978.

Q August?

A August. Weather corrected.

Q Do you have it for the other peaks?

A No, I do not.

Q Now, Mr. Williams, in your professional judgment,

what is the chief cause of PE's summer peak?

A. Weather sensitive air-conditioning equipment is the primary.

Q. And you will find saturations of that type of equipment in the residential class and the commercial class, is that right?

A. There are -- the commercial and residential classes have a higher saturation of air-conditioning than the industrial class, yes.

Q. Now, for PE company, do all classes peak in the summer?

A. Yes. Well, I'm sorry. Except RH, which is obviously, heating.

Q. Now, given the fact that rates for RH and R are the same in the summer, I take it you do see some saturation of air-conditioning in the RH class as well, though, isn't that right?

A. There is air-conditioning present in RH just as there is in R, yes.

Q. But the magnitude of the peak is still greater than the winter?

A. Yes. The heating peak is higher than the RH summer peak, yes.

Q. Now, as I understand it, Mr. Williams, proper rate design can accomplish the goal of lessening the need for

future capacity additions, do you agree with that?

A. That's one objective of the summer seasonal price signal.

Q. So I take it, then, you'd want your summer price signal for any rate to have an impact on, say, the expenditure of construction funds in the future, isn't that right?

In other words, try to avoid costs that aren't necessary to be incurred?

A. Yes.

Q. And this is a significant problem since we know for the period 1979 to 1982, this company will spend about 1.9 billion on construction. Is that right?

MR. HALL: Objection, Your Honor. That's not Mr. Williams' field. Mr. Paquette deals with the amount of money the company will spend.

MR. DASENT: I wasn't, Your Honor, referring to the amount of money in terms of his commenting on that so much as the fact it is a significant problem that will be addressed through rate structure in part. I think there's a slight difference.

THE ADMINISTRATIVE LAW JUDGE: Could you perhaps rephrase the question, Mr. Dasent?

BY MR. DASENT:

Q. Given the facts, Mr. Williams, that substantial

moneys are spent on construction, the function of rate structure becomes very important in terms of deterring or diminishing future growth.

A. This should be a consideration in rate design, certainly, the need for future capacity additions.

Q. As I understand it also, Mr. Williams, PE Company has a policy commitment to nuclear capacity to serve the future needs of its customers efficiently, isn't that right?

A. PE has under construction a nuclear plant.

Q. You are saying that PE has no policy commitment to providing nuclear energy for the future needs of its customers?

A. I'm not commenting on policy for any needs beyond that which is under construction. That is the reply that I made. The only committed construction currently in progress in a nuclear plant. A policy beyond that point is constantly being reviewed.

(Transcript continues on next page)

MR. HALL: I might add, as you know, Mr. Dasent, Mr. Boyer is the company official which establishes policy with regard to generating plant, especially future generating plant construction.

BY MR. DASENT:

Q Now, Mr. Williams, from looking at your tariff, your rates in the summer are slightly inverted; isn't that right?

A The residential rate is inverted in the summer, yes.

Q And I take it that is a cost-justified inversion in rates?

A No. The price signal is conveyed in the residential rate by the pricing in excess of 500 kilowatt hours per month. The pricing less than 500 kilowatt hours per month is the same, in both seasons has no price signal to it and indeed is a result of prior rate case actions and determinations by the Commission.

Q Now, in light of all you have stated today on the record and your prepared testimony, how do you justify the declining rates, declining block rates in Rates R and RH?

A I don't view them as declining block rates.

Q How do you justify, Mr. Williams, the fact that for Rate R in the winter, various blocks diminish

in price as you increase in usage?

A There are only two blocks in Rate R and RH, a price which is the same up to 500 kilowatt hours per month in all months of the year in both rates.

In Rate RH, in the winter months, the price over 500 kilowatt hours is a pricing established for heating use. That heating use is a seasonal use that we know is only going to be with us during the winter period, and we know approximately the kilowatt hours use we expect to see from a heating system. Hence, a kilowatt hour pricing can develop for service to that specific load.

The pricing of rate R above 500 kilowatt hours per month is a seasonal price signal with a one cent differential between summer and winter periods to convey the seasonal price signals that we have been discussing. That is the only reason for the change in price. I don't view it as a declining block rate.

Q Now, above the 500 kilowatt hour level in both Rate R and RH, the price does go down in the winter; isn't that right?

A Yes.

Q And the reason it goes down in the winter, I take it, has something to do with your load study; am I correct?

A The reason it goes down in the winter in Rate

RH is to provide a price that can be offered to a given load that we know is seasonal and that we know approximately the kilowatt hours that will be obtained from that load, the load factor, in other words.

Q So, load factor increases with usage? Is that the principle?

A No. No. We know that it will be approximately 5,000 degree days in each winter period, and we know that that translates into a number of kilowatt hours per customer that will be obtained for each heating customer on average.

And, therefore, a price per kilowatt hour can be developed for such a service to a specific load. That is the only reason for that difference in pricing between RH and R.

Q Now, what impact have your load studies had on your pricing in Rate RH? For example, what I am trying to isolate is, you mentioned load factor before, and I would like to get into coincidence factor and load factor and how they tie in with this price that goes down at the 500 kilowatt hour point under Rate RH or Rate R.

A I have just tried to describe the nature of the winter season heating load and why a specific price can be offered for service to that load which is different than the price that can be offered for any type of load factor, completely different type load that would be put on the

system by a residential customer using over 500 but not a heating-type load.

The load factor and hours use of that non-heating load are entirely different than the heating load and entirely unpredictable, whereas the heating load is a season after season repetitive thing.

Q We went through a discussion a few moments ago concerning prices or actually costs varying through time.

Now, that is true for any given day, for any given season, any given year; isn't that right?

A Yes. Prices vary.

Q If that is so, let's look at ---

A I'm sorry. Costs vary to provide service. Our prices are seasonably constant for the eight winter-month period.

Q Your costs are varying through time?

A Yes. I corrected it.

Q Okay. At best you have a proxy, I take it, with the current pricing scheme that you advance in this rate case doing the best you can without time differentiated rates?

A We are pricing it on a seasonal basis. We are looking at an eight-winter month period and on average developing an appropriate price based on average embedded costs which are indeed the basis of this ratemaking

procedure.

Q Now, let's focus on any December when we have a residential heating customer who has passed the 500 kilowatt hour point and now is going into a lower rate.

Are you willing to tell me that this is necessarily in an off-peak period on your daily load curve, or do you know?

A We know from a test of the customers' heating loads specifically what type load shape that will offer.

Q Is there any guarantee that this customer will reach that 500 kilowatt hour usage point, 501, actually, and be justified, because his usage is totally off peak on a daily load curve to a curve at a lower cost?

A The 500 kilowatt hours you must remember is on a monthly basis. One doesn't arrive at that each day and say I am over 500 kilowatt hours now. It is on average the base load use over a monthly period. And as a class, this average is the base load use of the residential class. Use above that level is attributable to heating load.

Q Do you have any daily load curves for Rate RH other than the load study profiles that you have indicated?

A We have been asked to develop as a result of last week's hearing a curve on a daily basis for RH and regular residential customers. We are in the process of doing that now and will be providing it to you shortly.

Q Fine.

We spoke about various load factors for classes as indicated in your RCW-1A exhibit.

Could you break out a specific load factor for the water heating customers, uncontrolled? Do you have a specific load factor for them?

A I am not sure it is anything more than academic interest because the class is in the process of disillusion, as you are probably aware.

Q If you have it, I would like to know that.

A We will check.

Q My next question is: What is the load factor for the controlled group.

A We will check.

Q Okay.

I thought we had a question outstanding.

A No.

MR. HALL: I take it we don't have it. It will take some time to check the load factors.

MR. DASENT: Okay. I was giving you time.

BY MR. DASENT:

Q Now, all the load factor information and the coincidence factor information that we see on page 65 of RCW-1A, I take it, is gleaned from your load study; isn't that right?

A Yes.

Q Could you define coincidence factor for the record?

A Yes. Coincidence factor is the coincidence of the actual load as compared to the sum of the individual pieces of that load. It is always less than 100 per cent.

Q How is that relevant to ratemaking?

A Well, its relevance, it's useful in looking at the coincidence of all customers of a class as to how they will impact on the peak load of that class, and, indeed, if they were all coincident with the peak of the class, they should all be assigned the same peak, assignment for cost of the peak of the class.

But their coincidence with that class' peak varies in relationship to their load factor. If a customer has a very low load factor, ten, 20 per cent, the chances of that customer being coincident with the class peak is very low, so much of the time the customer is abusing his load. If the customer's load factor is quite high, 80, 90 per cent, the chances of coincidence of the peak are high. And this load factor/coincidence factor relationship to the curve is what is reflected in our cost curve for HT and PD in that the coincidence factor rises sharply as load factor increases from low levels and generally flattens off during the median area of load factors and then rises again

to 100 per cent, 100 per cent load factor.

Q What is diversity, Mr. Williams?

A Well, diversity is the inverse of the coincidence factor. It is chances of being diverse, not coincident.

Q Diversity does create some benefit for a given utility system; am I right?

A That is exactly right, and that diversity is what is being recognized by this coincidence factor/load factor relationship.

Q If I had to pick a grouping of customers and compare it to the commercial and industrial load that will have contributed greatly to diversity, would I be wrong in assuming that would be the residential class? Do you want me to rephrase it?

A You are viewing the peaks of the various classes and the diversity among the peaking of the various classes of load, I presume. Is it not that what you are considering?

Q Yes.

A And to the extent that there is diversity among the classes, the total system load is less than the sum of the individual class peaks of all of the classes. Diversity, therefore, helps to reduce the total system load, yes.

Q Wouldn't you agree that residential users contribute greatly to the diversity benefit on the PE system?

A No. All the diversity is the relationship

among the classes, and one can't attribute the benefits of diversity to any one of the pieces. The fact that the peak loads occur at different times creates diversity, but one can't attribute that benefit to any one of the classes. It's the result of the interaction of all of the classes.

That is why it is important to have a diverse group of customers on a utility system, to provide a good diverse situation for servicing load and more economical situation.

Q If the likelihood of my coincidence with the system peak is very low, vis-a-vis another customer whose coincidence with the system peak is very high, wouldn't I be contributing more to diversity than the other person?

A The likelihood of your being on or off the system peak when you come down to one individual customer is, of course, the difference between your use of load and the system peak.

Q Okay. I am going to change it to class. Will your answer change?

A The likelihood of that class' coincidence with the system peak is ---

Q It is low and the other class is high in terms of coincidence with the peak. You are telling me that the class with the low load factor is not contributing greatly to diversity, that they're not on the peak and the other

person is?

A Well, I think if we turn to a picture of when the peak occurs in the summer, on page 61 you can see pictorially exactly what is happening, and the residential peak occurs about five to six p.m. And that is very close to the system peak.

And at that time the residential load is increasing up to that peak. The high-tension class is coming down from its daily peak. The commercial class is coming down from its daily peak, and the primary is coming down.

And it is at that point of intersection when the peak load occurs. Residentials are going up, others are coming down. And that is when the peak occurs, late in the afternoon on a summer day.

Q Could you define diversity factor for the record?

A I believe I did, yes.

Q You defined diversity. Diversity factor is something a little different than that; isn't it? Tell me, isn't it the ratio of the non-coincident maximum demand of one or more groups to their maximum coincident demands? If you can offer a better definition, I will take it.

A I will accept that. Of course, the reciprocal of that is the coincidence factor, as I said.

Q Okay. What would be the diversity factor between the residential class and the industrial class?

A We can calculate it for you.

Q I would like to talk about the mechanism of costing procedure and specifically the cost of service study.

I take it the first step in developing the cost of service study is functionalizing cost; am I right?

A Yes.

Q And you would define functionalization as what?

A Functionalization into the production and transmission, distribution categories.

Q And the next step is to classify these costs into certain categories, namely, demand, energy and per customer cost; is that right?

A Yes.

Q Now, how do you determine the appropriate classification for demand cost, just sort of a rule of thumb?

A Those that are demand related.

Q Are we talking about the fixed facilities usually when we talk about demand cost?

A Usually it is carrying charges on invested capital that we are talking about that vary with the customer's demand for energy. In other words, as the

customer demands more energy, more production facilities are required. Therefore, production facilities are demand related.

Q Now, how do we determine the appropriate classification for energy costs? Are they variable costs?

A Energy costs are all those costs related to the production of energy. The fuel is certainly the primary energy cost. The variable operation and maintenance as a result of the production of energy, these are energy-related costs.

Q How about customer costs?

A Customer costs are the costs of connecting a customer to a minimum-size system.

Q The next step in this process, I take it, is to allocate cost to various customer classes? Am I right, or have I missed a step?

A That is true.

Q How do you go about allocating these costs to the various classes?

A Well, we use the factor described in this cost allocation procedure. For allocating production and transmission costs, we look at the contributions on a load basis at the time of the four summer monthly peaks. For allocating distribution costs, we look at the contribution at the time of the class' absolute peak no matter when it

occurs.

Q Now, Mr. Williams, I am curious as to how you functionalize such costs as general plant. Could you explain that to us?

A When you say "general plant," do you mean common plant, headquarters building, this sort of thing?

Q Yes.

A Yes, as shown on page 39, Schedule F-4. It is done on the basis of a summary of allocated production, transmission and distribution plant. So, it is a composite schedule based on the composite of all of these three allocators. Since indeed general plant is a service to all functions, it is done on a composite schedule, F-4.

Q Let me make sure we are talking about the same thing. We are talking about what specific items of plant under Schedule F, F-4?

A Well, one ---

Q Are we dealing with an office building? Are we dealing with office furniture? Are we dealing with all other types of items like that?

A Yes, that type of thing we are dealing with, general office, right.

Page 19 specifically shows the accounts allocated. It's 389 through 399 where F-4 is used to

allocate that general plant, laboratory equipment, communications equipment, tools, shop, garage,equipment, that sort of thing.

Q How do you functionalize such costs as administrative salaries, president's salary, for example?

A Well, that would be in the expense portion in administration and general expenses. 920 Account, page 12, allocation schedule is E-1.

Q I take it you would agree that both of these areas are not the easiest to deal with and that is why you are using joint allocation factors as opposed to assigning it to distribution or production and transmission; am I right?

A We are using joint allocation factors because they indeed apply to all factors and not just production, not just transmission. We are dealing with general plant, and you are dealing with people that deal with all aspects of the operation. When you are dealing with administrative and general salaries you are dealing with salaries that are allocated appropriate to all aspects of the operation. That is the reason it is appropriate to use a composite schedule.

Q Getting back to general plant, then, if I looked at the president's share, would I know immediately that that is demand related or energy related, or are you

telling me that is a policy judgment you have to make because it is a rather murky area in terms of allocation?

A I am saying it is allocated on the summation of production, transmission, distribution and all functions because indeed it is related to all functions. The president readers decisions related to all functions.

Q Are you telling me if there is a superintendent for a given production plant, that his chair is all -- functionalized as all production or transmission as opposed to a joint allocation factor being used, or are you telling me this is a murky area where a policy judgment has to be made?

A I am saying that general plant is generally allocable to all functions, and, therefore, we have allocated it to all functions.

Where a person's salary is directly allocable to a function, it is so allocated and goes directly to that account.

Q Now, in your judgment you have told us how you would allocate various types of plant, including general plant and now administrative salaries.

But isn't it a fact that those costs could be allocated or assigned on a per customer basis? There is nothing to stop you from doing that; is there?

A I don't think that would be a reasonable decision.

I think a much more reasonable decision is to allocate them to all functions.

Q Why isn't that a reasonable decision?

A Because indeed the reason for a general plant need, investment in general plant, is created by all functions.

The fact that we have a production system means we need office furniture related to production. The fact that we have distribution system means we should allocate some to distribution. These functions exist and should be allocated on functions.

Q I take it we are not in disagreement that there are instances where general plant and other items cannot be directly assigned to the function that perhaps the person who occupies the office furniture or chair is performing; am I right or wrong?

A I believe we are making reasonable judgments based on the total responsibility for each cost that is incurred, and indeed general plant is applicable to all functions and so allocated.

MR. HERSHEY: Your Honor, might we indicate for the record the gentleman who -- at least the name of the gentleman who has just passed a note to the Witness?

I realize that that may be standard PUC procedure, but the Witness is sworn, and nobody else in the

room is sworn, and I would like to get it on the record exactly what happened.

MR. HALL: Your Honor, this is Mr. Sundermyer who is in charge of the preparation of the company's cost of service study under Mr. Williams' direction. Mr. Sundermyer will on occasion refresh Mr. Williams' recollection, as is standard practice in these hearings when we are dealing with complex financial matters.

That is all that is involved.

THE ADMINISTRATIVE LAW JUDGE: I think it might be a good time to take a break. Come back in ten minutes.

(Short recess.)

THE ADMINISTRATIVE LAW JUDGE: I think we are ready to proceed. Mr. Hall, when will we expect to see your - - I don't know what you call it.

MR. HALL: We are calling it a brief, Your Honor. It will be here momentarily. Our problem with putting it together is we are dealing with typing people who have to do their own boss' work first before they can do this.

THE ADMINISTRATIVE LAW JUDGE: It is not an unheard of problem.

MR. HALL: One other thing has arisen during the break. I wonder if the parties could indicate to me how much cross examination they will have for Mr. Paquette and Mr. Scott who are scheduled for tomorrow. The reason I ask the question is only from a time frame, and to determine whether or not it would be advantageous to perhaps obtain another company witness.

MS. BUSH: This doesn't need to be on the record.

THE ADMINISTRATIVE LAW JUDGE: No. Off the record.

(Discussion off the record)

THE ADMINISTRATIVE LAW JUDGE: Back on the record.

BY MR. DASENT:

Q Mr. Williams, just to wrap this up, we were looking at page 12 of RCW-1-A in going down the list of things and also with reference to page 39 of the same exhibit, schedule F-4 in the cost allocation used for the accounts on page 12, relate to a whole host of things ranging I take/from it advertising to office supplies to property insurance, to duplicate charges, to rents, to pensions. Am I right?

A If you are reading all the accounts to which F-4 is applied, they are shown on the various accounts where F-4 was used is designated as we go through the study. F-4, wherever it is shown in the right hand column, was used to allocate the expenses in the account shown on the left hand column.

Q And the reason you used F-4 which is the composite allocation factor, I take it, is because you could not sort out proper production, from distribution, from whatever is left, the transmission, these various functions, am I right? That's various costs?

A We used F-4 because the costs to which it was applied were applicable to all of the functions which are the ingredients of F-4.

Q Okay. But you will agree with me that in exercising judgment in this area that you don't know the proportion of the President's time during the calendar year

'78 that was spent on production versus transmission versus distribution, am I right?

A. We do not.

Q. Okay. Now, let's talk about the load study a bit. How specifically is load data used in your cost of service study? That's first. I take it it is to derive load factors, coincidence factors, that type of thing?

A. Load data is used to allocate the costs among the various classes and that is schedule A-2. So that A-2 is the maximum non-coincident class peaks at the input to high tension, for example. A-1 is the average class demand at the point of generation for the four summer months.

Now, A-1 schedule was used for all production and transmission cost allocations and then A-2, A-3, A-4 as they applied to the individual classes were used to allocate those individual class expenses. So the load study is a foundation done for the cost allocation.

Q. Okay. But your load data does affect coincidence factors, load factors, diversity factors and your allocation factors as you mentioned?

A. Load data is the basis of the allocation of the various costs to the various classes and it is the only sound method of allocating costs to the classes. Coincidence factor, load factor, these sorts of things are calculations of the characteristics of the load of those individual classes.

They are not allocators.

Q Then how are load factors and coincidence factors and diversity factors utilized in your cost of service study as per page 65 of RCW-1-A?

A Page 65 utilizes the results of our load study to calculate load factor and coincidence factor as a source of information which was provided as an output of the load study. They are not used per se, in the cost allocation study.

Q How do load factors and coincidence factors indicated on page 65 of this exhibit impact upon rates, then?

A Well, load factor is a result of the combination of kilowatts and kilowatt hours of a given class' load characteristics. Now, kilowatt hours are the energy component of that class and the costs attributable to energy are indeed allocated on an energy basis within the cost allocation. The costs attributable to the kilowatts or demands are attributable to that class' demand. The load study is a study of demand at various times for each class.

So that these pieces, the kilowatts and the kilowatt hours of each class are an integral part of the cost allocation study. But the load factor calculation number per se isn't plugged in and used somewhere. It is the

pieces that go to make up the load factor number that are used is what I'm saying.

Q Now, let me understand the source of load information used by PE. These, the load data that you refer to is gathered within PE's service territory, its own customers, correct?

A Yes, it is.

Q Now, the study, I take it, was completed in 1975. Am I right or wrong?

A In the case of the residential class, that's correct. In the case of the PD and HT, a study is made each year.

Q But in your most recent cost of service study, that's for calendar year 1978 that you have data for PD and HT.

A That's correct.

Q Now, what about your other rates? What is the vintage of the data you used for the other rates other than HT, PD and R?

A Rate GS study is done periodically just as the residential study is done and the last GS study was - - that's a matter of record in volume 4, here. At page Roman IV-C-21, the study of GS was 1974, which is the primary component of the small commercial.

Q Now, the residential study was completed in

'75, so when were the customers actually metered?

A '75.

Q Calendar year '75?

A Calendar year '75 data. Right.

Q Now, for rate RH, we haven't gotten to that, yet. When was data gathered for that particular class? Was it about 1969?

A Well, a separate study was made in 1970 of the heating component of the RH class. And that load shape for the heating component is used in this current load development. We have currently underway a study of the RH class, which will be completed early in 1980.

Q What about the water heating rate?

A '77 was the water heating study.

Q Now, for residential users, what type of metering equipment was utilized in the study? Was it magnetic tape?

A Westinghouse magnetic tape.

Q For what length of time were they needed?

A One year.

Q During how long an interval in minutes were customer maximum demands recorded?

A Demands were recorded every half hour.

Q Now, as I understand it, all the load information you have from these various periods, then, was not coincident

data, am I right or wrong?

A. The load studies are made on a periodic and cyclic basis to make the best economic use of our investment in approximately 250 Westinghouse magnetic tape demand recorders. That data provides a load shape. That load shape is updated to the actual kilowatt hour use of the year for which the data is being used.

Q. How is it updated?

A. So that the shape is the only thing that's carried over from one year to the other. The absolute value is made appropriate for the year under examination.

Q. When you said made appropriate, what do you mean? How do you do that?

A. If the load factor, the shape of the curve on a daily basis is adjusted for the kilowatt hour level of use which has either increased or decreased from 1975 to 1978. But it assumes the same shape as far as increases and decreases.

Q. Okay. But in extrapolating previous year's information to the test year, did you use any type of - - is it a Barry curve or how do you get from 1974 or 1975 up to the present? I'm just trying to understand that.

A. By calculation of the kilowatt hours in the actual year as compared to the test year and bringing it to a normal temperature basis. It is a matter of calculating.

Q How do you use Barry curves in your load research?

A. We don't. In load research? Load research is the mechanism of installing meters and testing load. We use the Barry curve as a method of relating coincidence factor to load factor. And we use load research techniques to reaffirm the relationships of a Barry curve. That's the product of load research. One of the products can be a Barry curve. That Barry curve is then used in the development of costs. Prices are then calculated to follow costs in a reasonable manner.

Q Now, if you have this load data, why do you need the Barry curve?

A. The Barry curve is another tool that is an output of load research work. It is a valuable tool in relating how much demand should be assigned at each level of load factor within the class.

Q So the Barry curve isn't something you pull out of a textbook. It is something that you are developing from your load research to apply to - -

A Well, the Barry curve is a matter of record in a textbook. The methodology of developing the curve. What I'm saying is we reassure ourselves of its relationship still being valid by periodic testing.

Q All right. I would like to talk about the

design of your load study.

Now, how was a customer chosen who was going to have a meter installed on his premises?

A. We select six strata of use, monthly use by residential customers. I was discussing the residential study, now. We select six strata of use on a monthly kilowatt hour basis, as cross sections, if you will, of the residential universe and then, on a strictly random basis, pull a sample from the customers in our customer file on the computer, whose monthly use has fallen within that strata.

So that it is a random of selected samples.

Q. When you say random, does that mean every tenth customer out of your file or what? How do you determine the random sample?

A. It is, yes, strictly on a random basis. A random selection process from the universe, if you will.

Q. You are being very general. Can you focus in on exactly what you did? You could take every tenth customer, you could take every two hundredth customer. Could you tell me the process you went through?

A. If I may, just a moment.

MR. HALL: Your Honor, if we could have a brief recess for just a second.

(A brief recess was taken.)

THE ADMINISTRATIVE LAW JUDGE: Before we begin, I received now three briefs, memoranda on the question of the motion to strike, Mr. Hershey, Miss Bush and Mr. Hall. That is all I am going to get?

(No audible response.)

THE ADMINISTRATIVE LAW JUDGE: Thank you. You may proceed.

BY MR. DASENT:

Q We have a question outstanding.

A May I correct an answer from a previous question, if I may?

The Rate GS study date was 1977 instead of 1974, which I gave previously. It is incorrectly stated on page 4-C. It should be '77.

The outstanding question regarded the sampling process for residential customers, and it is on a random basis within the stratifications that I described as to the kilowatt hour usage.

The randomness is determined by the 40 customers to be selected in each strata divided by the customers in that strata, which develops a one over number, and we select every nth customer on that basis from the strata.

Q And that is done for all six stratas?

A Correct.

Q Would that be any different for your RH load study?

A The RH load study was selected at random of the total universe of RH customers since we were studying the RH portion of the load only.

Q What about your survey of rate RH or PD? Does that differ in any way?

A HT and PD are, of course, done each year, and the data is obtained by the individual customer billing data tapes or magnetic or paper tapes that are available from all of the customers.

And for customers over 2,000 kilowatts, all of them are in the test group each year. Customers below 2,000 kilowatts are sampled.

Q Now, for the residential study for 1975, 40 customers per strata randomly sampled giving 240 altogether?

A That is correct.

Q Now, for Rate RH, what was the total sample size?

A RH we were looking at a homogeneous heating load portion only. We weren't looking at a stratified universe of varying types of loads, so that we were able to obtain one 40-customer group from this homogeneous load as

representative of the heating load.

Q Okay. The sample size for HT? Do you have any idea?

I will be looking for the PD and GS next.

A They are all shown on 4-C 21.

Q Okay. That is good enough.

A The answer is 75 commercial and 75 industrial for HT, 49 commercial and 50 industrial with less than 350 hours of use of billing demand, 50 commercial and 50 industrial with more than 350 hours of use of billing demand for PD.

Q Now, the strata that you indicate you used for the residential load study were derived based on winter usage; isn't that correct?

A That is correct.

Q In the process of putting together these various strata for residential users, did you exclude any customers because of erratic usage, perhaps they were atypical for one reason or another?

A No, not so long as they had normal billing data available in our customer records.

Q I take it to be eligible for this sample, you need at least one year's worth of billing, or is there any exclusion because of the length of billing? I don't know.

A I believe it was a six-month period, not a yearly

period of billing data for this purpose, if they have been on the system for six months. In the revenue selection process, we had to look at a year's history. So, we had to have continuous data for a year.

Q Did any customers refuse to participate in your program because you were going to put a meter on their house?

A Yes, there were some rejections, as I recollect.

Q How did you fill the gap?

A We chose an alternate sample on the same basis that I described the prime sample starting with a different random point in the universe but with the same nth number and used those as alternates in case we got a rejection.

Q When you started the study, you had 40 in each strata. When you ended the study, did you have 40 in each strata for the residential class?

A I don't have the detail.

The answer is that I am quite sure there were not 40 in each strata. There were probably 39, 38, depending on what was continuously available for the entire test.

Q Were there any meter failures during this program, your load research effort in the residential class?

A When you say "meter failure," you mean a meter -- problem with magnetic tapes and that sort of thing?

Q Well, for some reason it didn't produce the data that you needed for the entire period.

A There are inevitably some periods where something happens to the magnetic tapes, very small percentage of those. Inevitably with mechanical instruments, there is some.

Q Can you quantify that at all?

A It is an extremely small percentage of metering problems that we have. The reliability is way above 95 per cent. That is as far as I can quantify it.

Q Now, does your survey design compensate for meter failures or other factors that would diminish the sample size if you are aiming for this 95 per cent plus confidence interval.

A We are aiming for a 35 customer sample. That is the reason we go to 40. So that as long as we don't drop below 35, we feel we are well within the confidence range.

Q Can you assign a specific competence interval to your load study? You couldn't in the last hearing, as I recall.

A Well, the judgment of competence in our load study results I think can be best viewed by the relationship of the load build-up, that is, the final result of the load study as compared to the actual system measured load,

and that comparison is shown on pages 61 and 62 of RCW-1A.

The dotted line is the actual recorded system demand and the total of our build-up from the load study is the solid line. So that the difference is readily visible.

I think that it is quite an accurate load test and build-up of class load data to actual measured system load data.

Q Are you telling me, then, that the only indication of confidence you can give me is this dotted line on page 61, or are you telling me that you can assign a specific competence interval to this study?

A I am saying that in my view the bottom line of a load study is how closely that study comes to the actual load on the system for that year, and ours is extremely close as is demonstrated by the graphs on these two pages.

Q Could you do similar graphs for each class to see what the divergence was or have you done that?

A There is no way of measuring the actual load of each class. The actual load is a product of the load study. That is the reason for the load study. If it could be measured, there would be no need for a load study.

Q Actual load is then derived from a sampling of

customers during a given year to arrive at these various curves on the bottom part of the graph? Is that what you are saying?

A The curves at the bottom of the graph are the class loads which are a product of our load study by classes, yes.

Q By definition, a sampling of your customers, an estimate of what the various class loads should look like?

A That is our calculation of the class loads and the verification of the accuracy of the results of all of these calculations are demonstrated by the comparison of a metered system load shown by the dotted line and a calculated system load shown by the solid line. They are very, very close.

Q I take it, then, you have amended your previous comment where you indicated that you are aiming for a 95 per cent plus confidence interval?

A My statement about 95 per cent was on the number of meter failures. You asked me about tape failures in the magnetic meters, and I said that our performance on the magnetic meters was above 95 per cent.

Q That had nothing to do with the confidence level?

A No.

Q Okay.

A Confidence in the meters, I guess, is ---

Q Okay. Now, we have already discussed the fact that maximum peak loads are adjusted for weather. So, I take it, then, you would agree with me that a seasonal load magnitude would reflect how severe temperatures were whenever it was measured? I am really talking about the four summer peaks at this point. Does that make sense?

A Well, the class load data is adjusted for a normal weather situation. The normal weather is what is used to develop the class loads.

Q Now, in the recent past it seems to me that when you make it a weather adjustment, the magnitude of the peak seems to be diminished and certainly the data you gave us today indicated that; am I correct?

A That was a system load that we were -- we gave you a total system load actual and a weather corrected, and in this case, the weather, normal weather would have not been as hot as that particular day, and, therefore, it was a negative correction, yes.

Q That has been true for the past couple years, hasn't it, subject to check?

A I don't know without checking.

In 1977 the weather corrected was lower than actual; 1976, the weather corrected was higher than actual; 1975, they were equal; 1974, the weather corrected was higher

than actual; 1973, the weather corrected was lower than actual. It can be either way.

Q The magnitude of the system peak does have an impact on sales, obviously; isn't that correct?

A Well, sales are kilowatt hour sales. Now, you can have a higher sales volume in a year where your peak was not actually as high as the previous year if you had a lot of relatively warm days but no one real hot day that would create a peak, you could actually get more kilowatt hours out of that year with the fewer fairly warm days because load, kilowatt hour sales are a product of the hours use of the equipment, not the one single peak that happens to occur.

If you had the extreme, just one hot day in the summer, we would reach the peak. And if the rest of the summer was very cool, we would have very low load as far as the kilowatt hour sales are concerned.

Q But in reaching the summer peak, as I understand it, it takes a few days to get there. Usually you can tell that you are approaching a summer peak because it is just not one hot day, it may be a series of days when the weather was unseasonably warm.

A Oftentimes true, yes. But there may be a number of relatively warm days that result in high levels of kilowatt hour use, is my point, that would result in a

relatively high energy sales level.

Q I want to talk about the off-peak water heating rate.

Would you describe this rate in terms of how the controls work?

A Yes. The control is a clock control which interrupts one side of the 240 volt supply to the customer's meter during six and a half hours out of each 24.

Q Does each customer have the same six and a half hour period where the meter is not on --- does each customer have the same period that he is taken off the system?

A Essentially so. There are two cycles in existence on our water heater timers currently where installing only the single straight cycle of six and a half hours interruption, there are a few remaining, I think, roughly 25 per cent of the universe remaining that have an interim on period of one hour, one hour and a half in the middle of this (pause) --- it occurs one hour before the expiration.

The cycle two goes off for five hours, then it comes on for an hour and a half, then it goes off for an hour and a half.

There are, as I said, about 25 per cent of the universe is that, but it is being phased out.

The meter that we are installing goes off for

in a period of six and a half hour period.

(The testimony is continued on page 1200.)

Q All those customers will be coming back on the system at the same time?

A That is correct.

Q That doesn't produce any problems concerning needle peaks?

A It can produce problems, if you have too many customers, too much load on such a controlled rate. At the present level, it does not create problems, no.

Q Now, I take it the customers on that uncontrolled rate have two meters on their house?

A That's right.

Q These customers, are by definition, not on at the daily peak, is that right?

A That's right. Their water heating load is not on. Their residential load is on.

Q That's what I mean. Just this one separate meter. Their coincidence factors, I take it, are quite low as far as the system?

A As far as the water heating load is concerned, it is non-coincident with the system peak.

Q Now, if I was on the uncontrolled water heating rate, what's the difference?

A The uncontrolled water heating rate has no clock to interrupt it for this six and a half hour period each day. It is continuously available. But it is continuously

available only to feed a water heating load. That's the only thing that may be connected with that source.

Q I see. Do they have a separate meter?

A. Yes. And that rate is being eliminated in accordance with RID 438.

Q Now, when it is eliminated, these customers on an uncontrolled rate will be billed under rate R. Am I right or wrong?

A. The customer is, has the option of having a clock installed and converting to rate WH off peak. Or having the load converted to his regular residential meter and combined and therefore billed under rate R. That choice must be made at the expiration of this case.

Q And at that time, will he have one or two meters on his house? Per given customer?

A. If he elects to have water heating off peak, he will still have two meters. If he elects to have the water heating supply on the residential rate, then he will have one meter.

Q Now, under your residential heating rate, as I understand it, you have water heating customers also. Is that right?

A. The residential heating rate had a provision in it that allowed for 400 kilowatt hours to be specially priced but not separately metered. That is also being phased

out.

Q How many of those customers do you have on your system right now? The water heating customer on the RH rate?

A Practically all of the RH customers are of that nature. They have the option of a separate water heating meter that would be off peak controlled, and a few of them have that, but relatively small percentage. By far, I guess 90 percent of them have one meter and water heating floating block provision, which will be phased out.

Q Just to get back to the diversity question, wouldn't a controlled water heating customer be contributing to the diversity of the system by not being on peak at all?

A The controlled water heating customer is off peak, period. There's no question of diversity. He is not there.

Q But by making the actual choice not to be on the peak, hasn't he contributed to diversity benefits of the system?

A Well, the reflection of him not being on peak is made by no allocation of production and transmission facilities to that customer. It is partially reflected in our cost allocation.

Q I understand that. But I am saying because he made the option, he made a conscious choice between being an

uncontrolled water heating rate and an uncontrolled water heat as opposed to a controlled water heating rate, he has contributed to diversity benefits on your system, hasn't he? Conceptually? That's it.

A. I have trouble with your wording of contributed to diversity benefits. He is off the peak, period. That's all there is to it.

Q. Therefore, his coincidence factor is zero, right? Non-existent?

A. Relative to the system peak.

Q. Okay. And therefore, the inverse of his coincidence factor, diversity factor, if I understood you correctly, is also zero? Are you saying that or are you saying he has made a contribution to diversity?

A. No. He has not made a contribution to the system.

Q. Okay. Let me try a hypothetical. If I had a hundred percent load factor class with a constant load without regard to season and a 30 percent load factor class with a seasonal load, which class would be more likely to be making a major contribution to the diversity benefits on my system?

A. What's the nature of the seasonal load?

Q. Air-conditioning.

A. Both classes would likely be exactly on system peak. The air-conditioning load would be likely to be on

system peak. A hundred percent load factor customer would be on system peak. They would both be contributing fully to the system peak.

Q Okay. I understand. Now, you make a few comments about lifeline. I have got to talk about that. Now, Mr. Williams, if you had no choice in the matter, either the Commission ordered you to construct a lifeline rate or your president told you we have to have lifeline, we've got to get on the bandwagon on this, how would you design it?

A The definition of a lifeline rate is providing service below cost. And that's exactly what we are doing to the initial blocks of the residential class currently.

Q If the Commission orders you to take one step beyond, let's say to construct a lifeline rate akin to the California experience, but not with all those complications, how would you design a rate to encompass what kilowatt hour usage to be targeted for what class, give me some of the details that would go through your mind in thinking out this process?

A The California rate recognizes the different heating requirements for different areas and therefore, one would design different kilowatt hours of use depending on the area.

Q We are just talking about PE's service territory.

California has a lot of climatic problems.

A. You asked me to fashion it after the California rate.

Q Okay. All I meant by that was at what level, what demarcation point would you set your lifeline? How would you target it to the people you want to serve? That's all I'm looking for.

A. I think I have expressed in my testimony my view that lifeline isn't an appropriate tool to convey social benefits. Rate structure is a very inefficient tool to provide such benefits. It cannot be well targeted. It is too broad in its application and many people who are not the object of the lifeline benefits receive benefits.

Q Now, with reference to page 11 of your testimony, you talk there about a hundred KWH level as a minimum monthly energy need. 250. Now, I take it by coming up with this 250 KWH judgment that you had something in mind, and that if the Commission ordered you to set up a lifeline rate, that figure would flash into your mind. Am I right or wrong?

A. I offered that as the minimum level of need and demonstrated further that at that minimum level of 250 kilowatt hours, our present rate was indeed below cost to provide service. So that in my view, there is absolutely no requirement to go further.

Q So that it sounds to me that your proposal to the Commission would be to freeze the first 200 KWH, 250 KWH per month as your approach to Lifeline. You wouldn't take any steps to lower them?

A I am not saying that at all. I'm just expressing an opinion as to the status of our present rates as they relate to the lifeline contract.

Q In considering a lifeline rate and again you are being ordered to do it, I'm not asking for what you personally feel. There are numerous factors that must go through your mind in terms of is it going to work. You've given a sum. Are you telling me it is your testimony today that you could not target the lifeline rate to the poor people that it seeks to serve? Is that your testimony?

A I'm saying that it is a most inappropriate and inefficient tool to target benefits to any class of customer because it provides that benefit to many people not intended to receive it by its very nature of the diversity of customers level of kilowatt hours. Kilowatt hour use level is most closely related to family size. Not to family income.

Q Now, what becomes the purpose of your advancing the appliance profile that you did on page 11? That is, I thought, in your judgment minimal monthly energy needs. Am I right?

A. That's correct and I am relating to the fact that indeed our existing rate provides such 250 kilowatt hours per month for service to such minimal needs at a price below the cost to provide that service. That's the current situation. And by definition, is already a lifeline type rate.

Q. As far as future cases are concerned, if you were ordered to implement a lifeline rate and it is your testimony that what you have already is a lifeline rate, are you saying seek its continuance by advancing this 250 KWH chart or are you saying we have done it all, the next case is another matter?

A. I am relating our present rate design and pricing to what I view as a minimum level of human need, 250 kilowatt hours per month. And even after the rate increase that we are proposing, the cost to provide this -- the price to provide this level of service will be below full cost.

Q. And as far as future proceedings are concerned, would this same level of cost recovery sought to be maintained if the Commission adopts a lifeline policy, would that be your way of implementing lifeline? Maintaining the same relationship that now exists?

A. A judgment must be made at each rate case depending on circumstances at that point, past Commission

orders and conditions known at the time of rate increase. I can't predict what will happen.

Q Pursuant to PURPA or any other regulation, have you filed a report with DEO or FERC or any other regulatory agencies related to them that you have now in effect lifeline rates?

A We file all the normal reports for the FERC that are required by law. They obviously have our rate schedules available to them to make their own judgment.

Q But I have never noticed a tariff sheet that said lifeline on it. I would like to see it if you have got it. It doesn't exist, does it?

A We will be providing as part of section 133 full cost data which will indeed make it obvious.

MR. DASENT: If I might have a moment, Your Honor, I think I am just about finished.

(Pause)

MR. DASENT: I'm ready when the parties are.

THE ADMINISTRATIVE LAW JUDGE: Back on the record.

BY MR. DASENT:

Q I have been asked by a couple of people now, Mr. Williams, what is the fuel component in base rates. I thought it was the 1.3478 figure that was stated in the DPS exhibits.

A. 1.3478 cents per kilowatt hour.

Q. Have you noticed any discrepancies in any of the other exhibits that you have put forth that states a figure somewhat higher than that?

A. No.

Q. A number of us have. That's why I bring it to your attention.

A. Could you point it out to us?

Q. How about looking at PECO Exhibit No. 1, Volume 4, Attachment 4-C-1, page 3 of 3 or any of the other pages.

A. 4-C-1?

Q. Yes. Down at the bottom of the page I think it is footnote 8, there's a 1.3753.

A. That's simply an adjustment for the two percent gross receipts factor which is part of base rates. You will notice it is 1.3478 and should be a dividing sign there. Divided by 1.3.02, yields 1.3753 which is simply a gross receipts tax adjustment. 2 percent of the gross receipts tax is included in base rates. The other two and a half percent is correctly in the STAC. It is entirely consistent.

Q. Now, let me refer you to page 12 of your Statement 2. Now, you mentioned there that GS and PD were treated a bit differently in terms of their allocation of

their portion of this rate increase. When you start with the sentence "rates GS and PD are currently providing more than the system average", and the sentence ends with "the average of all rates including base fuel at 10.9 percent."

Now, I don't understand what portion of this rate increase they are paying. Could you explain that?

A. I am explaining the method of distributing rate increase among the various classes of customers and it was done in exactly the same manner for all classes of customers. All fuel was first removed, and then the increase was spread evenly among the remaining dollars of the class. Unless that class, whatever that class was, was providing more than the average return, based on the cost allocation study. And if it was providing more than the average return, the increase was limited to the average increase of 10.9 percent.

All classes were treated in exactly that equitable manner.

Q. But that meant that other classes, then, and I take it you are focusing on the residential class, would therefore pay more as a percentage of this rate increase, specifically. Am I right?

A. It meant that that differential above 10.9 was divided evenly among all remaining classes and the end result is shown on A-5 which I pointed out this morning

was 12.7 percent increase for residential class.

Q I would like to refer you to DPS-1 and 2, page D-3-B and ask you what that adjustment accomplishes in terms of this rate increase in the proportion of it that residential users are paying.

A D-3-B is the adjustment to annualize for both growth in use of existing customers and the addition of new customers. And the object of this adjustment is to adjust to the end of test year conditions, so that the universe is truly representative of the number of customers that are then on the system and their level of use.

Consistent with the rate making bases of an end-of-year snapshot condition.

Q But the effect of your estimate which indicates for the residential class a decrease in growth per average customer means that our portion of the unit costs per KWH of this rate increase, I think are larger than a class, let's say whose growth has increased. Am I right or wrong?

MR. HALL: Could I have that question reread? I didn't catch it.

(The question was read by the reporter)

THE WITNESS: No. This D-3 does not affect the assignment of the increase to residential class. D-3 affects the total revenue assignment to the growth

adjustment shown on A-5. At the bottom of all of those columns on A-5.

You will notice the last number before the total says plus additional revenue from growth adjustment. D-3. And that's an increment of 6,765,000.

At the bottom of column 6, which is the total for all classes.

(Transcript continues on next page)

9-1

A (Continued) You see that total on D-3A, 6,765,000, and that is simply carried forward to page A-5 and added to the base revenue column of column six.

That is further increased by the average increase to 7,449,000, representing the increment of the increase that would be applicable to that growth adjustment revenue, namely $684,000 shown in column eight.

Q Perhaps I am not following you. Let me make sure. If I am or am not, let's see.

That adjustment on D3B which is carried over to the DPS Exhibit, column 6 on A-5, that has no impact on residential rates alone. It impacts on all user's rates equally?

A Right, and is considered as a part of the total revenue that will be achieved from this rate increase at the bottom of column eight, 122,731,000.

MR. DASENT: Your Honor, thank you. That is all I have.

THE ADMINISTRATIVE LAW JUDGE: Fine.

MR. SEGAL: Your Honor, if I may, there are two brief questions that I forgot to ask earlier that would just take a brief moment.

BY MR. SEGAL:

Q Mr. Williams, earlier this morning you testified that the company is preparing a study concerning an initiation

9-2

of service charge; am I correct?

A We have been asked by the Commission Staff to provide an estimate of our cost to provide service to a new customer, residential customer requesting service on our system.

Q You answered one of my questions, by whom you were asked, and that was the Commission Trial Staff?

A Yes.

Q Is that in a formal interrogatory?

A I don't believe it is, no.

MR. HALL: I don't believe.

MR. JOHNSON: I don't recall that that is in the form of a formal interrogatory. It is an informal request.

MR. SEGAL: When that information is ready, could we be provided with a copy of that, please?

THE WITNESS: Sure.

MR. SEGAL: Thank you, Your Honor.

MS. BUSH: All parties?

MR. HALL: We will treat it as a formal interrogatory.

THE ADMINISTRATIVE LAW JUDGE: Okay. Nothing further, we will stand adjourned until 9:30 tomorrow morning.

(Whereupon, at 4:35 o'clock p.m., the proceedings were recessed.)

C E R T I F I C A T E

I hereby certify that the proceedings and evidence are contained fully and accurately in the notes taken by me during the hearing of the within cause before the Pennsylvania Public Utility Commission and that this is a correct transcript of the same.

MOHRBACH & MARSHAL, INC.

BY Ray E. Sweigart
Official Reporter

BY Eugene W. Holbert
Official Reporter
10-23-79

REPORTED BY:

EUGENE HOLBERT, R.P.R.
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(The foregoing certification of this transcript does not apply to any reproduction of the same by any means unless under the direct control and/or supervision of the certifying reporter.)

R-7906865 P-E. RCW-3 HS-10-25-79 E. Hollent

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA PUBLIC UTILITY COMMISSION
P. O. BOX 3265, HARRISBURG, Pa. 17120

July 31, 1979

IN REPLY PLEASE REFER TO OUR FILE

R.I.D. 438

DOCKETED
INVESTIGATION
OCT 25 1979
Docket A

R. C. WILLIAMS
AUG 2
FILE:

Mr. Walter R. Hall, Esquire
2109 Fidelity Bank Building
123 S. Broad Street
Philadelphia, Pa. 19109

RECEIVED
AUG 9 11 24 AM '79
SECRETARY'S OFFICE
PUBLIC UTILITY
COMMISSION

Pennsylvania Public Utility Commission
v.
Philadelphia Electric Company

Dear Mr. Hall:

On February 5, 1979 the Commission's order in R.I.D. 438 was entered. By order entered March 9, 1979, the Commission reconsidered its February 5, 1979, order regarding the structure of the HT and PD rate schedules and permitted the parties twenty days in which to submit briefs.

At the Public Meeting held on April 19, 1979, the Commission determined that it was not satisfied with the posture of the record regarding the design of the HT and PD rates. The Commission concluded that it would be appropriate for alternatives to be developed which might strike a middle ground balance between the Commission-ordered rate design, i.e.:

DOCUMENT
FOLDER

a. A customer charge set at an average level;

b. A demand charge set at an average level; and

c. An energy charge set at an average level,

and the Company's Alternative 1 submitted as a part of its Compliance filing, dated March 1, 1979.

On April 23, 1979 the Commonwealth Court, in its Memorandum Opinion and Order, reinstated the appeal which had been previously

stricken and noting the Commission's order granting reconsideration, entered March 9, 1979, remanded the Petition for Review.

The objective which the Commission seeks is redesigned rate schedules from which revenue derivation hews more closely to cost incurrance at various demand levels and load factors. Accordingly, we provide the following observations and directions:

1. As to both the HT and PD rate schedule customers, we believe that some reasonable strata should exist as measured or determined by demand (KW) levels. Consequently, you are directed to segregate the customers served under each schedule into groups which might be best described as low, median or average, and high demand customers. In this regard the demand distribution of customers is required in both graphic and tabular form on a maximum annual demand basis, by voltage level.

2. Regarding determinations which have been reached on the diversity factors of customers based upon load factor (Bary curve), in addition to a statement explaining these factors, the following supporting data is required as to each result or conclusion utilized:

   a. As to each sample, the time period of the test, i.e., May - September 1976.

   b. A statement (number) of the universe sampled in each sample.

   c. The sample size in each sample category.

   d. A statement regarding the statistical reliability of each sample and the confidence level of the result.

   e. A statement or description of the sample selection criteria of each sample group.

3. Additional data which is required is:

   a. A bill frequency analysis for each rate schedule for the test year ending December 31, 1977 and the year ending December 31, 1978.

   b. The detail regarding the computation of energy costs.

   c. The detail regarding the computation of customer costs at various demand levels and delivery voltages.

d. The detail regarding the computation of demand costs by demand levels and voltage levels, with and without load factor considerations.

e. A tabulation of customers by load factor and demand levels, sequentially, i.e. load factor sequence and demand levels as a secondary sequence.

f. The converse of the above, i.e., demand level sequence with load factor as a secondary sequence.

4. In designing alternative HT and PD rate schedules it is suggested that customer charges be blocked by demand levels, thus avoiding the placement of customer costs in demand charges.

5. Alternatives should also be directed to the subject of demand costs increasing with load factor. To the extent that there might be a theoretical, but non-existent 20% load factor customer at the 5 MW level, the cost incurrance line should be adjusted accordingly for the absence of the non-existent customers.

6. To the extent that coincidence factors at various load factor levels are seasonably variable, these variations should be provided in both graphic and tabular form; by demand levels as previously described. A reconciliation or explanation of how seasonably varying coincidence factors are combined into a level monthly demand cost charge is also required.

7. Provide an explanation of, and justification for, a declining block demand charge if provision is made therefor in the alternative(s) proposed.

You are directed to submit your responses not later than October 1, 1979. If any clarification or guidance is needed, feel free to seek it.

This letter is being served upon all the parties of record in R.I.D. 438, as shown on the attached service list. A copy of your response to this letter is required to be served upon each party at the time of your submission to the Commission.

It is currently contemplated that, at an appropriate time after your submission, an informal conference of the parties will be convened, under the auspices of the Commission Staff, in order to discuss the information provided and to chart a course for further proceedings in this matter.

Very truly yours,

William P. Thierfelder
Secretary

Attachment

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October 1, 1979

William P. Thierfelder, Secretary
Pennsylvania Public Utility
Commission
P. O. Box 3265
Harrisburg, PA 17120

Re: Pennsylvania Public Utility Commission
v.
Philadelphia Electric Company, R.I.D. 438 (1979)

Dear Secretary Thierfelder:

This letter responds to your letter dated July 31, 1979 in which you request that the Philadelphia Electric Company develop alternative Rate HT and PD rate schedules. As stated in your letter, these alternatives should "strike a middle-ground balance" between the Commission-Ordered rate and the Company's Alternative 1 Rate. The Company is also requested to supply certain data employed in developing the cost to serve these rate classes.

Accompanying this letter as Exhibit 1 is the Company's response to the specific data requests which have been posed. Enclosed as Exhibit 2 are copies of the Company's proposed Rate PD and HT tariff sheets as contained in its Supplement No. 6. This Supplement is presently under investigation at Docket No. R-79060865. These rate schedules contain the rate form alternative which is proposed by the Company in response to your letter. There is also enclosed copies of the Company's presently effective HT and PD rate schedules (i.e. the Company's Alternative 1) and the schedules filed by the Company in compliance with the rate structure directive in the Commission's Order. Please note that the Supplement 6 rate schedules are designed to produce a greater revenue level than are the Company's Alternative 1 and the Commission-Ordered rates. The former are designed to collect the claimed revenue requirement at Docket No. R-79060865, whereas the latter are designed to collect the R.I.D. 438 approved revenue

Supplement 6 rate form includes a separate customer charge, two demand charge blocks and three energy charge blocks. Demand charges are collected under the rates by means of both the blocked capacity charge and the blocked energy charge. The proposed rate is a "middle-ground balance" between the Commission-Ordered rate and Alternative 1 in that it adopts a customer charge and reduces the number of demand charge blocks (Rate HT only) both as envisioned in the Commission-Ordered rate.

The Company opposes rate structure alternatives such as those referenced in paragraphs 4 and 5 of the July 31 letter. As explained more fully in the enclosed Exhibit 1, the blocking of customer charges by demand levels is arbitrary as customer costs do not vary on the basis of demand. Over the next several rate cases, if it is the Commission's desire, all customer costs can be removed from demand charges and stated in a single customer charge. The Company's proposal takes a major step in this direction, but in order not to impose too great a change upon the Rates' structure, does not seek to implement a fully compensatory customer charge in one step. Also as noted in Exhibit 1, blocking the demand cost is not a feasible or desirable method of tracking demand cost incurrence. To track costs through this mechanism, if possible at all, would require an unduly large number of demand blocks. A far better mechanism, employed by the Company in its present and proposed Rates PD and HT, is the recovery of demand costs through blocked energy charges.

Sincerely yours,

Walter R. Hall II

WRH/pam
Encl.

Response to Request for Information from Pa.PUC (Letter Dated July 31, 1979) In Regard to Rates HT and PD

Item #1

The number of customers by demand interval based on maximum annual demand are not readily available; however, these data are available for the months of July and December. These data are shown for Rate HT (customers served at high tension voltage) and Rate PD (customers served at primary voltage) for successive demand intervals that represent low, median, average and high demand customers.

Rate HT			Rate PD		
Demand Interval	Number of Customers July 1978	December 1978	Demand Interval	Number of Customers July 1978	December 1978
0-200 kW	363	431	0-100 kW	1,400	1,687
201-800	868	892	101-150	746	769
801-1800	412	386	151-200	517	461
over 1800	255	218	over 200	1,088	826

Item #2

The relationship between load factor and coincidence factor has been established by actual customer data. The relationship indicates that as load factor increases there is a general, but not linear, increase in coincidence factor. Thus, the maximum power requirements of a group of customers increases as the load factor of the group increases. This fact can logically be deduced since as load factor increases there can be less diversity in the use by the customers, until at 100% load factor there can be no diversity. The coincidence factors are used to determine the maximum diversified demand of a group of customers.

The coincidence factors used by Philadelphia Electric Company for the development of cost curves are based on data from approximately 2,100 commercial and industrial customers. The data were obtained during the summer of 1974 and the winter of 1974-75. Individual customer data were obtained

from eight utilities including Philadelphia Electric Company. The customer data provided by Philadelphia Electric Company were obtained from all customers with demands recorded on magnetic tape.

Item #3

There are no bill frequency analyses available for Rates HT and PD.

The calculation of the demand, energy and customer costs are shown in Appendices A and B for Rates HT and PD, respectively. The demand costs are expressed as unit costs at the times of the system and class peaks. The unit costs do not vary with demand level or load factor. The customer costs do not vary with demand level. The customer costs include only those costs that are required to serve customers regardless of the demand level. Costs that are incurred to satisfy demand requirements are included in the demand costs.

Appendix C shows a tabulation of customers by demand interval and load factor. The data shown are for July and December 1978.

Item #4

As explained in Item #3, customer charges do not vary with demand level; however, under the present rate structure such charges are included in the demand prices. The proposed rates currently filed by Philadelphia Electric Company (Supplement #6 - Tariff 25) take the first step in removing the customer costs from demand prices by introducing a separate customer charge. This customer charge is the same for all customers regardless of demand level.

Item #5

Total demand costs increase with load factor as shown by the tabulation of coincidence factors on page 3. However, it is impractical to block demand charges to recognize these incremental increases in demand costs as load factor increases. The only practical solution is to set the energy prices and blocking to follow the slope of the cost curve over the whole range of load

factors and thus, include varying amounts of demand related costs in each of the energy prices. Unless the energy prices are set in this manner, it is impossible to design a rate that will recover costs equitably for the range of load factors. The costs and the rates must recognize that as load factor increases there is necessarily an increase in coincidence of demand, thus, an increase in total demand related costs. The monthly demand charges are set to recover the demand related costs that are not recovered in the energy price blocks and to satisfy the revenue requirements of the class-of-service. The customer costs can be separately stated as proposed in RID #865 or included as a part of the demand charges as they are in present Rates HT and PD.

Cost curves are developed for selected demand values over the entire range of load factors. The fact that there may not be customers at any given load factor has no effect on the costs-to-serve customers who actually exist at other load factor levels.

Item #6

Based on data from the 1974 study referred to in Item #2, the relationship between load factor and coincidence factor does not vary significantly from summer to winter as demonstrated by the curves shown in Appendix D. The values used by Philadelphia Electric Company for the development of cost curves are the average of the summer and winter data. These values are as follows:

Hours Use	Coincidence Factor
0	0
50	0.266
100	0.432
150	0.558
200	0.660
250	0.730
300	0.778
400	0.829
500	0.854
600	0.907
700	0.969
730	1.000

Item #7

A declining block demand charge is required when customer costs are recovered in the demand pricing. The fixed customer cost, in dollars per kW, declines as the demand increases. For example, if the customer cost is $100, the cost that must be included in the demand price for a 25 kW customer is $4.00/kW. For a 25,000 kW customer, the cost included in the demand price in only $0.004/kW; therefore, it is necessary to use a declining block demand charge. If the customer costs are recovered by a separate customer charge, a single demand charge can be used. Philadelphia Electric Company has taken a first step toward removing the customer costs from the demand price in the proposed rates currently filed with the PUC.

PHILADELPHIA ELECTRIC COMPANY - ELECTRIC OPERATIONS
HIGH TENSION CLASS OF SERVICE
TOTAL ANNUAL UNIT COST-TO-SERVE BASED ON
TWELVE MONTHS ENDED 12/31/78

	TOTAL CLASS	COST COMPONENT: DEMAND 4-PEAK	DEMAND CLASS PEAK	ENERGY	CUSTOMER
COST TO SERVE(1000$)					
OPERATING EXPENSE					
TOTAL EXPENSE ALLOCATED ON A SCHEDULES	37766	34761	3005		
TOTAL EXPENSE ALLOCATED ON C SCHEDULES	205433			205433	
TOTAL EXPENSE ALLOCATED ON D SCHEDULES	721				721
TOTAL EXPENSE ALLOCATED ON E & E SCHEDULES (1)	17287	15613	1350		324
TOTAL EXPENSE ALLOCATED BY F & G SCHEDULES (5)	39813	35918	3408		487
TOTAL OPERATING EXPENSE	301020	86292	7763	205433	1532
CARRYING CHARGES ON INVESTMENT OF					
RETURN ON RATE BASE (2) @ 10.0000%	84522	74083	7005	2809	1025
INCOME TAXES (3)	42610	37173	3514	1409	514
REVENUE TAXES (4)	18560	8371	775	8884	130
TOTAL CARRYING CHARGES	145692	119627	11294	13102	1669
TOTAL ANNUAL REVENUE REQUIREMENT	446712	205919	19057	218535	3201
COST FUNCTION DIVISOR		2155603	2424383	13519123	1907
TOTAL UNIT ANNUAL COST TO SERVE ($/KW,$/KWH,$/CUST)		95.52733	7.86056	0.01616	1678.5527
(1) ALLOCATION TO COST COMPONENT(SUM OF A & D)	38487	34761	3005		721
-- PERCENTAGES		0.90319	0.07808		0.01873
(2) ALLOCATION TO COST COMPONENT BASED ON ALLOCATED O.C. RATE BASE ELEMENT					
TOTAL O.C. RATE BASE ELEMENT ALLOCATED ON A	1089503	995461	94442		
TOTAL O.C. RATE BASE ELEMENT ALLOCATED ON C	28687			28087	
TOTAL O.C. RATE BASE ELEMENT ALLOCATED ON D	13503				13503
TOTAL O.C. RATE BASE ELEMENT ALLOCATED ON E (1)	31181	28162	2435		584
TOTAL O.C. RATE BASE ELEMENT ALLOCATED ON F & G (5)	-313453	-282790	-26828		-3835
TOTAL O.C. RATE BASE ELEMENT	849221	740833	70049	28087	10252
-- PERCENTAGES		0.87237	0.08249	0.03307	0.01207
(3) ALLOCATED TO COST COMPONENT ON SAME SCHEDULE AS (2) SINCE INCOME TAXES ARE PROPORTIONAL TO RETURN					
(4) ALLOCATED TO COST COMPONENT BASED ON TOTAL REVENUE REQUIREMENT					
RETURN	84522	74083	7005	2809	1025
INCOME TAXES	42610	37173	3514	1409	514
OPERATING EXPENSE	301020	86292	7763	205433	1532
TOTAL	428552	197548	18282	209651	3071
PERCENTAGES		0.46097	0.04266	0.48921	0.00717
(5) ALLOCATION TO COST COMPONENT (SUM OF A & D)	1103406	995461	94442		13503
-- PERCENTAGES		0.90217	0.08559		0.0122

Appendix A

PHILADELPHIA ELECTRIC COMPANY - ELECTRIC OPERATIONS
PRIMARY CLASS OF SERVICE
TOTAL ANNUAL UNIT COST-TO-SERVE BASED ON
TWELVE MONTHS ENDED 12/31/78

	TOTAL CLASS	COST COMPONENT: DEMAND $-PEAK	DEMAND CLASS PEAK	ENERGY	CUSTOMER
COST TO SERVE(1000$)					
L OPERATING EXPENSE					
TOTAL EXPENSE ALLOCATED ON A SCHEDULES	10252	8871	1381		
TOTAL EXPENSE ALLOCATED ON C SCHEDULES	39472			39472	
TOTAL EXPENSE ALLOCATED ON D SCHEDULES	1300				1300
TOTAL EXPENSE ALLOCATED ON D & E SCHEDULES (1)	5350	4108	640		602
TOTAL EXPENSE ALLOCATED BY F & G SCHEDULES (5)	11620	9202	1550		868
TOTAL OPERATING EXPENSE	67994	22181	3571	39472	2770
CARRYING CHARGES ON INVESTMENT OF					
RETURN ON RATE BASE (2) @ 10.0000%	23578	18544	3118	540	1776
INCOME TAXES (3)	11419	9220	1549	268	882
REVENUE TAXES (4)	4880	2154	355	1737	234
TOTAL CARRYING CHARGES	40377	29918	5022	2545	2892
TOTAL ANNUAL REVENUE REQUIREMENT	108371	52099	8593	42017	5662
COST FUNCTION DIVISOR		520388	588564	2477630	3806
TOTAL UNIT ANNUAL COST TO SERVE ($/KW,$/KWH,$/CUST)		100.11568	14.59994	0.01696	1487.6511
(1) ALLOCATION TO COST COMPONENT(SUM OF A & D) -- PERCENTAGES	11552	8871 0.76792	1381 0.11955		1300 0.11253
(2) ALLOCATION TO COST COMPONENT BASED ON ALLOCATED D.C. RATE BASE ELEMENT					
TOTAL D.C. RATE BASE ELEMENT ALLOCATED ON A	296509	254100	42409		
TOTAL D.C. RATE BASE ELEMENT ALLOCATED ON C	5397			5397	
TOTAL D.C. RATE BASE ELEMENT ALLOCATED ON D	23968				23968
TOTAL D.C. RATE BASE ELEMENT ALLOCATED ON E (1)	6726	5165	804		757
TOTAL D.C. RATE BASE ELEMENT ALLOCATED ON F & G (5)	-93218	-73821	-12435		-6962
TOTAL D.C. RATE BASE ELEMENT	239782	185444	31178	5397	17763
-- PERCENTAGES		0.77339	0.13003	0.02251	0.07408
(3) ALLOCATED TO COST COMPONENT ON SAME SCHEDULE AS (2) SINCE INCOME TAXES ARE PROPORTIONAL TO RETURN					
(4) ALLOCATED TO COST COMPONENT BASED ON TOTAL REVENUE REQUIREMENT					
RETURN	23578	18544	3118	540	1776
INCOME TAXES	11419	9220	1549	268	882
OPERATING EXPENSE	67994	22181	3571	39472	2770
TOTAL	103891	49945	8238	40280	5428
PERCENTAGES		0.48074	0.07929	0.38773	0.05225
(5) ALLOCATION TO COST COMPONENT (SUM OF A & D) -- PERCENTAGES	320877	254100 0.79189	42809 0.13341		23968 0.0747

Appendix B

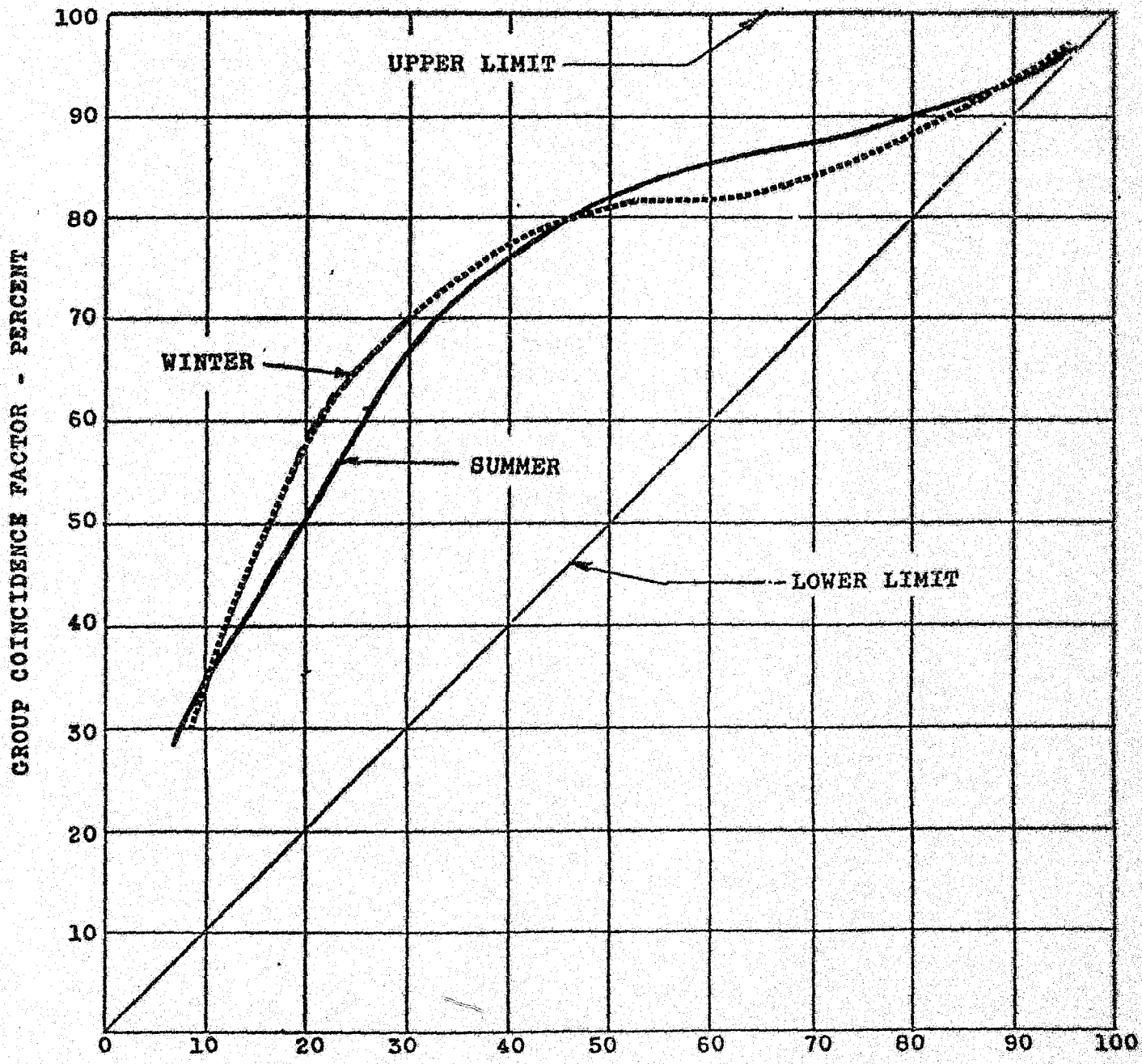
Philadelphia Electric Company
Number of Customers With Specified Hours Use of Demand
For Selected Demand Intervals

	Hours Use of Demand								
	0-100	100-200	200-300	300-400	400-500	500-600	600-700	Over 700	Total
Rate HT - July 1978 kW Intervals									
0- 200 kW	10	55	107	96	58	32	4	1	363
201- 800 kW	9	92	174	237	191	124	39	2	868
801-1800 kW	1	21	62	121	124	70	10	3	412
Over 1800 kW	1	4	19	80	83	52	14	2	255
Total	21	172	362	534	456	278	67	8	1898
Rate HT-December 1978 kW Intervals									
0- 200 kW	8	22	134	105	98	44	16	4	431
201- 800 kW	6	36	161	258	254	132	41	4	892
801-1800 kW	1	9	42	100	145	71	16	2	386
Over 1800 kW	1	4	13	53	82	39	20	6	218
Total	16	71	350	516	579	286	93	16	1927
Rate PD - July 1978 kW Intervals									
0 - 100 kW	56	376	425	265	168	65	32	13	1400
101 - 150 kW	17	163	197	206	100	50	10	3	746
151 - 200 kW	6	106	144	121	67	62	9	2	517
Over 200 kW	15	178	280	272	183	130	30	0	1088
Total	94	823	1046	864	518	307	81	18	3751
Rate PD-December 1978 kW Intervals									
0 - 100 kW	35	203	606	419	279	104	33	8	1687
101 - 150 kW	10	83	242	206	121	81	21	5	769
151 - 200 kW	5	37	149	114	70	70	12	4	461
Over 200 kW	5	63	257	216	168	79	37	1	826
Total	55	386	1254	955	638	334	103	18	3743

Appendix

Comparison of
The Average Trend in Relation Between
Coincidence Factor and Load Factor
Based on Data for all Groups of Customers Studied
Percent of Maximum Demand
Large Industrial and Commercial Customers
2117-SUMMER; 2168 -WINTER

MONTH OF SYSTEM PEAK



AVERAGE INDIVIDUAL CUSTOMERS LOAD FACTOR - PERCENT

Philadelphia Electric Company

RATE PD PRIMARY-DISTRIBUTION POWER

AVAILABILITY.

Untransformed electric service from the primary supply lines of the Company's distribution system where the Customer installs, owns, and maintains, any transforming, switching and other receiving equipment required. However, standard primary service is not available in areas where the distribution voltage has been changed to either 13 kV or 33 kV unless the Customer was served with standard primary service prior to the conversion of the area to either 13 kV or 33 kV.

CURRENT CHARACTERISTICS.

Standard primary service.

MONTHLY RATE TABLE. (I)(D)(C)

CUSTOMER CHARGE: $69.00

CAPACITY CHARGE: $4.73 per kW for the first 50 kW
$3.39 per kW for additional kW.

ENERGY CHARGE PRICES:

4.05¢ per kWh for the first 150 hours' use of billing demand
3.04¢ per kWh for the next 150 hours' use of billing demand
2.03¢ per kWh for additional use.

STATE TAX ADJUSTMENT CLAUSE and ENERGY CLAUSE apply to this rate.

DETERMINATION OF BILLING DEMAND.

The billing demand will be computed to the nearest kilowatt and will never be less than the measured demand, adjusted for power factor in accordance with the Rules and Regulations, nor less than 25 kilowatts. Additionally, during the eight months of October through May the billing demand will not be less than 40% of the maximum demand specified in the contract nor less than 80% of the highest billing demand in the preceding months of June through September.

MINIMUM CHARGE. (I)(D)(C)

The monthly minimum charge shall be the Customer Charge, plus the capacity charge for the monthly billing demand.

TERM OF CONTRACT.

Three years, and thereafter from year to year until terminated by 60 days' notice from either party to the other.

PAYMENT TERMS.

Standard.

(I) Indicates increase.
(D) Indicates decrease.
(C) Indicates change.

Philadelphia Electric Company

RATE HT HIGH-TENSION POWER

AVAILABILITY.

Untransformed electric service from the Company's standard high-tension lines, where the Customer installs, owns, and maintains, any transforming, switching and other receiving equipment required.

CURRENT CHARACTERISTICS.

Standard high-tension service.

MONTHLY RATE TABLE. (I)(D)(C)

CUSTOMER CHARGE: $75.00

CAPACITY CHARGE PRICES: Per kW of billing demand:
$4.11 per kW for the first 50 kW
$2.63 per kW for the excess over 50 kW.

ENERGY CHARGE PRICES:
3.63¢ per kWh for the first 150 hours' use of billing demand
2.75¢ per kWh for the next 150 hours' use of billing demand, but not more than 7,500,000 kWh
1.90¢ per kWh for additional use.

HIGH VOLTAGE DISCOUNT:
For customers supplied at 33,000 volts: 5¢ per kW for the first 2,000 kW of measured demand.
For customers supplied at 66,000 volts or higher: 10¢ per kW for the first 10,000 kW of measured demand.

STATE TAX ADJUSTMENT CLAUSE and ENERGY CLAUSE apply to this rate.

DETERMINATION OF BILLING DEMAND.

The billing demand will be computed to the nearest kilowatt and will never be less than the measured demand, adjusted for power factor in accordance with the Rules and Regulations, nor less than 25 kilowatts. Additionally, during the eight months of October through May the billing demand will not be less than 40% of the maximum demand specified in the contract nor less than 80% of the highest billing demand in the preceding months of June through September.

DELIVERY POINTS.

Where the load of an industrial Customer located on single or contiguous premises becomes greater than the capacity of the standard circuit or circuits established by the Company to supply the Customer, an additional separate delivery point may be established for such premises upon the written request of the Customer and billing continued as if the service were being delivered and metered at a single point, provided such multi-point delivery is not disadvantageous to the Company.

MINIMUM CHARGE. (I)(D)(C)

The monthly minimum charge shall be the Customer Charge, plus the capacity charge for the monthly billing demand, less the supply voltage discount where applicable.

TERM OF CONTRACT.

Three years, and thereafter from year to year until terminated by 60 days' notice from either party to the other.

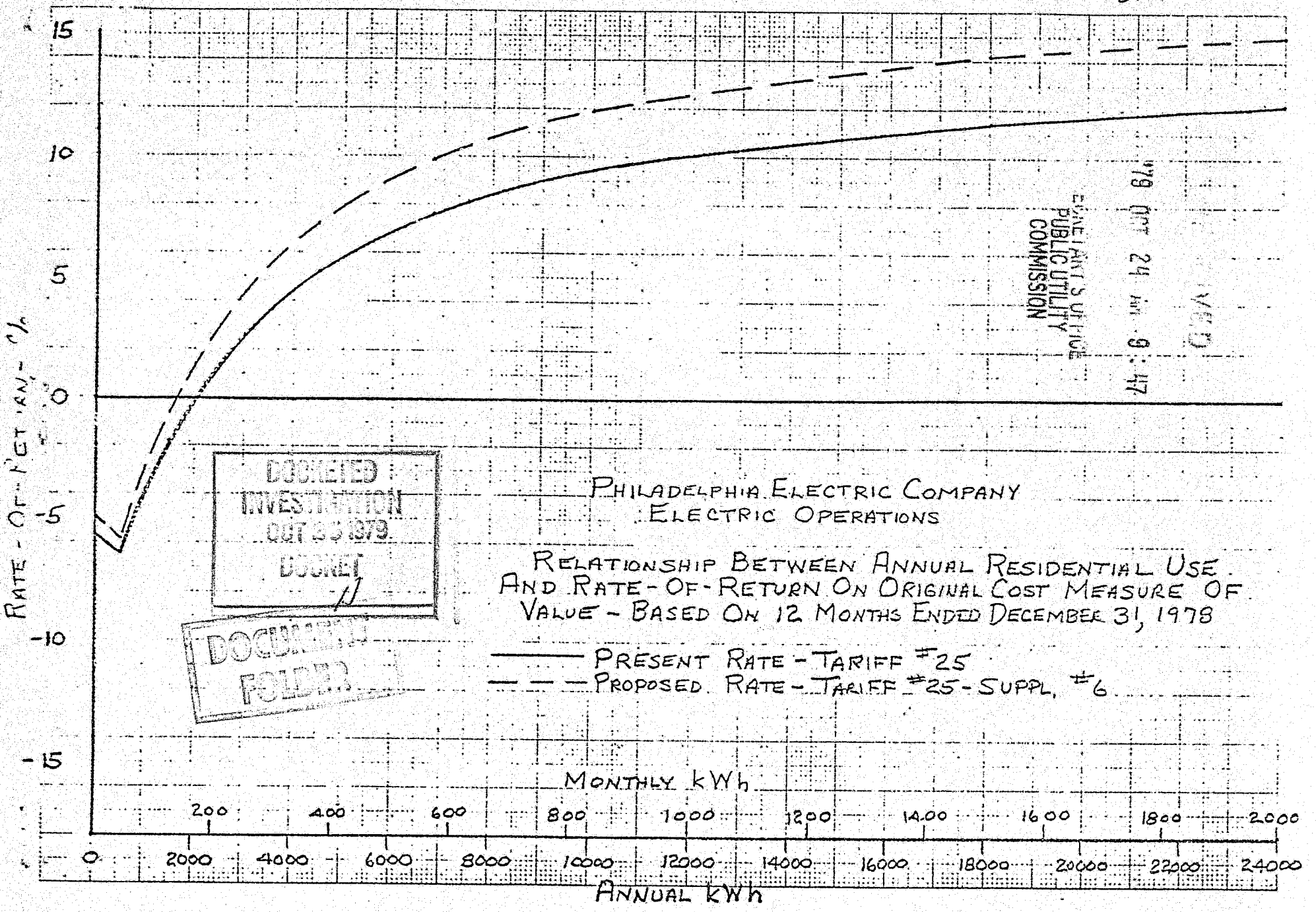
PAYMENT TERMS.

Standard.

(I) Indicates increase.
(D) Indicates decrease.
(C) Indicates change.

KEUFFEL & ESSER CO. 10 X 10 TO THE CENTIMETER 25 X 25 CM MADE IN U.S.A.

R-79060865
P.E. RCW-4
H.S. 10-25-79 P. 1
E. Holbert



PENNSYLVANIA PUBLIC UTILITY COMMISSION
OCT 24 AM 9:47 1979

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INVESTIGATION
OCT 25 1979
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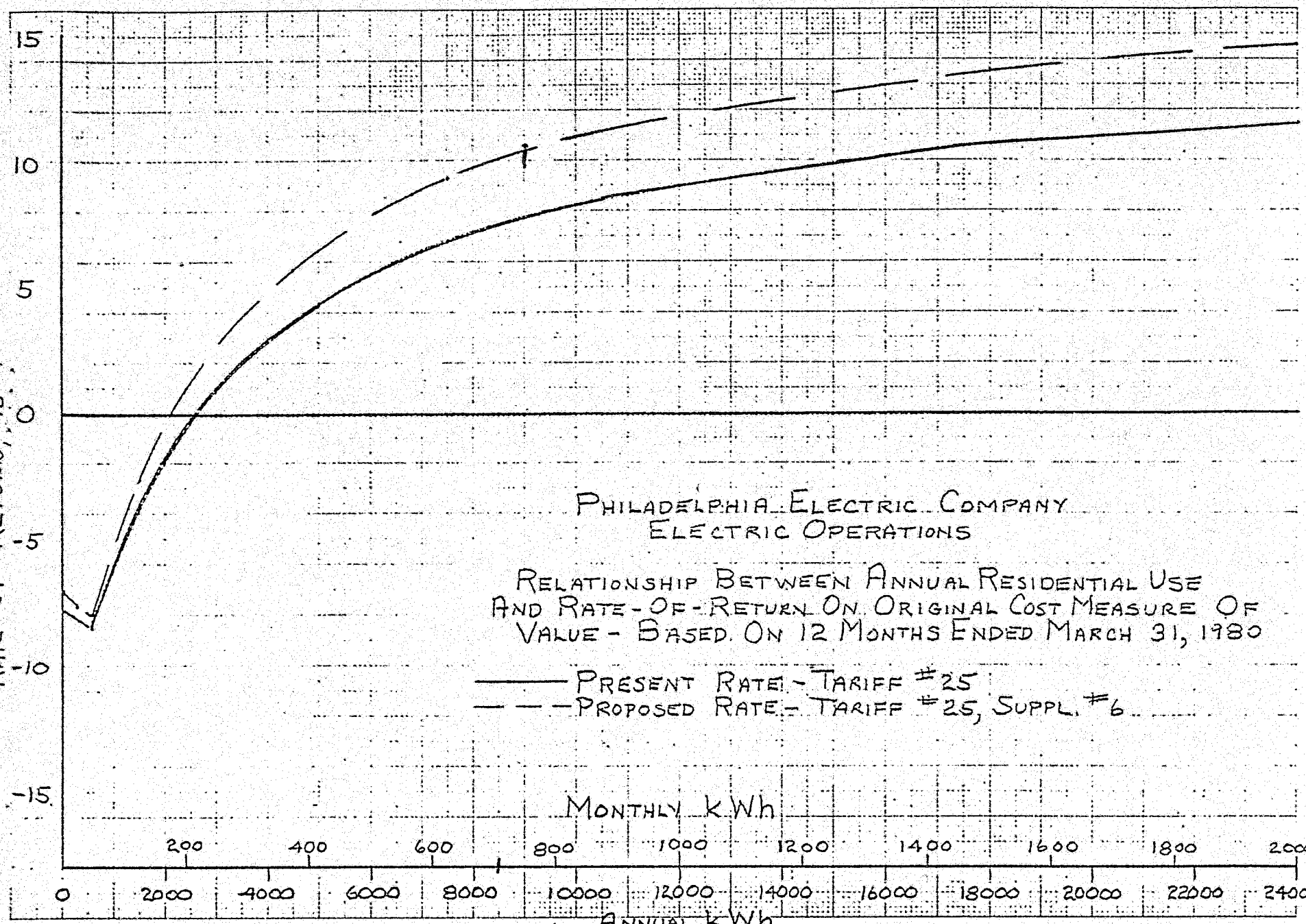
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PHILADELPHIA ELECTRIC COMPANY
ELECTRIC OPERATIONS

RELATIONSHIP BETWEEN ANNUAL RESIDENTIAL USE AND RATE-OF-RETURN ON ORIGINAL COST MEASURE OF VALUE - BASED ON 12 MONTHS ENDED DECEMBER 31, 1978

——— PRESENT RATE - TARIFF #25
— — — PROPOSED RATE - TARIFF #25 - SUPPL. #6

K·E 10 X 10 TO THE CENTIMETER 18 X 25 CM. KEUFFEL & ESSER CO. MADE IN U.S.A.



R-7906865
Phila Elec Co
STATEMENT NO. 5
Hbg
10-23-79 jes

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COMMISSION

PHILADELPHIA ELECTRIC COMPANY
ELECTRIC OPERATIONS

DIRECT TESTIMONY
OF
JOHN J. CARROLL

DOCKETED
INVESTIGATION
OCT 25 1979
DOCKET

July 1979

DOCUMENT
FOLDER

TESTIMONY OF JOHN J. CARROLL

Q. Please state your name and business address for the record.

A. John J. Carroll, 2301 Market Street, Philadelphia, Pennsylvania.

Q. By whom are you employed, Mr. Carroll, and in what capacity?

A. I am Engineer-In-Charge, Cost Section--Services Division of Electric Production Department of Philadelphia Electric Company.

Q. What is your educational background?

A. I received a Bachelor's Degree in Mechanical Engineering from Villanova University in 1952.

Q. Please describe your work experience with Philadelphia Electric Company.

A. Upon graduation I joined Philadelphia Electric Company as a junior engineer in the Station Operating Department. From 1952 to 1960 I held non-supervisory positions in generating stations. My work in these stations entailed the testing of the plant performance and working with the instrumentation and control systems within the stations. During this same period of time, I was a member of the faculty of Villanova University for two academic years. My duties at Villanova were teaching a course in Power Plant Design and Practices in the School of Mechanical Engineering. These courses were basically designed to teach the students the operation of power plant, how to determine efficiencies and related subjects.

In 1960, I was transferred to the Economy Division of the Electric Operations Department and held supervisory positions in that division from 1965 to 1974. In 1974, I was appointed to my present position as Engineer-In-Charge of the newly created Cost Section - Services Division. Since graduation from college, I have been a member of the American Society of Mechanical Engineers.

Q. Please explain the functions of the Cost Section - Services Division.

A. The Cost Section is responsible for development of the Electric Production Department budget for fuel, generation, interchange, and O&M expenses. It also monitors the actual expenditures and sources of power and compares these with the budget values and investigates the reasons for variation in any of the areas. The Section develops future production requirements and O&M expenses for studies associated with outage planning and changes in the operating mode of capacity on the system. Determination of the installed Capacity Obligations, as defined in the Interchange Agreements, is a further function of the Section. In summary, it can be said that the Cost Section has the responsibility for forecasting and monitoring the expenses incurred by the Electric Production Department and to provide management with the necessary information for economic operation of the Department.

Q. Please describe your responsibilities and experience with the Economy Division and Cost Section - Services Division.

A. While working in the Economy Division, I was responsible for the development of incremental costs used to load generating equipment for maximum economy, development of budgets and forecasts of generation fuel requirements and costs, interchange accounting practices and procedures, development of reserve requirements, and capacity rating rules and procedures. These last three items were done for Philadelphia Electric in conjunction with PJM. I have served as a member and chairman of various subcommittees and task forces of PJM, as the PE representative on such groups. As Engineer-In-Charge of the Cost Section, I have full responsibility for the implementation of duties outlined above.

Q. Mr. Carroll, have you testified in any previous rate proceedings involving the Philadelphia Electric Company?

A. Yes. I presented testimony in the Company's most recent Electric Rate Case at R.I.D. 438, in support of fuel inventory claims and various expense adjustments. In addition, I testified in the Company's two preceding Electric Rate Cases at R.I.D. 295 and R.I.D. 129.

Q. What is the purpose of your testimony?

A. I have been asked to explain the Company's claim for the fuel inventories shown in Exhibits DPS-1 and 2, page C-24 (all references are to identical pages in Exhibits DPS-1 and 2),

the adjustment to O&M expenses due to the anticipated retirement of Barbadoes Nos. 3 and 4 and Richmond No. 12 as shown on page D-11, the adjustment to O&M expenses to eliminate the budgeted operation during the March 30, 1980 test year of Salem No. 2 as shown on D-13 and to explain why the use of generating plant capacity factors do not by themselves give a true indication of a generating unit's economic and operating value.

Q. Are you familiar with the Electric Fuel Inventory values used in Exhibits DPS-1 and 2, page C-24?

A. Yes, the values of fuel inventory were developed under my supervision.

Q. Please explain the basis for the three values of coal tons used in the Exhibits.

A. The 335,000 tons of fuel inventory shown for the Philadelphia Area represents an average inventory for twelve months at the two coal burning plants. This inventory is designed to provide a 60-day supply in the event of coal shipment disruptions for Eddystone Nos. 1 and 2 and Cromby No. 1 Unit. This inventory level is required to assure maintenance of necessary service reliability based upon a consideration of the probable duration of loss of coal deliveries for various reasons. Reasons considered include rail strikes, rail equipment problems, winter weather, Miners' Holiday, and bonus-penalty provisions of contracts. The days' interruption caused by

these potential disruptions vary from 120 days for a mine strike to 2 - 3 days for track damage. The results of this study are shown in Table I. The basic inventory requirement is 300,000 tons (60-days supply of coal at conservative historic burn values), with increases and decreases about this value for the reasons noted. The claimed amount is identical with that approved by the Commission at RID 438 after elimination of the coal inventory associated in that case with Cromby Unit No. 2 as to which coal use in the immediate future is not anticipated.

The values of 168,000 tons at Keystone and 166,000 tons at Conemaugh represent 45 days supply for these stations at their average burn values. The inventory at these stations can be less than the Philadelphia Area because they are mine mouth stations and do not experience delivery disruptions of the same type or magnitude. This claim is also virtually the same as that approved at RID 438.

Q. Would you explain the basis for the oil inventories shown on Exhibits DPS-1 and 2, page C-24.

A. A similar analysis to that performed relative to coal inventories supports the claimed oil inventory levels. The reasons oil deliveries could be lost include barge strikes, refinery or terminal strikes, embargoes, river navigation problems due to ice, fog, oil spills, accidents or barge availability, trucking problems due to ice or strike and production problems at

refineries and terminals. The severity of these problems was estimated at between 30 days for barge strikes down to one day for trucking problems. The 1,200,000 bbls of No. 6 oil represent a usable inventory of 1,037,000 bbls, plus necessary dead storage, and will provide 30-days reserve at the average monthly burn for 1977 and 1978. The monthly burn either matched or exceeded this value in twelve of the twenty-four months in those two years. Moreover, this value is somewhat lower than the average burn in the two test years. Based on this analysis, it is the Company's view that a 30-day inventory of No. 6 oil is required to maintain necessary service reliability in the event of oil shipment disruptions. At R.I.D. 438, the Commission allowed the Company's claim in this same amount.

The 500,000 bbls of No. 2 oil represent 368,000 bbls of usable inventory, plus necessary dead storage, and will provide a 30-day inventory of such oil plus some additional reserve to allow the Company to take advantage of favorable marketing conditions. As the result of such capacity, the Company is able to avoid purchasing needed supply during high cost periods and thereby reduce fuel costs to ratepayers. Since January 1977, the No. 2 oil burn for a month has exceeded 200,000 bbls per month a total of seven times.

Q. What unit prices have been used for these various fuel inventory quantities?

A. The unit prices used and a detailed explanation of the manner in which these prices were developed is set forth in Exhibits DPS-1 and 2, page C-24.

Q. Are you familiar with the adjustment in Exhibits DPS-1 and 2, page D-11, to O&M expenses to reflect the retirement of Barbadoes Nos. 3 and 4 and Richmond No. 12?

A. Yes, the values shown on D-11 were prepared under my supervision.

Q. Would you explain the basis for these adjustments?

A. For Barbadoes Station, the entire test year O&M expenses (i.e. test year ended 3/31/79 and 3/31/80 as appropriate) included in Accounts 500 through 507 and 510 through 514 on page B-10 are eliminated from test year expenses. Since this entire plant is to be retired, there will be no expenses charged on account of this plant in future years.

At Richmond Station the manpower, operating and maintenance functions associated with No. 12 Unit were eliminated prior to April 1, 1978 as the result of the unit's mothballing; therefore, there are no expenses which must be removed from either test year operating accounts.

Q. On page D-13 of Exhibit DPS-2, an adjustment to O&M expenses is made to eliminate from the March 31, 1980 test year the projected operating costs of Salem No. 2 Unit. Are you familiar with this adjustment?

A. Yes, that portion of this adjustment which relates to O&M expenses was prepared under my supervision.

Q. Would you explain the basis for this adjustment?

A. For each month that Salem No. 2 Unit was expected to be in commercial operation, an analysis was made to determine if a major outage for either Salem Unit was included in the preparation. Since, for budgeting purposes, No. 1 Unit was expected to return in May 1979 and not to have its next outage until April 1980, and since No. 2 Unit was not scheduled to begin service until October of 1979, the period from October 1979 through March 1980 represents the period of common operation for which an adjustment needed to be made. The monthly values for each account were reviewed and 50% allocated to No. 1 Unit and 50% to No. 2 Unit. This percentage was selected as the work force is either identical for both units or common to both units, any startup maintenance problems on No. 2 Unit would in all probability be covered by warranty and are not reflected in the budget values and previous analysis of PE owned and operated units has shown this to be a fair and equitable allocation of costs between units at a single station. Therefore, the adjustment represents 50% of the Salem Station expenses, excluding fuel, for the period October 1, 1979 through March 31, 1980.

Q. Are you familiar with the capacity factors shown in PECO EX. 1, vol. I, Sched. 1-B-2 for the year 4-1-78 through 3-31-79?

A. Yes, these were prepared under my direction.

Q. Do the capacity factors shown represent a complete indication of the economic and operating value of these units?

A. For the base load units, namely Peach Bottom Nos. 1 and 2, Salem No. 1, Cromby No. 1, Eddystone Nos. 1 and 2, and the units at Keystone and Conemaugh, capacity factors are a true indication of the operating and economic value of these units during the periods indicated. However, since, by their nature, intermediate and peaking units are not intended for continuous operation but rather are often employed in establishing the price for more economical energy purchases from the Interconnection, the capacity factor alone does not give a true indication of the economic and operating value of these units.

Q. Doesn't the capacity factor measure the utilization of these units for generation purposes over the period under study?

A. Yes, the capacity factor does measure utilization for direct generation purposes. What it fails to recognize, however, is the equally important function of these units as replacement units for purposes of pricing the purchase of Interchange energy in accordance with applicable Interconnection Accounting principles.

Q. Would you please explain how using a unit as a replacement for purposes of Interconnection Accounting is a benefit to PECO's customers?

A. If Philadelphia Electric were an isolated Company, then its generating units would be required to supply its entire customer requirements. However, since PECo is a member of the PJM

Interconnection, and since all units on the PJM Interconnection are operated under the principles of economic dispatch, there are many hours during the year when power is available on the Interconnection at a lower cost than PECo's production cost at that time. During these hours, PECo purchases such energy from the Interconnection with resultant savings to its customers. Under the Interconnection Agreement, the price paid by PECo for this power is half-way between PECo's cost to produce this energy from its then least expensive generating unit not in operation and the production cost of the company selling this power. This pricing mechanism is generally referred to as the "split-savings" price. To the extent that PECo has low cost oil-fired steam power to act as a "replacement" in such transactions, rather than much higher cost combustion turbine power, it experiences a substantial additional lowering of energy costs which are passed on to customers.

Q. How can the value of these units as "replacements" be reflected in traditional capacity factor measurements?

A. We have developed what we call a Utilization Factor for this purpose. This factor includes not only the generated megawatthours produced during the measurement period (as measured by traditional capacity factors), but also the Interconnection accounting megawatthours in the same period (a unit's value as a replacement). This factor more accurately measures a generating unit's operating and economic value in reducing PECo fuel costs to the benefit of customers.

Q. Have you prepared a Table which shows a comparison between capacity factors and utilization factors for various units?

A. Yes, Table II attached to my testimony shows various generating units, their actual MWH generated, capacity factor, accounting MWH, total MWH and utilization factor. It is necessary to present these units in these groupings due to space limitations in the Interconnection Accounting Program which is employed in determining the utilization factor. You will note that the reheat oil units, including Eddystone Nos. 3 and 4, are above 40% utilization factor and the remaining oil-fired steam units are above 30% utilization factor. Croydon approaches 20% and the other peaking units are less than 5%. These figures demonstrate the substantial economic and operating value of these units which is not measured by simple capacity factors.

TABLE I

PHILADELPHIA AREA COAL INVENTORY

MONTH	TONS IN STOCK AT END OF MONTH	REASON FOR LEVEL
April	300,000	Normal 60 Supply
May	330,000	Build-Up for Miners' Holiday July 1 - 15th so as to maintain 300,000 at end of Holiday
June	390,000	
July	300,000	
August	300,000	Normal 60 Supply
September	300,000	Normal 60 Supply
October	360,000	Build-Up to 450,000 tons by December 15th to provide for historic lower deliveries in cold weather.
November	420,000	
December	420,000	Anticipated reduction to 300,000 tons by February 15th because of cold weather.
January	350,000	
February	290,000	Reduced inventory due to fewer rail cars with increased demand at lake ports.
March	260,000	
AVERAGE:	335,000 Tons	

JJC:tmg

TABLE II

STATION/GROUP	ACTUAL MWH	CAPACITY FACTOR %	NET ACCOUNTING MWH	TOTAL UTILIZED MWH	UTILIZATION FACTOR
Cromby 2	1,062,663	60.4%	6,669	1,069,332	60.7%
Eddystone 3 & 4	1,276,025	19.2%	1,444,586	2,720,611	40.9%
Schuylkill 1) Delaware 7 & 8)	1,916,905	52.6%	458,208	2,375,113	65.2%
Richmond 9	236,832	16.3%	325,265	562,097	38.7%
Chester 5/6	169,282	15.6%	255,624	424,906	39.1%
Southwark 1 & 2	401,662	12.9%	662,080	1,063,742	34.1%
Croydon CT's	314,598	9.2%	362,797	677,395	19.7%
Other CT's & Jets	207,849	2.4%	206,867	414,716	4.9%

JJC:tmg

7/17/79

ORIGINAL

Before

THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

--oOo--

In re: R-79060865, etc. - Philadelphia Electric Company. Investigation into a requested $123 million annual rate increase.

Evidentiary hearing.

--oOo--

Harrisburg, Pennsylvania

October 24, 1979

--oOo--

Pages 1214 to 1317

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MORGAN & MARSHAL, INC.
27 North Lockwillow Avenue
Harrisburg, Pennsylvania 17112

Before

THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

--oOo--

In re: R-79060865, etc. - Philadelphia Electric Company. Investigation into a requested $123 million annual rate increase.

Evidentiary hearing.

--oOo--

Stenographic report of hearing held in Hearing Room No. 3, North Office Building, Harrisburg, Pennsylvania,

Wednesday,
October 24, 1979,
at 9:40 o'clock a.m.

--oOo--

BEFORE: JOSEPH KLOVEKORN, ADMINISTRATIVE LAW JUDGE

APPEARANCES:

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Celotex
Union Carbide

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THE ADMINISTRATIVE LAW JUDGE: Are we ready to proceed?

MR. HALL: Your Honor, this morning we are dealing with the Salem accounting issue. By the Salem accounting issue, I mean the procedures which the company will use in the future to account for Salem expenditures to keep them separate from the company's other expense items.

We have available this morning to explain that and be cross-examined with regard to it Mr. Donald Scott, who is the controller of the company.

Mr. Scott has not been sworn, Your Honor.

DONALD P. SCOTT, called as a witness on the part of the Respondent, being duly sworn according to law, testified as follows:

DIRECT EXAMINATION

BY MR. HALL:

Q Mr. Scott, would you give your full name, your position with your company and your business address to the Reporter?

A My name is Donald P. Scott. I am controller of Philadelphia Electric Company, and the address is 2301 Market Street, Philadelphia, Pennsylvania.

Q Mr. Scott, do you have before you a document of some 15 pages entitled Statement No. 3, Direct Testimony of Donald P. Scott?

A Yes, I do.

Q And was this document prepared under your direction and supervision?

A Yes.

Q And is the material contained therein true and correct to the best of your knowledge and belief?

A Yes, it is.

Q And if I were to ask you the questions that are contained therein, would your answers be as set forth in the document?

A They would be.

Q Mr. Scott, do you also have before you two exhibits which are designated in the right-hand corner as Exhibit DPS-1 and Exhibit DPS-2?

A Yes, I do.

Q Mr. Scott, I believe in your prepared testimony you state that portions of these exhibits were prepared by you while other portions were prepared by other witnesses; is that not correct?

A Yes, it is.

Q Is the material contained in those portions of these exhibits which were prepared by you true and correct

to the best of your knowledge and belief?

A Yes, they are.

Q Finally, Mr. Scott, there has been identified for the record as PECO Exhibit 1 the five volumes of material prepared by the company in response to the Commission's data filing requirements.

Are you familiar with that material?

A Yes, I am.

Q A portion of that material, Mr. Scott, relates to accounting data, which is within the area of your responsibility in this case.

Are you familiar with that data?

A Yes, I am.

Q Was it prepared under your direction and supervision?

A Yes.

Q Without a specific designation of it, is the information provided true and correct to the best of your knowledge and belief?

A Yes, it is.

MR. HALL: Your Honor, I would ask that there be identified for purposes of this record as Philadelphia Electric Company Statement No. 3 Mr. Scott's direct testimony and as Exhibits DPS-1 and DPS-2 the two exhibits which I have described. PECO Exhibit 1 has already been identified.

THE ADMINISTRATIVE LAW JUDGE: Without objection, it will be so identified.

(Philadelphia Electric Company Statement No. 3, being document entitled "Before the Pennsylvania Public Utility Commission, Re: Philadelphia Electric Company, Electric Operations, Direct Testimony of Donald P. Scott," was produced and marked for identification.)

(Philadelphia Electric Company Exhibit DPS-1, being document entitled "Revenue, Expenses, Income and Measures of Value, 12 Months Ending March 31, 1979," was produced and marked for identification.)

(Philadelphia Electric Company Exhibit DPS-2, being document entitled "Revenue, Expenses, Income and Measures of Value, 12 Months Ending March 31, 1980," was produced and marked for identification.)

MR. HALL: Mr. Scott is available for cross-examination.

CROSS-EXAMINATION

BY MR. JOHNSON:

Q Just as a point of clarification, Mr. Scott, you would not be the Witness to discuss the implications of the arrangement for Salem -- equivalent generation of

Salem Unit No. 2?

A Would you explain what you mean by "Implications"?

Q Well, the total impact on revenue requirement from elimination, at least as the company has claimed it, the elimination of Salem Unit No. 2 from this proceeding versus the potential revenue from the arrangement with Jersey Central?

A No. I would not be the Witness. Joseph Paquette will cover that area.

Q You would not be the Witness to discuss the rate base implications, Investment in Salem Unit No. 2?

A Yes, I could cover that part of it as it is explained in DPS-2. Whether or not it is in or out of the rate base I could cover that area. But as far as the economic aspects of the contract itself, Joe Paquette will be covering that area.

Q And insofar as the expenses associated with the operation of Salem Unit No. 2, that would be Mr. Carroll, that would not be you?

A Mr. Carroll is responsible for one of the expense adjustments in our filing, yes.

Q Are you responsible --- are you the primary witness for any expense aspect of Salem Unit No. 2?

A Yes. I could cover those areas.

MR. HALL: Mr. Johnson, if I could ask for one clarification.

If you are asking who is responsible for the decision to sell Salem and for the company's treatment of Salem as a policy matter, that is Mr. Paquette.

If you are asking who is the Witness who can explain to us what the effect would be if you did it differently in terms of rate base impact, expense levels and so forth, that would be Mr. Carroll and Mr. Scott.

MR. JOHNSON: Then Mr. Scott is responsible for something more than future accounting procedures for handling Salem Unit No. 2?

MR. HALL: That is correct.

MR. JOHNSON: I did not want to go past Mr. Scott and find out that I missed somewhere.

MR. HALL: No, you have not.

BY MR. JOHNSON:

Q Insofar as the revenue impact of the contract with Jersey Central for the Salem equivalent generation, I would have to direct any questions in that area to someone other than yourself?

A I would direct those to Mr. Paquette, the revenue impact question.

MR. BURGRAFF: Would you mind if I interrupt for a second? Can we go off the record?

(Off record discussion.)

MR. JOHNSON: I have no questions at this time of this witness, Judge.

THE ADMINISTRATIVE LAW JUDGE: Mr. Burgraff?

BY MR. BURGRAFF:

Q Mr. Scott, you may not be the witness to answer this question. We received from the company today an answer to one of our interrogatories, it was answered as GI-16, Set IR-2.

MR. BURGRAFF: Does the company have a copy of that available for Mr. Scott's use?

MR. HALL: I am informed that we do not have a copy of it. Can Mr. Scott review it over your shoulder?

MR. BURGRAFF: Sure.

For the benefit of the record, the question was, the interrogatory posed read: For each of the 12 months ending 12-31-78, for each past and future month of 1979, and every month thereafter until the close of discovery in this case, please provide the following, and there was a list of nine items.

BY MR. BURGRAFF:

Q Is that correct, Mr. Scott?

A Yes, nine items.

Q Now in the response thereto, data was provided for five of those nine items. Data was not provided for four of those nine items. Those four items were notes to financial

statements, CWIP by account on a monthly basis, sources and uses of funds on a monthly basis, and utility plant by account on a monthly basis; and the answer given was that that data is not available.

I just want to clarify for the record, does that answer imply that the company does not keep those accounts? Is the import of it/is not available or that they just do not exist?

MR. HALL: Do you mean on a monthly basis?

MR. BURGRAFF: Yes.

THE WITNESS: This is the first I have seen this.

BY MR. BURGRAFF:

Q Yes, I understand that.

A Yes, and I believe the answer is that we do not keep this kind of data on a monthly basis. That is why it is not available.

Q I see, but the other data is available on a monthly basis?

A Right, and we have apparently supplied that data. What was available on a monthly basis we supplied.

Q May I ask you if this is available on other than a monthly basis?

A I believe most of this information that we say is not available on a monthly basis is available on an

2-3

annual basis, calender year basis.

Q So that it is aggregated?

A That is right.

Q Mr. Scott, I have one or two questions concerning the submittal by the company of its actual experience in the future test year for the year ended June 30, 1979. Are you the person I could direct those questions to?

A Yes.

MR. BURGRAFF: Does that have an exhibit number?

MR. HALL: No, it does not and should have. Could I break in and identify that as an exhibit at this time? If you wait until a copy is provided for Mr. Scott, we will provide copies for the record. I believe it has been distributed to all parties.

BY MR. HALL:

Q Mr. Scott, do you have before you a document which is the comparison of actual expense experience to projected budgeted expense experience for the three-month period ended June 30, 1979?

A Yes, I do.

Q Was this document prepared under your direction and supervision?

A Yes.

Q Is the information contained therein true and

correct to the best of your knowledge and belief?

A Yes, it is.

MR. HALL: Your Honor, I would ask that this document be identified for purposes of this record as Exhibit DPS-3.

THE ADMINISTRATIVE LAW JUDGE: Without objection.

(DPS Exhibit No. 3, document entitled Actual Experience in the Future Test Year Quarter Ended June 30, 1979, was produced and marked for identification.)

BY MR. BURGRAFF:

Q I would like to direct your attention to the first page of that exhibit if I could, Mr. Scott. That page evidences, does it not, that for the three months ending 6-30-79 the total electric operating revenues were $2,230,000 under budget, is that correct?

A That is correct.

Q If I could direct your attention to page 6 of that document.

A Is that the title, Operating Expenses, Electric Operations?

Q Yes, taxes.

A Taxes, yes.

Q Am I correct that page indicates that federal income tax liability for the three months ending 6-30-79 is $2,945,000 over budget, that provisions for deferred income taxes are $9,794,000 over budget, and that the investment tax credit is $68,000 over budget?

A Federal income taxes, I believe, was your first question. It is $2,945,000 over budget. You said under, didn't you?

Q I believe I said over.

A It is over. What was your second item?

Q Provision for deferred income tax.

A Yes, $9,794,000 over budget.

Q And investment tax credit?

A $68,000 over budgeted amount.

Q My question, Mr. Scott, is, if you are able to answer it, given the fact that revenues are running at a pace under budget, I am at a loss to understand how these three figures, the tax liability can be at the level that they are for that three-month period in comparison to the budget.

MR. HALL: If you can't answer it at this time, Mr. Scott, you can provide it Friday if that would be acceptable to the Consumer Advocate. It is a rather technical question which involves reviewing all of the expense deductions and so forth.

MR. BURGRAFF: I would like the witness, if he could, to review the expense items and attempt to answer the question to the best of his ability. I am not going to preclude him from reviewing it in more depth.

THE WITNESS: I would prefer taking time to review all the statements and submitting an answer either in writing or next week when I am back here and get into these areas further.

MR. HALL: I think we should note that Mr. Scott limited his preparation today to the Salem matter and did not review for all of the additional matters for which he is responsible, including this budget area.

MR. BURGRAFF: Yes, I understand that, but I wanted to present the question in advance in case the witness did know.

Can we go off the record a second?

THE ADMINISTRATIVE LAW JUDGE: Yes.

(Discussion off the record.)

MR. BURGRAFF: I would like to summarize our off-the-record discussion with counsel's approval and the Judge's approval. I think we agreed we will attempt to work through this last question concerning the three-month actual update with Mr. Scott informally prior to his next testimony, if at all possible.

2-7

Given our discussion this morning concerning Salem-2 and the proper witnesses, I don't believe we have any questions for Mr. Scott in this area at this time but we reserve the right to pose those questions if they become necessary at a future time.

THE ADMINISTRATIVE LAW JUDGE: Thank you, Mr. Burgraff. Do you have any questions of this witness?

MR. FIEL: No, sir.

THE ADMINISTRATIVE LAW JUDGE: Mr. Segal?

MR. SEGAL: Your Honor, we have no questions of this witness at this time.

MR. HALL: I have no redirect, Your Honor.

THE ADMINISTRATIVE LAW JUIGE: Then we stand adjourned until 1:00 o'clock.

- - - - -

(The hearing recessed at 10:15 o'clock a.m. to reconvene at 1:00 o'clock p.m. of the same day.)

MR. HALL: Your Honor, there have been a number of questions asked throughout the proceeding with regard to when the company is going to respond to this discovery request and when they are going to respond to that.

We have reviewed the status of discovery responses over the luncheon break, and I have at this time a listing to provide as to how the company does stand. I guess we should call it a status report.

The purpose of the report is to let the other parties know what the company's view of these responses are and what we think they're still entitled to, so that if there is any discrepancy between their records and ours, perhaps we can clear that up at this time.

Now, the company has --- discovery has been moving on three levels, and the company has received 421 formal written interrogatory requests, of which we have responded to all but 38. The company has received 141 informal written interrogatory requests, of which we have responded to all but nine. We have also received some 44 transcript requests, requests on the transcript of a witness to provide data. We responded to five or six of those at this point. Most of them are due this week, and we would hope to provide responses to them by the end of this week.

Now, with respect to the Staff's data requests,

3-2

we have responded to all, or, the requirement of a response as to stay, to all but three of the requests dealing with rate structure. Those are at this point several days overdue, and we hope to respond to them as soon as possible. By "overdue" I mean it has been more than ten days since they have been asked.

As to the Consumer Advocate, we have responded to all but nine of their data requests, six of which are not yet due dealing with what we consider general information category, three of which are a couple of days overdue, one being a revenue and expense, one being a rate base and one being a tax question. All others we responded to.

With respect to CEPA, we have responded to all but 25 out of a total of 135 of those which are presently due. The 25 that we have not responded to were due yesterday. We would have to have those as soon as possible, if by the end of the week, we will seek to do that.

There are, in addition, about 20 more which are not due until next week. That is the ---

MR. DASENT: We would note the requests on the transcript as well.

MR. HALL: You have requests on the transcript which we owe you. I believe we only responded to two or three of your requests of the transcript at this time. We

are hoping to get those to you by the end of this week if we can, otherwise as soon as possible.

That is the extent of my status report. I would note that of the unanswered questions that are overdue, they are overdue only by three or four days at this point.

THE ADMINISTRATIVE LAW JUDGE: Thank you, Mr. Hall.

MR. BURGRAFF: If I might, Your Honor, I don't want to belabor this point because I am not (pause) --- I will leave it at that.

However, I would note that I have to take some issue with Mr. Hall's characterization of three or four answers outstanding from our interrogatory Set No. 4 as only being a couple of days overdue.

I transmitted these interrogatories to Mr. Hall's office by airborne. They informed me his office received them on Friday, September 28th, which was the day after the document was dated. We got our first responses on Monday; I got three other responses today; there are three outstanding.

I would just state that it has been more than a few days for most of those interrogatories. I don't intend to do anything formally about that. I just wanted that to be pointed out.

MR. HALL: The company has reviewed that set of interrogatories, and it's my understanding that they are all responded. Now, indeed I will admit that some of those responses were more than ten days after the questions were received, but it is our understanding that all of those have been supplied.

MR. BURGRAFF: Well, I haven't received them all, but they may have been supplied.

MR. HALL: It is our understanding they have been.

MR. SAYRE: I have one preliminary matter, Your Honor. I am distributing to the parties who are here a series of Trial Staff formal interrogatories, RE-2 through RE-14 that deal with collection and customer expenses.

MR. DASENT: Your Honor, I might note on the record at this point some of the interrogatories outstanding concern witnesses for next week, namely, Mr. Sieving and Mr. McLeod. If the company could endeavor to provide them prior to their actually appearing next week, I believe next Thursday, it would be appreciated if I could get an understanding now as to what progress you are making.

MR. HALL: We will seek to do that. We have transmitted the questions to Mr. Sieving and Mr. McLeod ---.

MR. HERSHEY: Mr. Mallard.

MR. HALL: --- and Mr. Mallard as well.

Now, there is a great bulk of written data that you have requested that we are not -- we are going to object to, we're not going to give it to you. We are going to say: Come to our office and look at it. We can set up a time to do that on Monday if you wish. This is all of the back-up material with regard to Salem. It is about yeah big. You wouldn't want to have copies of all of it.

Also, you asked for a decommissioning report with respect to Sieving and McLeod have done before. We will have copies of those that you can inspect, and I will seek to have those on Monday, if you wish to come and look at them on Monday.

With respect to the other answers, we will try and get those to you as soon as possible. It won't be before Monday.

MR. DASENT: Concerning the reports that you indicated that were requested, can those be made available on Friday if they are in your office at this point?

MR. HALL: I can check into that, yes, and I will do that. Now I don't know whether I will have them. If I have got them, yes.

MR. DASENT: And you would endeavor to contact Mr. Segal --

MR. HALL: The only one I have a question about is the decommissioning studies.

MR. HERSHEY: Another matter, Your Honor. Could we have about a very short period of time tomorrow morning first thing for argument on the motion to strike?

THE ADMINISTRATIVE LAW JUDGE: Yes.

MR. HALL: Your Honor, I don't think we need oral argument on the motion. I think we pretty well briefed it.

MR. HERSHEY: I think there are some important issues raised by the company's brief which require response.

THE ADMINISTRATIVE LAW JUDGE: I have been reading over the papers and I have some questions I would like to ask the parties also.

I guess we will stand in recess until Mr. Carroll arrives.

(Short recess.)

JOHN J. CARROLL, recalled as a witness on behalf of the Respondent, having been previously sworn according to law, was examined and testified as follows:

THE ADMINISTRATIVE LAW JUDGE: Mr. Carroll has been previously sworn?

MR. HALL: Mr. Carroll has been previously sworn and he has identified and described his exhibits, and I think ready for cross-examination.

MR. SAYRE: Your Honor, with your permission I will ask Mr. Carroll the questions that have been postponed by some of the other witnesses and then Mr. Johnson will take over for staff's major cross-examination.

THE ADMINISTRATIVE LAW JUDGE: That is fine.

CROSS-EXAMINATION

BY MR. SAYRE:

Q Mr. Carroll, from 1974 through 1976 -- and this is a question that was postponed to you by Mr. Boyer -- were funds of PECO short for maintenance?

A Yes, they were.

Q Due to that shortage of funds did the company cut back on maintenance during those years?

A The company in the period from 1974 through 1977 and to a slight extent 1978 and also in 1979 entered into a reduction in their preventive maintenance schedule due to a shortage of money availability, and also they were able to undertake this because of the high rate of capacity we had on the system and therefore minimize or eliminate any impact on

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the customers, we were able to go through a reduced preventive maintenance period during that time, and our funds expended were lower than the Electric Production Department would have liked to have had them to keep our preventative maintenance schedule going.

Q This is another question postponed to you by Mr. Boyer. He and I were discussing Exhibit VSB-2, page 18, which is a table of actual summer peak and installed and available generating capacity and we were discussing in particular the year 1971 in which approximately 19 percent of the installed capacity was not available at the time of the peak, and the question that he postponed to you is whether, in your opinion, the company's maintenance program during that period of time, given that high statistic and one just about as high for the year before and the year after, whether the company's maintenance program during that period of time was reasonably adequate.

A You are talking about the year 1971?

Q 1970 to 1972 I am making particular reference to.

A The company during that period of time was maintaining what we considered an adequate maintenance program, yes.

Q Do the figures of unavailable capacity at the time of the summer peak, ranging from 16 percent to 20

4-4

percent, trouble you during those three years?

A Anytime we have that order of magnitude of unavailable capacity it troubles us, but you must remember that forced outages are random in nature, they can come about at any time, and the fact that you get coincident forced outages on any one day is not necessarily an indication of whether your maintenance program is effective or not; you must look at the percent forced outage over a long range period.

So you always have the chance of the odds, the law of averages catching up with you, and you have high unavailability at any particular time, but that is not a good indication of whether you have a good maintenance program or not.

Q So that leaving these figures aside, you do believe that it was an adequate maintenance program back around the turn of the decade?

A That is the opinion of the Electric Production Department, yes.

Q Now, I have some questions about coal and fuel inventories which were postponed to you by Mr. Hill. Can you tell us what the maximum sulfur content of coal is that can be burned in the Philadelphia area stations?

A During the test year?

Q The historic and the future test year, yes.

A Let me give it to you in the EPA regulations and then I can approximately convert it, all right? 3.7 pounds of SO_2 per 10^6 BTU's of output of the boiler. Approximately 2.3 to 2.4 percent sulfur by weight.

Q In other words, in your opinion, that 3.7 EPA standard translates to the figure in the 2 percent range in content by weight?

A Yes.

Q When did this EPA standard go into effect?

A I can't give you the exact date. I would have to get that for you.

Q Would you agree that it was about three months ago?

A No.

Q Longer than that?

A No, this is the old standard.

Q Is there a new standard?

A Yes, the new standard which we must meet as a result of the consent order is 3.2 pounds of SO_2 per 10^6 BTU's.

Q Could you turn to page C-24 of DPS-2.

A All right.

Q Can you please define the term, design average, that is used there on the third line?

A Yes, what we mean by design average is that

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in particular in our Philadelphia area coal we have a criterion that we would like to keep 300,000 tons of coal on hand, which is a 60-day supply, in the event of interruption of supply.

In order to be able to have 300,000 tons on hand at the end of known interruption periods -- two major ones being the miners' holiday the first two weeks of July of every year and in the winter period when we have slow delivery of coal due to snow, ice and rain -- we want to come out of those periods with 300,000 tons, so if there was an interruption, at the end of those periods we have 300,000 tons on hand.

Table 1 associated with my Statement 5 shows our design levels of inventory at the end of the various months and that averages out to 335,000 tons for the year. That is the major area where the design average is different than just a regular average.

Q Is it correct to say, then, that the design average is what you want to have there rather than what you actually have there?

A That is correct.

Q How would we determine how much coal is actually on the ground at the generating sites mentioned on page C-24? Would we look at the filing requirements, Exhibit I-A-16?

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A Yes, that shows the actual price of coal at Crombie and Eddystone, which would be listed as Philadelphia area, and Keystone and Conemaugh which are separately listed.

(Testimony continues on next page.)

BY MR. SAYRE:

Q Did you make similar design average computations for your oil inventory on page C-24?

A Basic oil inventory levels are levels that we want to maintain throughout the year at approximately the same value which is the value listed.

Q Do you really have 1,200,000 barrels of No. 6 oil on hand?

A Now?

Q Yes.

A I don't have the figure we have on hand right now, but for the five months of April through August, it averaged approximately 1,140,000 barrels. August happens to be the last month I have in my hands.

Q But oil as well as coal is carried on page C-24 in the amount that you would like to have on hand rather than an attempt to measure what you actually have on hand; is that correct?

A Yes. At any time if you take a spot picture of our oil inventory, it could be above or below this depending on when the shipments come in, depending on the weekend cycle, because we do not necessarily move oil on a weekend because it is more expensive to transport it from the refineries on the weekends.

So that we would be fluctuating around these

figures, but this is our average that we would like to stay around with very little deviation.

Q Is it correct that you are using a barrel equivalent to 42 gallons of oil per barrel?

A That is a standard barrel of oil, yes.

Q On the books of PECO, what inventory costing method is used? LIFO, FIFO or something else?

A For pricing the fuel as we burn it or ---

Q No. In the balance sheet, how do you carry the inventory you have on hand? Is it correct you use actual cost?

A Actual cost.

Q Yes, do you use a last-in, first-out method or first-in, first-out?

A Average out method.

Q And under the average cost method, would it be proper on the books of PECO to value your inventory at year end prices as you have done for Keystone and Conemaugh on page C-24?

A The intent in putting these at year end values rather than average values was to predict what the cost was going to be basically at the period when we were expecting rate relief, so that we would have the cost that is going to be carried forward in the future as a result of a rate relief, rather than having the actual cost that is

in the test year, which would then be continually modified under today's economy, higher and higher as we go along.

Q So, really, your theory here for the cost is going into the year beyond the future test year end, March of 1980, to pick up these prices?

A That is a prediction for Keystone and Conemaugh, but it is not true for the number two and number six oil, which was the price in July of 1979, which is just a very little bit into the future test year. That actually would be lower than what we would expect even on the average for the test year. But it was the last price we had, and with the tremendous fluctuations in oil price and the high escalation, it was the last price we could put a firm value on.

So that the oil was probably low, Keystone or Conemaugh would be going in the year after the test year, yes, but the oil is very definitely a low value.

Q So, limiting this to Keystone and Conemaugh, these figures then are greater than what you would expect to find booked at the end of the future test year as the value of inventory?

A If we look at those two numbers, that is correct, they could be greater if our projections for what they are are exactly right. If our projections were low, they could be very reasonable. They are a projection.

Q But they are your best projections; is that correct?

A They were the best projections we had at the time, yes.

Q Do you have any corrections to make to them at this time?

A I have not looked into corrections at this time.

Q Comparing C-24 of DPS-2 to C-24 of DPS-1 and again looking at Keystone and Conemaugh, there is a pretty substantial price increase particularly for Conemaugh from the historic to the future test year.

Can you explain the reason for that increase?

A Yes. The value --- when this exhibit, C-24, was prepared, the value for the tons at Keystone and Conemaugh was developed as a single number for the entire inventory at Keystone and Conemaugh and placed in there, and if it was developed as individuals, it would have been eighteen forty-five for Keystone and thirty-four eighty-one for Conemaugh, the dollar value would have been the same. So, it was just the method of presentation.

So, therefore, actually, the higher cost we would expect at Keystone will go up approximately $9.76 per ton, where Conemaugh would only be going up $2.15 per ton.

As I say, the value on C-24 of DPS-1 is an average for the two stations. They are not exact values for each station.

If you would go back to A-16, sheet three of three ---

Q That is 1A-16, if I might interject, you are talking about?

A 1A-16, sheet three of three, and work the values out for the dollars and the tons, you would get a cost for Keystone, as I say, of eighteen forty-five, and for Conemaugh, thirty-four eighty-one.

MR. BURGRAFF: Eighteen forty-five?

THE WITNESS: Yes.

MR. BURGRAFF: Thank you.

BY MR. SAYRE:

Q Mr. Carroll, a couple of times in your last answer you talked about value of inventory rather than cost of inventory.

Now, I am a little confused about how you mean to state that in DPS-2.

Are you meaning to state a value of inventory for Keystone and Conemaugh and for the Philadelphia area of coal as of the future test year end, or are you talking about, as you discussed earlier, estimated cost for the year after the future test year?

A I think I just used the word "value" with respect to DPS-1. We are talking in C-24, DPS-2, estimated price of the fuel in inventory.

Q And that is the year after the future test year that we are talking about?

A That is at the end of the future test year for Keystone and Conemaugh.

Q Rather than during the future test year?

A That is correct.

Q And what is the reason for the large increase from DPS-1 to DPS-2 in the price of the Philadelphia area coal?

A Estimated inflation associated with the cost of coal and cost of transportation.

Q What are the minimum inventory levels required for you to reasonably run the Keystone and Conemaugh plants?

A I don't know what you mean by minimum.

The value shown there are approximately 45 days' supply.

Now, if you define "minimum," I will define the tons.

Q Isn't it correct that you did provide or the company did provide testimony as to the minimum inventory levels required for those plants in R.I.D. 485?

MR. HALL: 438.

MR. SAYRE: 438, yes.

THE WITNESS: Not to my knowledge. I could be wrong, but I don't remember it.

BY MR. SAYRE:

Q On page C-24 of DPS-2 we have some plant materials and supply calculations by Mr. Hill in which he used 13 monthly materials and supplies balances to compute the company's claim; is that correct?

A I understand that was his testimony. That is his share of this particular exhibit.

Q And when you were working on that page yourself, did you even compute monthly balances of fuel inventory along the same methodology that was used by Mr. Hill?

A I told you what we did was we did the Philadelphia area as is shown on Attachment 1 of Statement 5, and that is 12, not 13 months. The other four values are levels that we desire to maintain consistently through the year with very minor fluctuations around those values.

So, it really would not make any difference whether it was 12 or 13 months. It is not an actual level through the year. It is what we hope to be able to maintain through the year from a standpoint of providing the reliability of service.

Q But in preparing this exhibit before you came down to the methodology that you actually used, my understanding

is that somebody must have made a 13-month average calculation because ---

A If that is your understanding, I'm sorry. Your understanding is wrong. That was not done.

Q Well, let's turn to C-24A of DPS-1. I think such a calculation appears right there.

A That's dollar value. That is not ton value.

Q And are you responsible for those calculations on C-24A in ---

A No, I'm not.

Q You didn't do that?

A No, I did not.

Q Did you even look at those calculations before you developed your own methodology that you have testified to today?

A This methodology of determining inventory for fuel is not new. It is the same methodology that has been used in the last four rate cases of Philaddelphia Electric. And so, therefore, all I did was practice the same methodology as has been used in all our previous rate cases. It is not something that was just developed for this rate case.

Q I'm not accusing you of a recent fabrication, sir I am asking you if you looked at these 13 months average figures that are on C-24A before you did your other calculations.

A All right. There is a difference. You now say before I did my other calculations. Previously you said before I developed my methodology, and the methodology has been in practice for four rate cases. So, therefore, it was impossible to look at these numbers before the methodology was developed for five years ago.

Q Now we have the question cleared up.

A I did not look at those numbers before I developed those numbers in C-24.

Q You never did make such a calculation either in your historic test year or the future test year in preparing for this case; is that correct?

A That is correct.

MR. SAYRE: May I have your indulgence for a moment, Your Honor?

(Pause.)

BY MR. SAYRE:

Q Mr. Carroll, I would like to show you something that went into the record in the last case, and I think it is from Exhibit P-2A, which is Paquette Exhibit C-13. I

am looking at the second paragraph there that refers to minimum inventory levels for the Minemouth stations.

Have you seen that document before?

A Yes, I think I do remember this document.

Q How would you describe the use of the word "minimum" with minimum ---

A The use of the word "minimum" in this particular case was meant to mean 45 days.

Q And that is less than the ---

A That is correct.

Q --- sixty day supply that you testified to in this case; is that correct?

A No. Keystone and Conemaugh are still 45 days. Philadelphia area is 60 days. The difference between the tonnage in the last case and the tonnage in this case is the increased availability of Keystone and Conemaugh, therefore, the increased expected burn over a 45-day period.

MR. SAYRE: I will now yield to Mr. Johnson.

MR. BURGRAFF: Could I have the last answer read back, please?

(Whereupon, the following was read by the Reporter as requested:

"A No. Keystone and Conemaugh are still 45 days. Philadelphia area is 60 days. The difference between the

tonnage in the last case and the tonnage in this case is the increased availability of Keystone and Conemaugh, therefore, the increased expected burn over a 45-day period.")

MR. BURGRAFF: Thank you.

BY MR. JOHNSON:

Q Mr. Carroll, am I correct that your responsibility is in the area of production expenses?

A That is correct.

Q Could you give us the account numbers which would come within the parameters of your responsibility of production expenses, vis-a-vis, the uniform system of accounts?

A Five hundred through --- last account, internal combustion. 554 --- 500 through 554. Also, 555, 556 and 557.

Q I'm sorry. You say you are responsible for Accounts 500 through 554, and then you gave us additional account numbers for which you are responsible?

A 555, 556 and 557.

Q Then your responsibility would be from Account 500 through 557?

A Yes.

Q With no one being responsible for any of the accounts lying between those two numbers?

A Would you repeat that?

Q No one else would have the responsibility for any of the accounts that fall between 500 and 557?

A They are basically the production accounts, and I am responsible for the production accounts.

Q Now, with regard to the future or budgeted test year, could you go through these accounts and indicate for the record which of these accounts for purposes of the first three months of 1980, which are the last three months of the future test year, you apply one-fourth of budgeted 1980 to develop the level of expense for those first three months of 1980?

Is my question clear to you?

A Yes.

Q Okay.

A 500, 502, 505, 506, 507, 510 through 514, 517 through 525, with the exception of 518, 528 through 532, 535 through 540, 541 through 545, 546 through 550, with the exception of 547, 551 through 554 and 556.

Now, I would like to make one clarification on the question just so we're clear. You said which ones did I apply one-quarter of the budget year 1980. All those accounts I gave you I applied one-quarter of the routine budget 1980. Where it was appropriate for an outage to be in the first quarter, it was applied in the first quarter;

where it was appropriate for maintenance outage expenses to be in the second, third or fourth quarter, it was removed before the one-quarter routine expenses for 1980 were established.

If you want clarification, I will give it to you.

Q And were such modifications extensive within the accounts you have just given us?

A Basically they were in the maintenance accounts and in some cases, yes, they were extensive.

Q So, it would take some lengthy study and response on your part if I were to ask you to give us the accounts for which you made some modification because of the specific known outage or expenditure that fell within or outside of the first three months of 1980?

A It would take quite a bit of time on the record, yes.

(The testimony is continued on page 1253.)

Q Mr. Carroll, I would assume that there is certain printed data or computer data, I don't know what form it would take, which would show the activities throughout budget 1980 from which you made certain adjustments with regard to what you may consider to be an additional expenditure which fell inside or outside the first three months of 1980.

A I have work sheets associated with all of those adjustments.

Q So that that would be material that the staff could look at then?

A Yes.

Q Rather than go through it formally, perhaps we could do that to save burdening the record.

A It would save a lot of time.

Q With regard to the production accounts, would it be your responsibility for developing the 1980 budget?

A The development of the budget is a many person input procedure. It is my responsibility to assemble all of it, review it, analyze it, determine the reasonableness of it, and make recommendations to management for the acceptance of the budget. I do not prepare it all, I only review it, determine the reasonableness, and make a recommendation to management for acceptance.

Q Would there be, for instance, a plant manager or an official at each one of your generating plants who would

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give you information with regard to production expenditures?

A That is correct, the first spot is their input and we do the assembly, the analysis, and make the recommendations.

Q The budget for 1980, is that made up of monthly estimates?

A Yes.

Q So that in fact there would be 12 mini, if we can call them mini-budgets, 12 monthly budgets which comprise the 1980 calendar budget?

A Well, I would prefer to say there is a 1980 calendar budget separated into 12 unique values rather than 12 unique values total to make the yearly --

Q Well, which comes first, the chicken or the egg?

A The yearly comes first in a maintenance schedule, the yearly comes first in a projection of output, and then we break that down into monthlies. So that is the reason I would prefer to say there is a yearly with 12 segments to it rather than 12 segments to be added together.

Q On page 8 of your prepared statement, in the middle of the page where you say that the monthly values for each account were reviewed and 50 percent allocated to Unit No. 1 and 50 percent allocated to Unit No. 2, would you be talking about the monthly values which are a breakdown of the

annual budget?

A They are the 12 segments, that is right.

Q Would I be correct that the operation and maintenance expenses for each of your generating stations are separately budgeted?

A That is correct.

Q Would that also be true as between Salem Unit No. 1 and Sale Unit No. 2?

A No, it is a single budget and that is the reason we had to take this approach to determine the Salem No. 2 expenses to eliminate from the rate proceedings, because we get budgets, we develop budgets for single responsible areas, total station being responsible area, and when we had to extract that portion associated with only one unit at the station, we took the approach as outlined on page 8.

Q When, for budgeting purposes, did you commence treating Salem Unit No. 1 and Salem Unit No. 2 as being one unit, so to speak?

A (No response.)

Q Well, there wouldn't have been any budget for Salem Unit No. 2, would there?

A There is no budget presented or prepared for Salem Unit No. 1 or Salem Unit No. 2. There is a budget prepared for Salem Station.

What we had to do was review the Salem Station

6-4

budget and determine how much of that budget should be properly allocated to No. 1 and properly allocated to No. 2, so therefore we went through the year 1979 with a single budget for Salem Station.

The unit came in for budgeting purposes in October. So in October we started separating the expenses associated on the allocation procedure outlined between 1 and 2.

Q The October you refer to is October of 1979?

A For budget purposes Salem No. 2 became commercial October 1979.

Q So for the budgeted year 1979 that would only reflect expenditures for Salem Unit No. 2 for the last three months of that calendar year?

A Any additional expenses incurred because of Salem No. 2 would have been reflected in the Salem Station budget for the last three months, that is correct.

Q Mr. Carroll, could you between the historic and the future test year, the historic test year commencing April 1, 1978, and the future test year ending March 31, 1980, during that period of time, that two-year span, tell us what the activity, both actual and budgeted, was or is with regard to refueling.

MR. DASENT: Could I have that question read back?

(Question read.)

THE WITNESS: Are you talking about Peach Bottom first?

BY MR. JOHNSON:

Q I am sorry, I am talking about Salem.

A Salem only?

Q I am particularly interested in Salem.

A That is easy. There was one refueling outage associated with Salem No. 1 Unit in the future test year. There was no Salem refueling outage in the historic test year. Both actual and budget-wise.

There was some minor pre-outage expense in the actual test year associated with the one refueling outage. There is some minor pre-outage expense associated with a refueling outage beyond the future test year, in the future test year expenses.

Q When did Salem Unit No. 1 go commercial?

A Something like the 29th of June, 1976.

MR. DASENT: Seven.

THE WITNESS: Seven.

BY MR. JOHNSON:

Q For the future test year you have indicated that there is a budgeted refueling included in the budgeted expense?

A That is correct.

Q And that refueling, has that commenced as of this date?

A Yes, the refueling aspect of the outage is over as of this date.

Q Can you tell us what the budgeted amount was for the refueling?

A I can hazard a guess as to the order of magnitude but I could not tell you the exact number. I think the value for the refueling outage was budgeted at $8,600,000 total station, of which Philadelphia Electric's share is 42.59 percent.

Q Can you tell us at this point in time what the actual cost of the refueling has been?

A That figure I gave you is total outage cost for the refueling and all the rest of it.

Q What does that mean, Mr. Carroll?

A That means you do all the preventive maintenance, you do the examinations of all the valves, you do all the leak tests that are required by the NRC, you do repairs on every piece of equipment that needs repairs while the unit is down. That is what it means when we are talking about total station outage.

All I know is it is a hell of a lot more than the $8,600,000, but I have no idea what the order of magnitude is.

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Q Did it take a longer period of time than anticipated?

A The unit is still off and it came off the 3rd of April.

Q Was there a budgeted length of time estimate for the refueling?

A Twelve weeks.

Q How long has it been down?

A We are now the end of October, so that makes all of April, May, June, July, August, September, October -- seven months.

Q I would assume that there is some complication, something other than just the anticipated refueling which has caused the extended outage?

A That is correct.

Q Did that have anything to do with the Nuclear Regulatory Commission?

A Yes, there were three major reasons why the unit outage was extended, and I really can't tell you what one is keeping it off right now. Two of them had to do with the Nuclear Regulatory Commission requirements.

I should say there are three I am aware of. There is liable to be five and I just don't have the other two.

Two had to do with the Nuclear Regulatory

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requirements and the third one had to do with the modifications to the turbine.

To my knowledge, the modifications to the turbine are completely finished. The first NRC requirement, which was extensive test checking of leak tests on various valves, is completed.

The testing for seismic requirements is, to some extent, the last item to my knowledge which has to be completed before the unit can come back.

Q Was there any modification required of the turbine blade?

A We had turbine problems at Salem all along, even through the last rate case, and the manufacturer designed new blades. They were installed during the extensive outage in 1978, to the extent that the new blades could be fabricated in time. The remaining new blades were supposed to be put in an outage in 1979.

When they opened up the turbine and started putting the new blades in, they found out that they had to go even further than they had anticipated.

So in the content of, yes, new turbine design blades were being installed, yes, there were modifications to the turbines.

Q Is there any of that amount you have just referred to covered under a warranty or guarantee?

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A As of this date we have not paid any of the bills for that work on the turbine.

Q Does your last answer indicate that it is the opinion of Philadelphia Electric or its counsel that these costs should be paid for by the designer or manufacturer or someone other than Philadelphia Electric?

A To my knowledge it is the opinion of the owners and operating company that the turbine manufacturer is responsible for all of that.

MS. BUSH: Could I have that response read back?

(Answer read.)

BY MR. JOHNSON:

Q Mr. Carroll, would Salem be a nuclear generating station that would have been subject to the same design problems as Beaver Valley with regard to earthquake activity and impact on pipes and valves?

A You are getting a little bit out of my area so I really can't give you a positive response to that. I can only tell you what the NRC bulletin requested.

The NRC bulletin requested basically three things. There were three separate bulletins which were addressed to which cost money. One addressed to the arithmetic equations used in designing earthquake stresses on pipes, and there was a question of whether the vector components were

6-10

added algebraically or vectorially.

In the design that question had to be addressed and if they were not added vectorially the analysis had to be done again.

The second question by the NRC addressed the adequacy of the installation of the anchor bolts for pipe hangers and that required going back and physically testing those enchol bolts and answering to the NRC as to the adequacy and where it wasn't adequate, installing a new anchor bolt.

The third one had again something to do with stress design on the pipe hangers and that is about all I can give you on that one.

Whether Salem was like Beaver Valley, I can't say, because I don't know what was wrong with Beaver Valley. If that happened to be the one designed by Stone & Webster, this had nothing to do with the fact that Salem was designed by Stone & Webster because it was not, it was a result of Beaver Valley that everybody, regardless of who was their design, was asked to answer the NRC as a result of this, every atomic plant in the United States, and my own personal opinion is that Beaver Valley initiated the whole question.

Stone & Webster did not design Salem. We answered the exact same questions for Peach Bottom and Stone & Webster was not in on Peach Bottom.

Q Was the refueling which has just been completed

6-11

at Salem the first refueling at that station?

A Yes, sir.

Q That was anticipated or at least budgeted to be of 12-week duration?

A That is correct.

Q With regard to subsequent refuelings at Salem Unit No. 1, what would be the anticipated length of time for those?

A Eight weeks.

Q Would you anticipate that after the first refueling, subsequent refuelings would occur approximately every 12 months?

A Salem fuel cycle is designed for 12 months from start of refueling to start of refueling, so that it has a 12-month cycle including the 8-week outages for the refueling.

Q Mr. Carroll, with regard to the 12-week budgeted outage for refueling as compared to subsequent 8-week anticipated outages for refueling, what type of activity or what different level of activity is associated with that first refueling which you don't anticipate would occur during the subsequent refuelings?

A Two major things. First off, it is the first refueling, but primarily the reason for the 12 weeks was there was construction work associated with the condensers going

6-12

on simultaneously with the refueling, and that had a critical path of 12 weeks. That was the determining factor on length of outage not the refueling.

Q Have you gone through an initial refueling at Peach Bottom?

A Yes.

Q How long was that?

A Our first refueling?

Q Yes.

A I think it may have been something like 18 or 19 weeks.

Q Was that anticipated before the fact as being a 12-week refueling period?

A It was anticipated at something like 9 weeks, I think. We had basically the same type of problems at Peach Bottom that Salem has had, not the exact same problem, but you always run into NRC requirements in modifications and everything else and the first time you get the unit off is when you start making them, and we had an extended outage for our first refueling, at least on No. 2 Unit, I am not sure how long it was on No. 3.

Q Has there been a second refueling at Peach Bottom?

A We are into our fourth refueling, if I remember correctly, on No. 3 Unit now, and we are getting

6-13

ready to go into our third on No. 2.

Q Could you tell us the length of time?

A Peach Bottom No. 3 is out right now and is expected back at the end of 7 weeks. The last outage we had was 52 days, 7 weeks is 49; Peach Bottom No. 2 is due out in the spring, we are anticipating a 7-week outage. The last time it was taken out it was 39 days. It set a record in the industry at the time for minimum length of time for a refueling outage.

BY MR. DASENT:

Q Which unit was this?

A No. 2.

BY MR. JOHNSON:

Q Is there one budgeted refueling associated with Peach Bottom 2 and Peach Bottom 3 in the budgeted future test year?

A There is only one refueling associated with Unit No. 3. No. 2 Unit does not have -- wait a minute, No. 2 Unit does not have a refueling outage in the future test year. It is on an 18-month cycle.

Q Peach Bottom Unit No. 2 is on an 18-month refueling cycle?

A So is No. 3.

Q They are both on an 18-month?

A Yes.

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Q And there is no anticipated refueling of Peach Bottom Unit No. 2 falling within the budgeted future test year but there is for Peach Bottom Unit No. 3?

A That is correct.

Q Can you tell us the dollar amount budgeted for Peach Bottom Unit No. 3 refueling in the future test year?

A About $7.5 million, our share being 42.49 percent.

Q You say this has already occurred?

A We are in that outage right now.

Q You are in it now. Do you anticipate that it will be longer duration than you had originally anticipated for purposes of your budget?

A You are asking me to try and remember what it was budgeted for 14 months ago, and I really don't remember whether it was 7 week, 6 weeks or 8 weeks, but it was in that order of magnitude and is now expected to take 7.

If I were to hazard a guess, my guess would be that we budgeted for 7 and is going to take 7.

Q Assuming that there is no unforeseen occurrence which extends the outage period, about how long from now, Mr. Carroll, would you have the figures with regard to the cost of that refueling outage?

A Two and a half to three months.

Q We won't have it by the end of December?

A Part of the problem with getting total cost is back charges from vendors and things like that that are notoriously slow. So the official books will probably not be closed on that. I hope we have it by the end of December to close it out this year.

Q Now you keep an ongoing account of the expenditures at that plant, is that right?

A Yes.

(Testimony continues on next page.)

BY MR. JOHNSON:

Q And if in fact the company submits actual figures for the first six months of the budgeted future test year for comparison purposes with your budget, contained in those actual figures would be some of the expense at Peach Bottom Unit No. 3 refueling; is that right?

A First six months is through September. There will be some of the expenses, that is correct, yes.

Q I think in response to one of the questions I asked you, you indicated that one of the problems in getting a handle on your total costs is that the vendors are somewhat tardy in submitting bills to you?

A That is correct.

Q What does that mean? In other words, what would you expect them to do with regard to submitting bills and what have they actually been doing?

A Well, the outage is expected to be over on the 29th of October, which means that the majority of the major vendors we're talking about will be off site at that time, and then by the time they submit their times and everything back home, we may not see their final bills until December.

And there are two or three major vendors associated with the outage, which is considerable money.

Q Somewhere between 60 and 75 days after the

completion of the work is when you probably expect to get the bill?

A Yes. It doesn't make us too happy from the standpoint of accounting. I am not so sure how the people feel about cash flow, but from the standpoint of accounting, it doesn't make us too happy.

Q Mr. Carroll, I don't know if there have been any other exhibit designations given to the original filing with the Commission, but I am directing your attention to Volume 3 of the filing, Book 1 of two.

MR. HALL: It is Exhibit No. PECO 1.

MR. JOHNSON: The entire set of ---

MR. HALL: The entire sets.

BY MR. JOHNSON:

Q You have that book in front of you?

A Yes, I do.

Q If you would, turn to page III-A-18.

A Yes.

Q Now, talking about the future test year under Account 511 where you indicate that there will be increased activity or increased level of activity with regard to ---

A You did say Book 1 of two, III-A-18?

Q Yes.

MR. HALL: Turn back to the attachment,

Mr. Carroll.

MR. JOHNSON: On the page that I am interested in, you should find an entry under Account 511.

MR. HALL: It is on the third page in that ---

THE WITNESS: Sorry. Thank you. Yes.

BY MR. JOHNSON:

Q I see there are a number of pages the same designation. That is my fault, Mr. Carroll.

A Go ahead.

Q We are talking now about entries under the future test year ending March 31, 1980, and you see Account 511?

A Correct.

Q Now, an explanation as to the increased expenditure under that account indicates increased yard, road and rail system repairs.

Could you indicate to us at which generating stations or sites this activity will occur?

A I'm sorry, but I do not have that detail with me.

Q If you will check and provide for us at which stations this work was performed, when was it performed at these stations last and also when will this work be performed at these stations again in the future.

A Could I rephrase that last part? How frequent

do we do it.

Q That is acceptable.

A Fine. My crystal ball isn't quite that good. All right.

Q Okay. Now, still with Account 511, Mr. Carroll, you have indicated an increased level of activity with regard to dredging leading to an increase of $346,000.

Now, with regard to the dredging activity, is it correct that for the budgeted future test year, that you expect to dredge at five locations or sites?

A Yes, that is correct.

Q Now, how many different sites are there at which you dredge at one time or another?

A Eight.

Q Now, the five sites that you have or anticipate dredging by March 31, 1980, within that future test year, do you recall those five sites?

A No, I don't.

Q Can you recall how frequently you dredge at those five sites?

A Two of the sites of the eight, all right, I am not talking about these five but of the eight, two of those sites where we do some level of dredging every year with one of them having major dredging about every third year as well as its annual dredging. Let me make that three of

the eight are in that category.

Q Three of the eight there is some level of dredging activity occurring every year?

A Yes.

Q And one of those three has a major operation as far as dredging occurs every three years?

A Every three or four years.

Q Every three or four years.

A The other four of the other eight have dredging which could happen on a two or three-year cycle depending on the river flows, silt deposit and currents. And the eight probably we only see dredging about every third year.

Q You have indicated at least some level of dredging occurs every year and you budgeted for five dredging locations for the future test year.

Would I be correct in my assumption, then, three of those five comprise the three that you indicated that some dredging level is conducted every year?

A Yes, that is correct.

Q And with regard to the one site at which you indicate major dredging occurs every third or fourth year, would that be planned to occur in the future test year?

A I would have to verify that.

Q You will get back to us on that one?

A Yes.

Q Still with Account 511, Mr. Carroll, you indicate an increase of -- an expenditure level of $117,000 due to particulate modifications at Eddystone.

Eddystone consists of more than one generating unit; is that right?

A That is correct.

Q And the particulate modification, would that apply to all of the units?

A No. That would apply to the coal plant, which is one and two, and I think is was number one.

Q I'm sorry. I don't --- I am not sure I understand the last ---

A The particulate system modification would not apply to the three and four section of Eddystone. So, it would only be on the coal plant, which is one or two, and I think it was number one.

Q Oh, one or two, not one and two?

A The coal plant is one and two.

Q Yes.

A Okay.

Q But you think the particulate modifications apply ---

A I think this particular job of modifications to the particulate system was associated with number one unit.

Q Has this work been performed at this point in time?

A No, I don't think it has. If it is number one unit, it is due to happen in the outage coming up, the first quarter of 1980.

Q It is to occur in the first quarter of 1980?

A Yes.

Q And would $117,000 represent the entire cost of the particulate modifications or some incremental cost?

A This is only variation money which you are seeing here. So, therefore, it would be an incremental cost. There's very little modification for $117,000.

Q Has there been any particulate modification to Eddystone Unit No. 1 prior to this?

A It is an on-going problem with the particulate system at those stations, and there has been some, but I am not sure what we are doing this time has ever been done before, but we are always doing modification to the particulate system to make them better, repair them, modify them.

Q When was the last time you did some particulate modification?

A The number one or Eddystone Station? Number two was modified drastically two years ago. I am not sure when the last time number one was done.

Q It would have been prior to the last modification for Unit No. 2?

A Probably, yes.

Q Now, I think you indicated 117,000 is incremental amount.

Do you have a figure for the entire particulate modification expenditure?

A No, I do not.

Q Is that something that is readily determined without a lot of man hours of work, Mr. Carroll?

A Yes. I think that value would probably be readily available.

Q If you would supply that.

Now, is this type of work, this particulate modification at Unit No. 1 - we will assume it is Unit No. 1, subject to check - is this by in-house labor?

A Yes.

Q Entirely by in-house labor?

A Yes.

Q Can you indicate to me the size of the crew or composition of the people that would be involved in this particulate modification work?

A No, because I can't tell you exactly what this job is. So, I couldn't begin to tell you what the size of the crew was if I don't know exactly what the job is.

Q And not knowing the extent of the work to be performed, not knowing the number of people involved, then I would be correct in assuming you would not know what these people would be doing otherwise but for this particulate modification work?

A Some other maintenance work somewhere.

Q Well, perhaps you could check. I don't know that it requires discussion on your part with the plant manager at Eddystone or --- whoever has the responsibility for giving you those figures, perhaps you could check with that individual or those individuals and find out not only what the make-up of this crew or these individuals would be, find out what they would be doing otherwise but for particulate modifications at Eddystone.

A Let me make one statement here so that it can clarify my answer that I just gave to that particular question.

Philadelphia Electric has a very small maintenance force at each one of its generating stations and has a very large mobile maintenance force. So that when the work associated with an outage at Eddystone Station is on, the mobile maintenance force moves into Eddystone Station and does the work. And when they are not working at Eddystone, there is another outage or other work scheduled at some other station.

So that the plant manager or, in our case, the plant superintendent, if those people were not working on his outage, he really doesn't know where they are going to be working, but they are going to be working somewhere in our maintenance forces at one of the generating stations.

We do not have a maintenance force at a station which handles that station exclusively, and when there is no maintenance going on there, then we kind of loan them out someplace. We have a very small station assigned maintenance force to meet their complement and normal routine maintenance, and all major maintenance is complemented from our central maintenance forces.

Q So, you have maintenance-at-large personnel?

A That is correct.

Q These people go from station to station?

A All over the system.

Q And you would anticipate that the particulate modifications at Eddystone would be done in large part by these people that move from station to station?

A There is sufficient people brought into a station to meet the maintenance requirements in the critical path time assigned, and what we do when we prepare our maintenance schedule is we prepare a critical path maintenance so that our maintenance people are busy 52 weeks of the year and we are getting the most out of them to get

the most maintenance, and in that way we pretty much levelize our maintenance expense from year to year, yet in any one particular station, they are liable to drastically change from year to year. But the system maintenance is levelized because we keep our mobile maintenance forces busy.

Q So, in effect, what their salaries would represent would be, insofar as the total picture is concerned, would not represent any increase in the level of expenditures, but all they would show would be an increase in the level of expenditures at certain plants and a decrease of level of expenditures at other plants depending upon where they are performing maintenance work during any given year?

A That is correct.

Q So, where you indicate that there is an increase of $117,000 in incremental amounts due to particulate modifications at Eddystone, we would expect some corresponding diminution of expense compared to the preceding year at some other location?

A Unless that $117,000 represents the added additional material associated with the modification, and then we would not see it in some other account.

Q That, of course, would only be true if you had an increment in the level of materials expense? They would be using the materials wherever they were working?

A Correct. But there is a big difference between modification material and repair material as far as expenditure is concerned. It is one thing to turn around and weld pipe together in a tube failure with some welding rod, and it is another thing to install all new tubing within a boiler as far as the expenditure is concerned.

MR. JOHNSON: Would this be an appropriate time to take a short recess?

THE ADMINISTRATIVE LAW JUDGE: Yes. Let's recess until 2:15.

(Short recess.)

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JOHN J. CARROLL, resumed.

BY MR. JOHNSON:

Q Mr. Carroll, at the beginning of the afternoon when Mr. Sayre was discussing maintenance levels with you, as I recall you indicated that you cut back on preventive maintenance starting in 1974 and then later indicated that increased forced outages were not necessarily a gauge or indication of the adequacy or inadequacy of maintenance level. Am I correct in my understanding that you did make that comment?

A The question was raised, would the level of unavailable capacity at the time of the peak in 1970, 1971 and 1972 be an indication of high unavailability, and I said a particular one-shot picture is not an indication of what a forced outage level is, and how effective your maintenance program is, but you must take it over a long period of time; so therefore the fact that we had high unavailability in 1970, 1971 and 1972 at the time of the peak did not bother me when I had said that we had adequate maintenance policies at that time because it is a snapshot picture.

But if you do not keep your preventive maintenance up, then your long term average of unavailability, because of forced outages, will go up, and we have seen that experience in the later 1970's.

Q So there is a correlation between forced outages and the adequacy of maintenance?

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A Yes, there is.

Q The measure of the adequacy of maintenance, if there is such a measure with regard to forced outages, if we were to look at today with regard to forced outages, we would have to look to sometime in the past with regard to the adequacy of maintenance?

A That is correct, there is a lag both going into it and going out of it. If you reduce your maintenance, you will not necessarily see immediately an increase in forced outages. If you try and increase your level of maintenance, you will not see an immediate recovery in forced outages.

Q Mr. Carroll, do you have available to you the informal responses to staff interrogatories?

MR. HALL: Is there a specific designation you can give us?

MR. JOHNSON: It is RE-57.

MS. BUSH: I take it those interrogatory responses were distributed to all parties?

MR. HALL: No, the informals have not been.

BY MR. JOHNSON:

Q Mr. Carroll, just for the benefit of everyone else, since this is not a formal request which everyone has, the request was to provide the resource analysis or summary used in checking budget 1978 and 1979, include explanation

1-3

of major deviations. In response to that informal request four sheets of maintenance resources were provided. Sheet 1 of 4 indicates total resources, this would be total resources available, I believe, is that right?

A The total resources there are available exclusive of jointly owned units, which means that available for doing the maintenance after Peach Bottom is maintained.

Q Total resources available would be $27,754,200?

A That is correct.

Q On that same page you indicate a need for $35,285,000?

A That was the original budget submittals by all the departments, correct, all the divisions.

Q Now with regard to the calendar 1979 budget, would that reflect only the total resources available in the amount of $27,754,200 or would it reflect something other than that?

A What this is, if we look at our maintenance division, how much money in total maintenance dollars can be supported by using only our maintenance division personnel as opposed to going out and using outside trade people to complement our maintenance division. That is what we call our maintenance resources.

If our maintenance people do all of our work, that they normally do, and the only thing we job out, so to

speak, are typical maintenance account functions which are not done by our regular maintenance people. Examples would be building service equipment, elevators, air conditioners and that type of work which we have continually jobbed out; maintaining our television cameras in our generating stations and that type of thing.

Then there is a certain specific type of work associated with Conowingo and Muddy Run and our maintenance contracts on our internal combustion which are always jobbed out.

All the rest of the work, if it was done by our own maintenance people, we would have a certain amount of resources which we would then try and allocate to the various different generating stations to do their maintenance work.

If we take out the amount of manpower needed to do Peach Bottom, add in the maintenance work which is routinely jobbed out, we have $27.7 million to maintain the rest of the system. That is what that first sheet says.

Q So the balance, that $7,530,800 represents outside personnel?

A No, it represents outside personnel and the material which would be used by those outside personnel if they were brought on board.

For instance, if I have a job to do on modification of the ash system, which we just talked about,

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if I were to do that job with my own people, it would take so much labor and so much material. Traditionally we have found that the material is about 35 percent of the total job. If I were to do that job with outside people, then I would have to pay them, and if I don't do that job because I don't have the people to do it, then I save the outside labor plus the material because that job has been canceled.

So the seven and a half represents the outside labor plus the material that the outside labor people would need to finish all the jobs.

Q Your budgeted 1979 year would include both the internal and the external?

A No. The original estimates made by the stations for the amount of work that they felt was necessary, for the Philadelphia area steam stations, the hydro and the internal combustion, was $35 million. What we said is we can only support with inside people $27.7 million. If we can't go outside and hire the people then we must reduce the budget.

Now there is a difference. When we are talking budget in this rate case, it is an official adopted company budget. When you look at the word, budget, on these sheets, it is the Electric Production Department estimates of budget, it is not the official budget.

Q So we don't know what might have happened to

8-6

these figures when the official budget was adopted?

A That is right, from this sheet you don't know.

Q We don't know whether the official budget recognized thirty of this $35.3 million or twenty-seven or the full 35 million, do we?

A From these sheets you do not know. The official budget did reduce the request, I think, by something over $7.3 million of the $7.5 million that had to come out.

MR. JOHNSON: Could I have the last answer read back?

(Answer read.)

BY MR. JOHNSON:

Q So you think that the internal resources was officially adopted for budget purposes consistent with this page?

A Except for rounding it was officially adopted with respect to this page.

Q And almost all of the additional resources was incorporated into the official budget? You say 7.3 of the 7.5?

A Was dropped.

Q Oh, 7.3 was dropped?

A Was dropped.

Q So that the official budget would be perhaps close to $28 million for calendar year 1979?

A From a manpower resources for Philadelphia area hydro, internal combustion and steam plant, yes.

Q Of course, the future test year extends into 1980 which presents us with some complication with regard to the use of 1979. By going into the first three months of 1980 and dropping the first three months of 1979 with regard to these activities what did you do?

A I am not quite sure I understand.

Q You changed. What did you drop insofar as the first three months of 1979 and what did you assume with regard to the first three months of 1980 with regard to the type of activities for the maintenance division?

A The entire 1979 budget was only Philadelphia Electric maintenance department supported, so it didn't make much difference what months I dropped. I dropped maintenance division supported budget.

In the year 1980 the only major outage which was scheduled in the first quarter was Eddystone number one outage and that outage could be supported completely by our maintenance division.

So for purposes of the future test year the entire budget is Philadelphia Electric maintenance department supported budget.

Q Is it still approximately $28 million for the 12 months ending March 31, 1980?

3-8

A I don't know. I would have to add it up.

Q Are there a number of figures that you have to add up?

A That should represent the Philadelphia steam station, without Keystone and Conemaugh. I don't have it here. I could get that number for you.

Q All right, if you would, please. Now, Mr. Carroll, if you will turn to Sheet 2 of the same response, there is an entry for Henkels and McCoy near the bottom of the page.

A Yes.

Q What do they do for your company?

A They supply the labor for Philadelphia Electric in our operating department. Labor trade I guess is a better way. Our maintenance department has all the skilled trades. We do not have labor trade in our maintenance department. The people who put the scaffolds in and out of the boilers, the ones who move the equipment around from one spot to another, the typical construction labor trade, we hire them from Henkel and McCoy on an as-needed basis, because they are primarily needed during outages and it is a function of the type of outage.

So we hire them on a temporary basis rather than keeping that labor force on a permanent payroll.

If you go into a major boiler outage, the

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number you need is much higher than if you are having a minor boiler outage.

So therefore it is a high fluctuation, and in order to stabilize the work force we find it more economical to hire from an outside trade organization. That is what Henkel and McCoy labor represents.

Q Is their work normally performed during one particular season rather than another?

A The majority of themare used during the maintenance season which runs from September through April.

Q You are talking about the maintenance schedule being in the winter?

A Our scheduled maintenance season primarily runs from September through May. We do not have a major scheduled maintenance associated with steam stations over the summer period, and these are primarily used in that area.

(Testimony continues on next page.)

BY MR. JOHNSON:

Q So, you would anticipate that this company would be performing maintenance work for Philadelphia Electric during January, February and March of 1980?

A They are not performing any maintenance work. They are supplying us with manpower.

Q Okay.

A Manpower is supervised by our own maintenance people.

Q Rather than go through some of these individually, we can probably save some time, Mr. Carroll.

When you give us the figure which is comparable to the approximate $28 million figure for calendar 1979 which represents moving forward three months, could you break that down for us on a basis consistent with the response to our informal request so that we can see a comparison of the individual entries for the 12-month period ending March 31, 1980, compared to calendar, 1979?

A It is a lot of work. What it means is taking 12 month values instead of getting a computer summary value to get something like this added up for you.

I'm sorry. I don't think I can because some of our sub-accounts are not developed on a monthly basis in 1980. So that if I try to do that for 1980, what I would have to do is take a quarterly -- one-quarter of yearly

values, and to break that down to individual numbers such as we have now might not have that much validity into it.

You can only do that type of a thing when you are lumping numbers together. So, any fluctuations have a tendency to wash themselves out, such as we have done on a budget. But when you start trying to pick up an item like $1800, $1200 and $1500 and those types of things, you have a tendency to get too minute, and it would give you all kinds of fluctuation.

So, I think it would be pretty hard to give you a sheet like two of four on a test year basis.

Q It probably wouldn't require any undue hardship on the part of you or people under your supervision to give us a comparison by major items, would it, Mr. Carroll, without giving us a breakdown of all of the individual ---

A We will attempt to see what we can do as far as creating a page one of four for you.

Q All right. Now, if you will, turn to page four of the same response.

Now, the total for outside contractors and materials is about $4.8 million?

A That is correct.

Q Of that you indicate steam generating plants expense of slightly more than $1 million?

A Yes.

Q Now, that consists of entries for a number of different generating locations.

Is the activity of each similar so you can give us an explanation of the type of activity which is the make-up of the ---

A Basically the five eleven zero twenty-one hundred account. What gets charged into that, as I mentioned, are elevator repairs, unit air condition periodic maintenance, periodic inspection on the elevators, the TV cameras in the various different stations, at some of the stations the outside contractor who works on our sewage treatment plant.

To some extent there is some minor expenses associated with maintaining safety rugs in the stations where when you come in with wet feet, they are right inside the door so people don't turn around and slip and we have an accident, and it is an expense of taking --- we don't own them. We buy them from a service, and that all goes into that particular account.

It's made up of a bunch of those type of items in all of the stations. There is a difference in the level of expenditure at the station depending on the physical size of the station and the amount of activity in the station that we see, and the biggest number is Eddystone for $336,000, and it happens to be physically the biggest

station we have, with two major plants, probably ten elevators, four control rooms. That is the reason why it is bigger than any other one.

Q Now, one of the entries or one of the categories is internal combustion on that page, and the total expenditure is $2,459,000?

A That is correct.

Q There are five entries. I won't ask you about the first one. It is only a $25,000 item. The second entry is GE at Richmond. The amount is $269,000.

Could you explain what is involved with that expense?

A There are three General Electric combustion turbines at Richmond Station, and we have a maintenance contract with General Electric where they maintain the -- do the routine maintenance associated with those combustion turbines.

We also have a contract with Westinghouse to maintain the eight Westinghouse machines at Richmond Station and another contract with General Electric to maintain the eight combustion turbines at Croyden.

The cost of those contracts is a function of the amount of time they operate in a mills per kilowatt hour maintenance cost, the amount of hours thereon and administration fee associated with all of them based

on our predicted operation of the combustion turbines at Richmond and Croyden, this is the amount we expect to extend for those maintenance contracts.

The Pratt and Whitney item there is for expenditures we expected to make to repair our Pratt and Whitney machines by sending them out to outside vendors to repair the combustion turbines. And the item for the diesel is the maintenance contract to maintain generating supply diesels at our generating stations.

Q Now, the expenditures, you say, at Croyden, that is a GE contract or the Westinghouse contract?

A That is a GE contract.

Q GE. Okay.

Do you anticipate any expenditure of this nature for 1980?

A I expect an expenditure of that nature for every year that the units operate at the level they operated in this year. Ninety-nine per cent of that contract is a function of the generation we expect to get off of those machines.

Q It is a function of the ---

A Output.

Q --- KW?

A KWH output.

Q And has the KWH output of these combustion

turbines been the same each year?

A No. It varies from year to year depending on the load level, the availability of equipment, the maintenance cycles, although Croyden is considered a marginal unit and it's much more constant than the Westinghouse in Richmond are, but it is a function of the KWH output.

It's probably as true an incremental maintenance cost as you can get, and from a ratemaking standpoint, I am sure everybody would love to see an incremental maintenance cost associated with your generation. Normally it doesn't work that way, but on these combustion turbines with the maintenance contract, it actually works that way. If we produce, we have got to pay the bill at the time we produce.

MR. JOHNSON: That is all we have at this time, Judge.

But I have been informed by Mr. Clea, who is the Staff individual who is assisting me, that he has submitted a number of informal requests in the area which Mr. Carroll would have the responsibility, and some are still outstanding. So, it may be that we will need to ask some questions later.

But that is all we have at this time. Thank you, Mr. Carroll.

THE ADMINISTRATIVE LAW JUDGE: Mr. Burgraff?

BY MR. BURGRAFF:

Q Mr. Carroll, I had a number of questions in the fuel inventory area. I think that you have answered a number of them earlier on questioning from Mr. Sayre. However, I would like to pose one or two others.

On DPS-2, page C-24 --- do you have that?

A Yes.

Q Philadelphia area coal is priced at $42.50 per ton for purposes of the company's claim; is that correct?

A That is correct.

Q And does that price include the cost of coal freight and handling?

A That is the cost F.O.B. to our stations, yes.

Let me correct that answer. You said cost of freight and handling?

Q Yes.

A There is no handling associated with that. That is coal and freight only.

Q F.O.B. delivered?

A F.O.B. delivered.

Q Now, I believe Mr. Sayre asked you one or two questions as to the sulphur content of coal required for your Philadelphia station.

I believe you testified that there was an oil standard of 2.3 to 2.4 per cent sulphur by weight to these

stations; is that correct?

A That is correct.

Q And there was a new standard, EPA standard of 3.2 pounds of SO-2 for ten of the six BTU; is that correct?

A That is correct.

Q What does that transfer into as a percentage figure?

A I think it is about two, but I can't be exact on that.

Q So, you are saying EPA has applied stricter standards to your stations?

A That is correct.

Q As of when?

A The signing of the consent order in August of 1979.

Q This order was signed between what parties?

A EPA, Pennsylvania DER and Philadelphia Electric.

Q Are you aware of any other EPA actions in this area in the air quality basin which your plants are located, air quality district, I should say?

A Not to my knowledge. That is not my field.

Q Your average price per ton as listed on page C-24 of DPS-2 is basically $37.37 - would you accept that subject to check - for the three columns?

A You lost me. Would you try it again?

Q Yes. If I took an average price per ton for your Philadelphia area, Keystone and Conemaugh columns, it would be $37.37. Would you accept that subject to check?

A Subject to check, yes, fine.

Q I'm not sure if you testified to this earlier or not.

Was that developed from prior years' cost for a similar type of coal for the plants listed?

A Was that developed for prior year cost for similar type coal what?

Q For the plants listed.

A It wasn't developed as far as I know on prior year cost, no.

Q I'm sorry?

A It was not developed on prior year cost.

Q Well, by that do you mean to imply you didn't consider prior years' cost at all for that type of coal for those stations in making your estimate?

A What we did was estimated -- we received as an estimate of what it was expected we would have to pay for coal in the Philadelphia area based on the present market price anticipated escalation at the time we prepared the 1979 budget and the 1980 forecast, which was, in point

of time, early fall, 1978, and we received from Keystone and Conemaugh their projections of what the prices would be for fuel in the '79 budget and '80 forecast period, and that is what was used to arrive at the price of coal which was shown here.

Q So, when you state you received estimates, that you are only referring to Keystone and Conemaugh; is that correct?

A The other one was developed in house in Philadelphia Electric, that is correct.

Q Now, am I correct in assuming in developing your tonnage figures, Mr. Carroll, or, did you consider consumption rates in arriving at those figures?

A Yes. As I say, the Philadelphia area coal represents a 60-day supply for the three stations, and Keystone and Conemaugh represents a 45-day supply for those stations.

Q But you didn't consider any monthly consumption rates?

A I don't know what you mean by a monthly consumption rate.

Q Well, in other words ---

A Historic monthly consumption rate or ---

Q Yes. You didn't correlate your inventory on hand at the beginning of the test year with estimates of

monthly energy deliveries and consumption in arriving at your work?

A We estimate our deliveries to maintain an inventory based on our estimate of monthly consumption.

Our inventory basically does not consider a 60-day period from March 1 through April 30. It considers a 60-day period of time which could happen any time during the year and what would our burn be during that 60-day period with a reasonable availability of our units, where when you look at individual months, then you are actually taking into account the scheduled outages that you have during that period of time. So, if you are trying to maintain a 60-day supply or a 45-day supply which can be needed at any point in time, then what you have to do is take into account the number of days of reasonable availability of the machine and the level of which the machine operated, and all these being coal units operate at full load.

MR. BURGRAFF: Could I have the answer repeated, please?

(Whereupon, the following was read by the Reporter as requested:

"A We estimate our deliveries to maintain an inventory based on our estimate of monthly consumption.

Our inventory basically does not consider a 60-day period from March 1 through April 30. It considers a 60-day period of time which could happen any time during the year and what would our burn be during that 60-day period with a reasonable availability of our units, where when you look at individual months, then you are actually taking into account the scheduled outages that you have during that period of time. So, if you are trying to maintain a 60-day supply or a 45-day supply which can be needed at any point in time, then what you have to do is take into account the number of days of reasonable availability of the machine and the level of which the machine operated, and all these being coal units operate at full load.")

BY MR. BURGRAFF:

Q I believe you stated that the one factor you did change in the last case was your estimate of the reasonable availability of your units; is that correct?

A That is correct.

I think if you were to look at the final resolution of the last case, the values for Keystone and Conemaugh tonnage is the same as this. I think the sheet which we saw presented this morning to me was in the initial application of the last case. During the last case

I am pretty sure they were reevaluated to the tonnage we see here.

Q What assumption did you make in regard to reasonable availability of the units in question for this case?

A I don't have it with me, and let me say that the value of the tonnage for a 45-day supply at both stations was calculated by the operating company, Keystone and Conemaugh, and they're the ones that maintain the level, and this is our share of their level.

Q Yes, but I am interested in what I asked for basically. Are you able to supply that at some point in time?

A Would you repeat that?

Q Yes. You say you changed your assumptions from the last case as to the reasonable availability of these units. Keystone and Conemaugh you say might not have been changed, but I am interested in comparing your assumptions you made in your last rate case claim as opposed to the assumption you made in this rate case claim concerning the reasonable availability of these units and how that affected your tonnage figures.

A As I said, the tonnage figures are calculated by the operating company for Keystone and Conemaugh, and they are the ones that determine the total tonnage. This is our

share of that total tonnage.

I can get the availability factors from them and supply them to you.

Q If you could, yes.

A And that calculation was changed in the last rate case. This is not a different value from the last rate case.

Q All right. Now, what about the Philadelphia area stations?

A It has dropped from the last rate case to this value because we are no longer maintaining a coal inventory for Cromby No. 2 unit which is operating on oil.

We used to maintain an inventory of coal for 60 days supply for Cromby No. 2 in the event it had to go back on coal during the fuel crisis. We are no longer maintaining the coal inventory for Cromby No. 2. So, it has dropped from 530,000 tons to 335,000 tons.

Q So, that is the only difference?

A That is the only difference.

Q Does Philadelphia Electric Company have an estimate at future test year end for its planned inventories, both coal and oil, March 31, 1980?

A We would expect to be at the level --- with one exception we would expect to be at the level shown, and that one exception is the Philadelphia area coal and the

value at the end of March that we would be trying to get the value shown on Table 1 of Statement 5, and that would be 260,000 tons.

Q Yes. That is what you would like to do. What I am asking is: Do you have any monthly estimates on what those levels will be during the future test year?

A Do we have a monthly estimate of what the levels will be?

Q Your inventory levels. I'm assuming you don't.

A No. Only the one on Statement 5 for coal.

Q How many tons of coal does Philadelphia Electric Company estimate they will buy during the test year? And I would include your share of plants operated by other utilities.

A In other words, what is our total tonnage consumption that we are estimating during the test year? I will have to get that value for you.

Q If you would, please.

A You want that to reflect our share of the joint-owned stations?

Q Yes, whatever your liability would be in that regard.

A Okay.

Q If I can refer you to page E-10 of DPS-2, Mr. Carroll. That page lists operating expenses for the

12 months ended 3/31/1980. Under Account 501 for fuel there is a figure listed of $312,631,000.

Of that fuel expense figure for the future test year, would you be able to tell us how much of that expense is coal related and how much is oil related?

A Yes. No. I'm sorry. I can get it, but I don't have it.

(The testimony is continued on page 1303.)

10-1

Q If you would provide it, please. Mr. Carroll, to the best of your knowledge, were there any changes in the EPA rules on the sulfur content of coal that would have affected the Keystone and Conemaugh stations?

A To the best of my knowledge there were no changes.

MR. HALL: May I have that question read back?

(Question read.)

BY MR. BURGRAFF:

Q Your answer was?

A To the best of my knowledge there was no such change.

Q Do you know offhand what the EPA requirements for sulfur content for coal were at the time the estimates here were prepared for those two stations, for Keystone and Conemaugh?

A The value I gave you as the old criterion, 3.7 pounds SO_2 per 10^6 BTU's.

Q For those two stations?

A Yes, sir.

Q And the estimates were prepared the end of 1978?

A Beginning of the last quarter of 1978, yes, sir.

Q Offhand, Mr. Carroll, are you familiar with

10-2

when construction began on Salem Unit No. 2?

A No, I am not.

MR. BURGRAFF: Can we go off the record for a second?

THE ADMINISTRATIVE LAW JUDGE: Off the record.

(Discussion off the record.)

MR. BURGRAFF: I think for now that would be sufficient. We will obviously have more tomorrow.

MS. BUSH: I have about five or ten minutes worth of questions that I could either do now or defer until tomorrow.

THE ADMINISTRATIVE LAW JUDGE: Why don't we do it now. After that then we will adjourn. Let's go off the record.

(Discussion off the record.)

BY MS. BUSH:

Q Mr. Carroll, you testified earlier this afternoon in response to counsel for the Commission that Salem-1 had a planned outage for refueling and other matters beginning April 3, 1979, is that correct?

A Yes, that is correct.

Q Now when you projected initially the 7-week outage, was that for refueling and the routine preventive

10-3

maintenance and routine repairs and testing that you spoke of?

A I think I said earlier that the outage anticipated on Salem was for 12 weeks and that was for the refueling, preventive maintenance and the construction project associated with retubing the condenser.

Q Was it after the initial planning of the outage that you learned of the NRC modifications that had to be made?

A Well, the outage had been planned up until April on critical path technology to be a 12-week outage and the extension of the outage was primarily associated with the seismic NRC requirements which were not known until the outage was well into its normal duration.

Q You testified there were two basic NRC requirements that you knew of. One I take it was the seismic modifications?

A Yes.

Q And the other modification?

A The other one was a testing of valves, it was not a modification, it was a leak test on some of the valves within the station.

Q Did you learn about the requirements for the testing of the valves after April 3rd?

A That was part of the normal routine during

the outage. It was just that to meet the requirements it took a little bit longer than had been anticipated on critical path and I think that particular item may have extended the outage four or five days.

Q Do you have an estimate of how long the modifications regarding the seismic requirements entailed, what period of time that extended the outage?

A I am trying to remember from memory right now, but I think they have anticipated the unit coming back from turbine repairs, which was the one job that was extending it, sometime in mid-September. The unit is now anticipated to come back November 15 and all of that extention is seismic, or the major component critical path for that extension is seismic.

Q Did you say mid-November?

A It is now expected November 15 and the turbine would have been back September 15.

Q So from September 15 to November 15 basically was the seismic repairs?

A That is the delay due to seismic repairs. They started long before that. That is the delay on critical path due to seismic repairs.

Q The turbine repairs which youspoke of is the third reason that you know that extended the outage beyond the projected period. Were those repairs going on from April

10-5

3 to September 15?

A Yes.

Q And they were completed September 15?

A No, as I said, I think the turbine repairs would have extended the outage to September 15. That meant that the turbine repairs were done before that and you were ready to start cleaning up and do all of the necessary work to bring the unit back.

I don't know the exact date that the turbine repairs were finished but they were finished before that date so that the unit could be back on the line as of that date.

Q By September 15?

A Yes.

Q Did you testify earlier that you thought there were two other areas of work that had to be done that extended the outage?

A No, I said there may have been a couple more NRC bulletins but I wasn't sure. I knew of two.

Q Could you check for us and let us know if there were additional NRC bulletins or other reasons for the outage, and if so, what period of time those repairs or modifications or whatever occurred?

A You are basically talking now you would like to know what extended the critical path of that outage?

Q Yes.

10-6

A By critical path I meant you could have 20 jobs going on but the one that is actually causing the outage to be extended is the critical path job. You want to know if there are any items other than the ones I gave you?

Q That is correct.

Now have there been other periods during the commercial operation of Salem-1, which you testified began June 29, 1977, in which Salem-1 had been down either forced or planned outage related to the generator turbine?

A Yes, there have been two major outages, one forced and one planned outage associated with the turbine. One was in late 1977 and another extensive outage in 1978.

Q Do you have the exact dates of those?

A No, I do not.

Q Do you know the time period involved in terms of weeks?

A It is very possible that the exact dates are in the original submittal to the Commission as far as forced outages are concerned.

I don't know when it started but there was an outage that had started before 4-1-78 and it went for 1823.4 hours after that date, but I don't have the starting date on it, and that was the turbine failure.

Q You don't have the figures for 1977?

A I do not have them with me, no.

10-7

Q Would you provide that for us, please? When you gave us information of outage that began before April 1, 1978 for 1823 hours, due to turbine failure, was that the turbine blade or was that some other problem with the turbine?

A No, that is the major turbine blade failure problem.

Q When was Philadelphia Electric Company first aware that there was a problem with that turbine blade?

A The day Public Service of New Jersey first became aware there was a problem with that blade and I don't know the exact date.

Q Could you provide that for us, please? You testified earlier today that Philadelphia Electric Company had not paid any of the bills relating to this most recent outage that had to do with the turbine blade repair. Do I understand from that, are you saying by that that Philadelphia Electric Company does not intend to pay those bills in the future?

A I don't think I am in a position to answer whether we will have to pay anything on those bills or not. I did make a statement that Philadelphia Electric assumes that it is Westinghouse's responsibility, but whether we will ever ultimately pay any money or not I don't think I am in a position to say at all, and I don't know whether anybody else would be at this time.

10-8

Q Well, have you made any recommendations to the management based on your work in this area for the company in terms of production and cost that the company management pursue remedies related to the turbine blade problem through the legal system?

A I don't quite understand your question. If we haven't paid the bill, I don't know what problem there is, what remedy we have through the legal system. I think it is up to the people who are owed the money to go through the legal system to try and get us to pay.

If we just refuse to pay it, there is no legal recourse that we have to go through. We just refuse to pay the bill.

Q Well, have you made any recommendation or given any information to management of the company as to any opinion you would have from your experience in the production area as to fault in terms of the consequences and the cost that the company has incurred as a result of the turbine blade?

A There have been several discussions associated with the Peach Bottom, Salem O & M Committee and I am sure there have been several discussions associated with the owner's representatives. I have attended the Peach Bottom-Salem O & M Committee meetings.

As to the cost of the outage, there is no insurance or anything for loss of production associated with

1.0-9

any of the nuclear plants and it is impossible to obtain that type of insurance, so there is no real claim that can be put for the loss of production.

The only basic claim is for the repair of the machine. The machine is being repaired by Westinghouse people. It is being repaired with their parts and we haven't paid the bill.

Q Is Westinghouse billing you and you are not paying it or are they providing the parts and providing the labor without billing you?

A They are billing us and it is being put aside. They are billing the operating company. They do not bill Philadelphia Electric. They bill the operating company the same as all bills for Peach Bottom come to Philadelphia Electric as the operating company. All bills for Salem go to Public Service Electric and Gas as the operating company.

Q Has the company made any determination with regard to cost associated with or a result of this outage other than the direct repair costs?

A What do you mean by cost associated with the outage?

Q Are you aware of any cost consequences of having Salem No. 1 not producing electricity?

A You are talking about increased cost of production because of the nuclear plant not being on?

C-10

Q That or any others that you would be aware of in your position that would, from your perspective or your analysis, flow from the plant not operating.

A We continually monitor all outages and determine the increased cost of operation associated with those outages, and I am sure in the process of that determination the Salem No. 1 outage is evaluated as well.

Q With regard to increased production expenses that the company incurs when Salem No. 2 is not running for a four-week period, have you made a calculation as to what that would be?

A What it would cost in increased production expenses? And I take by production expenses you mean fuel and interchange expenses?

Q Well, you can define the term. You used it earlier. Is that what you had in mind when you said increased production expenses?

A Fuel and interchange expenses, because that is the only increase in expenses you have when the unit is down.

Q Okay, what on a --

A I don't have an exact number on Salem, but I would imagine the Salem number for increased for fuel and interchange expenses is very similar to the Peach Bottom number for increased fuel and interchange expenses, comparable

10-11

size units, comparable fuel costs. Peach Bottom full unit outage cost approximately $600,000 a day increased fuel and interchange expenses, full unit.

Q In the last rate case there were discussions about the effect on the company, financial impact on the company of Salem No. 1 being in commercial service but not being in rate base, and there is a statement to the effect in the order that the company claimed depreciation and operating expenses attributable to Salem No. 1 were accruing at the rate of $1.3 million a month and were not reflected in current rates.

How does that compare to the figure that you have given us? Are those different things and would the expenses referenced in that sentence overlap with the expenses you have given us and include different things? Or how would you respond to what that would be?

MR. HALL: Objection, Your Honor. I don't see the relevance of the question. For that matter I don't understand the question.

MS. BUSH: Well I am attempting to understand what the Commission was quantifying here by this sentence, and if it meant expenses that are being incurred by the company that are expenses either totally different from fuel and interchange or fuel and interchange plus other expenses. That is what I am trying to find out.

C-12

MR. HALL: You mean what the Commission intended in their statement?

MS. BUSH: Yes.

MR. HALL: I don't think Mr. Carroll can answer that.

MS. BUSH: I believe this was based on what the company was arguing in their claim for interim rate relief, and if Mr. Carroll can't answer that, that is fine, but I thought he might. I would like somebody from the company to respond to that.

MR. HALL: I don't see what relevance to this proceeding the company's position as to interim relief some two years ago would have.

MS. BUSH: That amount is not directly relevant to this case, and it might have changed, either increased or decreased, since that time, but what I am trying to establish now is to quantify the expenses that the company is incurring once Salem is in rate base, but regardless of whether it might be running or not running. Now if Mr. Carroll can't answer it or can't relate to it in any way, I will proceed from there.

THE WITNESS: My area of knowledge --

MR. HALL: Your Honor, I have an objection pending. Could you rule on the objection?

THE ADMINISTRATIVE LAW JUDGE: Off the record

9-13

for a second.

(Discussion off the record.)

THE ADMINISTRATIVE LAW JUDGE: I will overrule the objection and if Mr. Carroll can answer it, that is fine, otherwise I suggest that Ms. Bush go to the company's filing in RID 438 because those figures are broken down.

THE WITNESS: Basically my area of knowledge is in the operating cost, both maintenance and operation and fuel and interchange expenses, and I have no idea what went into any values associated with the lack of or the inability of the company to make money when Salem was not in rate case or what they lost when Salem was not in rate case, so I can't answer the question.

MS. BUSH: Can I have that answer reread, please?

(Answer read.)

BY MS. BUSH:

Q So that the $600,000 a day figure that you gave me, that was based on Account 555?

A No, that is based on increased fuel and interchange expenses which would be the increase in the 501 account, 518 account, 547 account, and the 555 account.

(Testimony continues on next page.)

BY MS. BUSH:

Q We had a figure from Mr. Boyer earlier that the capacity factor for Salem 1 from June 29, 1977, to May 31, 1979, was 47.8 per cent.

Do you have a figure that is to date?

A No, I do not.

Q Is it your area of expertise that would have established a capacity factor as a result of the reload study of Salem 1?

MR. HALL: You mean for the current test year?

MS. BUSH: Yes.

MR. HALL: There is no reload study for the current test year.

MS. BUSH: Then the most recent one that was done.

MR. HALL: It would be back to calendar year '77, the last rate case.

I understand that Salem is not part of the last case reload study. Therefore, there is no reload study relative to Salem.

BY MS. BUSH:

Q Well, are you aware of any similar figure that was determined for Salem consistent with the company's generating plant reload study?

A There was a presentation of a reload study in

the last rate case which was dropped at the time that the Commission changed the fuel adjustment clause. So, reload was dropped completely out of the last rate case when the Commission changed the fuel adjustment clause.

MS. BUSH: That is all of the questions I have, Your Honor.

THE ADMINISTRATIVE LAW JUDGE: Thank you, Miss Bush.

We stand adjourned until 9:30 tomorrow morning.

(Whereupon, at 4:50 o'clock p.m., the hearing was recessed.)

--oOo--

I hereby certify that the foregoing is a true and correct transcript of my stenotype notes taken by me during the hearing on the above cause, at the herein indicated time and place, before the Pennsylvania Public Utility Commission.

MOHRBACH & MARSHAL, INC.

By James P O'Hara
James P. O'Hara

By Kay E. Sweigart
Kay E. Sweigart

10-24-79

REPORTED BY:

MOHRBACH & MARSHAL, INC.
27 North Lockwillow Avenue
Harrisburg, Pennsylvania 17112

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R-7906086 5
Philu Elec. Co
EXHIBIT DPS-1
Hrg. 10-24-79

PHILADELPHIA ELECTRIC COMPANY

ELECTRIC OPERATIONS

REVENUE, EXPENSES, INCOME & MEASURES OF VALUE

TWELVE MONTHS ENDING
MARCH 31, 1979

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JULY 27, 1979

Philadelphia Electric Company - Electric Operations

INCOME AVAILABLE FOR RETURN
12 MONTHS ENDED MARCH 31, 1979
(Thousand $)

	Actual (B-9) (1)	Adjustments to Rate-Making Basis (A-3) (2)	Proforma Present Rates (3)=(1)+(2)	Supplement No. 6 Rate Increase (4)	Supplement No. 6 Proforma Proposed Rates (5)=(3)+(4)
Operating Revenue	$1,229,728	($65,868)	$1,163,860	$123,134	$1,286,994
Operating Expenses					
Operating & Maintenance Expense	746,084	(40,888)	705,196	-	705,196
Depreciation and Amortization Expense Including Salvage	104,901	3,707	108,608	-	108,608
Provision for Taxes					
Taxes Other Than Income	81,715	(37,591)	44,124	2,463	46,587
Income Taxes	4,352	20,922	25,274	60,056	85,330
Provision for Deferred Income Taxes	46,377	(4,775)	41,602	-	41,602
Income Taxes Deferred Prior Years-Cr.	(1,849)	0	(1,849)	-	(1,849)
Investment Tax Credit Adjustment-(Net)	29,427	0	29,427	-	29,427
Total Taxes	$160,022	($21,444)	$138,578	$62,519	$201,097
Gain Or Loss from Sale of Plant	(202)	0	(202)	-	(202)
Total Operating Expenses	$1,010,805	($58,625)	$952,180	$62,519	$1,014,699
Operating Income Available for Return	$218,923	($7,243)	$211,680	$60,615	$272,295
Proforma Rate of Return					
On $2,480,358 Original Cost Measure			8.53%		10.98%
On $3,240,757 Average of O.C. and 3-Yr. TOC			6.53%		8.40%

Philadelphia Electric Company - Electric Operations

MEASURES OF VALUE
AT MARCH 31, 1979
(Thousand $)

	Reference	Original Cost	One-Year Trended Cost	Three-Year Trended Cost
Utility Plant in Service				
Electric	C-9	$3,342,907	$7,041,945	$6,472,406
Allocated Common	C-9	100,321	191,879	174,806
Total		$3,443,228	$7,233,824	$6,647,212
Less: Calculated reserve on Plant in Service	C-9	930,122	2,853,775	2,613,148
Depreciated Utility Plant		$2,513,106	$4,380,049	$4,034,064
Plus: Salem Unit #1 Nuclear Fuel	B-21	$10,954	$10,954	$10,954
Non-Revenue Producing CWIP	C-22	1,227	1,064	1,067
Land Held for Future Use	C-23	3,034	3,034	3,034
Materials and Supplies	C-24	72,039	72,039	72,039
Cash Working Capital	C-25	53,000	53,000	53,000
Total Additions		$140,254	$140,091	$140,094
Less: Accumulated Deferred Income Taxes				
Accelerated Amortization	B-2	6,958	6,958	6,958
Liberalized Depreciation on Plant in Service	B-16	163,144	163,144	163,144
Customer Deposits	B-2	2,633	2,633	2,633
Customer Advances	B-2	267	267	267
Total Deductions		$173,002	$173,002	$173,002
Measures of Value		$2,480,358	$4,347,138	$4,001,156

Philadelphia Electric Company - Electric Operations

ADJUSTMENTS TO INCOME AVAILABLE FOR RETURN
12 Months Ended March 31, 1979
(Thousand $)

Test Year Adjustments	Section and Page	Operating Revenues (1)	Operating Expense Excl. Taxes (2)	Taxes Other Than Income (3)	State Share of Income Taxes (4)=14.019% of Total	Federal Share of Income Taxes (5)=85.981% of Total	Effect on Income for Return (6)=(1)-(2)-(3)-(4)-(5)
Elimination of STAC Revenue & Taxes	D-1	($38,432)	$0	($36,501)	($1,931)	$0	$0
Full Year Effect of Present Base Rates	D-2	26,615	0	532	1,820	11,161	13,102
Annualization for Growth & Customers	D-3	12,840	4,865	257	538	3,303	3,877
Elimination of Energy Cost Adjustment	D-4	(68,468)	(66,797)	(4,481)	196	1,202	1,412
Wage & Benefit Increases	D-5	0	13,554	0	(946)	(5,800)	(6,808)
Book Depreciation to Calculated Depreciation at Year end, incl. Salvage	D-6	0	108	0	0	0	(108)
Tax Depreciation to Year End	D-7	0	0	0	940	5,764	(6,704)
Normalization of Tax Deferrals	D-8	0	0	0	(367)	(2,248)	2,615
Tax Savings on Proforma Interest	D-9	0	0	0	787	4,828	(5,615)
Annualization of Rev. Under FERC Jurisdiction	D-10	1,577	0	20	109	666	782
Reduction in O&M due to retirement of Mothballed Units	D-11	0	(875)	0	61	374	440
Miscellaneous Adjustments & Amortizations	D-12	0	127	0	115	706	(948)
Elimination of Salem #2 O&M and ITC	D-13	0	0	0	0	0	0
Full Year Effect of 46% Federal Income Tax Rate	D-14	0	0	0	0	(861)	861
Full Year Effect of Increase in Social Security Taxes	D-15	0	0	2,582	(180)	(1,105)	(1,297)
Decommissioning Cost Adjustment	D-16	0	3,599	0	(251)	(1,540)	(1,808)
Spent Fuel Disposal Cost Adjustment	D-17	0	8,238	0	(575)	(3,525)	(4,138)
Normalization of Repair Allowance	D-18	0	0	0	407	2,499	(2,906)
Total		($65,868)	($37,181)	($37,591)	$723	$15,424	($7,243)

Philadelphia Electric Company - Electric Operations

EFFECTS ON INCOME FOR RETURN
OF SUPPLEMENT NO. 6
12 Months Ending March 31, 1979
(Thousand $)

Increase in base revenue (A-5a)	$123,134
Less: 2% Gross Receipts Tax	2,463
Increase in Income Before Taxes	$120,671
Increase in Income Taxes @ 49.768%	60,056
Increase in Income for Return	$60,615

Philadelphia Electric Company - Electric Operations
KILOWATT-HOUR SALES, CUSTOMERS AND REVENUE BY TARIFF SUBDIVISIONS
TWELVE MONTHS ENDED MARCH 31, 1979

	kWh Sales Year Ended 3/31/79 (1)	Number of Customers 3/31/79 (2)	Total Actual Revenue (b) (3)	Less: Actual STAC (4)	Less: Actual EFAC & Existing EC (5)	Total Actual Base Revenue (6)=(3)-(4+5)	Plus: Full Year Effect of EC Roll-In (7)	Plus: Full Year Effect of Present Base Rates (8)=(9)-(6+7)	Tariff No. 25 Proforma Base Revenue (9)
Electric Tariff No. 25									
R	6,364,179,652	1,099,717	$374,629,897	$14,063,035	$29,337,164	$331,229,698	$12,967,649	$7,991,009	$352,188,356
RH	861,528,004	42,684	35,195,566	1,285,935	3,172,946	30,736,685	1,314,873	805,859	32,857,417
WH	500,739,223	108,166 (a)	16,533,696	575,260	2,404,142	13,554,294	1,147,919	300,193	15,002,406
POL	9,563,375	4,246 (a)	1,273,058	50,615	45,603	1,176,840	21,459	26,861	1,225,160
GLP	60,026,314	9,070	3,746,394	141,496	293,991	3,310,907	138,684	189,905	3,639,496
GS-W/O Dem. Meas.	122,990,298	35,147	9,932,955	429,174	729,594	8,774,187	386,330	224,991	9,385,508
GS-W/Dem. Meas.	2,644,289,134	69,816	159,836,954	5,976,703	12,023,435	141,836,816	5,379,790	3,610,076	150,826,682
PD-(Incl. Riders)	2,487,641,076	3,754	111,769,354	4,083,914	11,875,016	95,810,424	5,515,979	2,483,277	103,809,680
HT-(Incl. Riders)	13,638,451,133	1,944	459,667,987	16,101,467	63,205,480	380,361,040	28,522,942	10,480,747	419,364,729
SLP	104,971,378	2	6,827,538	260,005	427,217	6,140,316	167,730	134,978	6,443,024
SLS	59,659,182	419	8,708,949	345,496	269,908	8,093,545	115,033	155,363	8,363,941
MLP	99,013,161	1,463	5,735,737	215,369	460,071	5,060,297	220,116	144,296	5,424,709
FLP	15,725,117	342	942,257	35,274	73,199	833,784	32,827	23,588	890,199
TL	31,391,607	186	1,759,628	65,611	141,695	1,552,322	60,201	34,078	1,646,601
BLI	58,972	2	3,213	119	175	2,919	53	191	3,163
Trans. Rental Rider	-	496 (a)	283,310	11,672	0	271,638	0	9,350	280,988
Total Elec.Tariff 25	27,000,227,626	1,264,546	$1,196,846,493	$43,641,145	$124,459,636	$1,028,745,712	$55,991,585	$26,614,762	$1,111,352,059
Other Electric Operations			32,881,563	0	0	32,881,563	0	0	32,881,563
Total			$1,229,728,056	$43,641,145	$124,459,636	$1,061,627,275	$55,991,585	$26,614,762	$1,144,233,622
Plus: STAC in Excess of STAC Related Taxes (D-1)									5,209,000
Plus: Additional Revenue from Growth Adjustment (D-3)									12,840,000
Plus: Additional Revenue from Rates Subject to FERC Jurisdiction (D-10)									1,577,000
Total Revenue									$1,163,859,622

(a) Duplicate customers - not included in total
(b) Includes recoupment of $49,605,447 ($47,243,755 Base + $2,361,692 STAC)

Philadelphia Electric Company - Electric Operations

SUMMARY OF CUSTOMERS INCREASED OR DECREASED AND
DOLLAR INCREASES OR DECREASES BY TARIFF SUBDIVISION
12 Months Ended March 31, 1979

	Tariff No. 25	Supplement No. 6			Increases		Decreases	
	Proforma Base Revenue (1)	Proposed Base Revenue (2)	Proposed Increase (3)=(2)-(1)	% Increase (4)=(3) (1)	Customers (5)	$ Increases (6)	Customers (7)	$ Decreases (8)
Electric Tariff No. 25								
R	$352,188,356	$396,816,192	$44,627,836	12.1	1,099,717	$44,627,836	0	0
RH	32,857,417	36,371,880	3,514,463	10.7	42,684	3,514,463	0	0
WH	15,002,406	17,185,000	2,182,594	14.5	108,166 (a)	2,182,594	0	0
POL	1,225,160	1,225,160	0	0.0	0	0	0	0
GLP	3,639,496	3,895,703 (b)	256,207	7.0	9,070	256,207	0	0
GS-W/O Demand Measurement	9,385,508	10,314,343	928,835	9.9	35,042	930,693	105	1,858
GS-W/Demand Measurement	150,826,682	167,243,388	16,416,706	10.9	63,310	16,573,652	6,506	156,946
PD-(Incl. Riders)	103,809,680	115,155,941	11,346,261	10.9	3,743	11,357,606	11	11,345
HT-(Incl. Riders)	419,364,729	458,687,174	39,322,445	9.4	1,936	39,330,003	8	7,558
SLP	6,443,024	7,287,156	844,132	13.1	2	844,132	0	0
SLS	8,363,941	9,637,612	1,273,671	15.2	419	1,273,671	0	0
MLP	5,424,709	6,210,316	785,607	14.5	1,449	837,364	14	51,757
FLP	890,199	998,222	108,023	12.1	340	109,630	2	1,607
TL	1,646,601	1,827,094	180,493	11.0	186	180,493	0	0
BLI	3,163	3,564	401	12.7	2	401	0	0
Transformer Rental Rider	280,988	331,367	50,379	17.9	496 (a)	50,379	0	0
Total Electric Tariff No. 25	$1,111,352,059	$1,233,190,112	$121,838,053	11.0%	1,254,900	$122,069,124	6,646	$231,071
Other Electric Operations	32,881,563	32,881,563	0	0.0				
Total Electric	$1,144,233,622	$1,266,071,675	$121,838,053	10.6%				
Plus: STAC in Excess of Related Taxes (D-1)	5,209,000	5,209,000	0	0.0				
Plus: Additional Revenue from Growth Adj. (D-3)	12,840,000	14,136,000	1,296,000					
Plus: Additional Rev. from Rates Subject to FERC Jurisdiction (D-10)	1,577,000	1,577,000	0	0.0				
	$1,163,859,622	$1,286,993,675	$123,134,053	10.6%				

(a) Duplicate Customers not included in totals.
(b) Reflects effects of transfers of existing Rate GLP customers to either Rate R or Rate GS. All customers remaining on Rate GLP will receive an approximate 20% increase.

Philadelphia Electric Company - Combined Operations
BALANCE SHEET
March 31, 1979
(Thousand $)

ASSETS AND OTHER DEBITS	COMPANY	SYSTEM
Utility Plant		
Electric	$4,886,266	$5,008,879
Gas	293,151	293,151
Steam	53,644	53,644
Common	119,555	119,555
Total Utility Plant	$5,352,616	$5,475,229
Less Provision for Depreciation		
Electric	$935,462	$970,663
Gas	53,560	53,560
Steam	23,866	23,866
Common	31,460	32,023
Total	$1,044,348	$1,080,112
Net Utility Plant	$4,308,268	$4,395,117
Nuclear Fuel	117,945	117,945
Net Utility Plant, incl. Nuclear Fuel	$4,426,213	$4,513,062
Other Property and Investments		
Non-Utility Property	$12,599	$12,842
Less Provision for Depreciation	(1,920)	(1,932)
Investments in Subsidiary Companies	83,257	21,789
Other Investments	67	67
Total	$94,003	$32,766
Current and Accrued Assets		
Cash	$4,479	$5,579
Special Deposits	4,196	4,196
Working Funds	3,490	3,496
Temporary Cash Investments	13,000	15,177
Notes Receivable	307	307
Accounts Receivable	236,670	239,146
Receivables from Associated Companies	1,982	-
Materials and Supplies	89,682	90,185
Prepayments	3,554	4,119
Interest and Dividend Receivable	-	-
Deferred Fuel Expense	(7,153)	(7,153)
Total	$350,207	$355,052
Deferred Debits		
Unamortized Debt Expense	$2,657	$2,709
Extraordinary Property Losses	233	233
Clearing Accounts	2,202	2,286
Research and Development Expenditures	883	1,009
Miscellaneous Deferred Debits	2,919	3,235
Unamortized Loss on Reacquired Debt	19	19
Total	$8,913	$9,491
TOTAL ASSETS AND OTHER DEBITS	$4,879,336	$4,910,371

Philadelphia Electric Company - Combined Operations
BALANCE SHEET
March 31, 1979
(Thousand $)

LIABILITIES AND OTHER CREDITS	COMPANY	SYSTEM
Proprietary Capital		
Common Capital Stock	$1,140,750	$1,140,750
Preferred Capital Stock	582,872	582,872
Premium on Preferred Stock	1,214	1,214
Other Paid in Capital	864	864
	$1,725,700	$1,725,700
Retained Earnings	345,049	345,049
Total	$2,070,749	$2,070,749
Long Term Debt		
Bonds	$1,996,395	$2,017,395
Advances from Subsidiary Companies	-	-
Pollution Control Notes	34,000	34,000
Other Long Term Debt	125,489	125,489
Unamortized Premium on Long Term Debt	942	942
Unamortized Discount on Long Term Debt	(6,375)	(6,467)
Total	$2,150,451	$2,171,359
Current and Accrued Liabilities		
Short-Term Debt - Bank Loans	-	$4,250
- Commercial Paper	$12,367	12,367
Current Maturities of Long-Term Debt	51,196	51,977
Accounts Payable	78,165	78,250
Payables to Associated Companies	30	-
Customers' Deposits	2,782(a)	2,837
Taxes Accrued	64,181	64,672
Interest Accrued	39,997	40,160
Dividends Declared	41,783	41,783
Tax Collections Payable	6,499	6,625
Miscellaneous Current & Accrued Liabilities	9,794	9,847
Deferred Income Taxes on Fuel	(3,685)(b)	(3,685)
Total	$303,109	$309,083
Deferred Credits		
Customers' Advances for Construction	$273(c)	$273
Accumulated Deferred Investment Tax Credits	137,198	138,830
Other Deferred Credits	7,333	7,451
Unamortized Gain on Reacquired Debt	2,038	3,140
Accumulated Deferred Income Taxes		
Accelerated Amortization Property	6,958	6,958
Other Property	174,649	175,950
Other	26,578	26,578
Total	$355,027	$359,180
TOTAL LIABILITIES AND OTHER CREDITS	$4,879,336	$4,910,371

(a) Electric portion $2,633
(b) Electric portion $3,613
(c) Electric portion $267

Philadelphia Electric Company - Electric Operations

ELECTRIC PLANT
AT MARCH 31, 1979
(Thousand $)

Electric Plant In Service		
Intangible Plant		
302.	Franchises and Consents	$163
Production Plant		
Steam Production Plant		
310.	Land and Land Rights	7,624
311.	Structures and Improvements	169,316
312.	Boiler Plant Equipment	452,830
314.	Turbogenerator Units	180,190
315.	Accessory Electric Equipment	92,476
316.	Miscellaneous Power Plant Equipment	11,776
	Total Steam Production Plant	$914,212
Nuclear Production		
320.	Land and Land Rights	338
321.	Structures and Improvements	215,662
322.	Reactor Plant Equipment	281,750
323.	Turbogenerator Units	131,035
324.	Accessory Electric Equipment	90,171
325.	Miscellaneous Power Plant Equipment	22,966
	Total Nuclear Production Plant	$741,922
Hydraulic Production		
330.	Land and Land Rights	1,401
331.	Structures and Improvements	14,270
332.	Reservoirs, Dams and Waterways	34,279
333.	Water Wheels, Turbines and Generators	21,802
334.	Accessory Electric Equipment	7,055
335.	Miscellaneous Power Plant Equipment	1,809
336.	Roads, Railroads and Bridges	998
	Total Hydraulic Production Plant	$81,614
Other Production Plant		
340.	Land and Land Rights	848
341.	Structures and Improvements	7,897
342.	Fuel Holders, Producers and Accessories	12,782
343.	Prime Movers	3,554
344.	Generators	101,315
345.	Accessory Electric Equipment	11,319
346.	Miscellaneous Power Plant Equipment	949
	Total Other Production Plant	$138,664
Total Production Plant		$1,876,412

Philadelphia Electric Company - Electric Operations

ELECTRIC PLANT
AT MARCH 31, 1979
(Thousand $)

Electric Plant In Service (Continued)

Transmission Plant		
350.	Land and Land Rights	39,065
352.	Structures and Improvements	12,175
353.	Station Equipment	161,579
354.	Towers and Fixtures	144,374
355.	Poles and Fixtures	577
356.	Overhead Conductors and Devices	63,196
357.	Underground Conduit	2,747
358.	Underground Conductors and Devices	33,928
359.	Roads and Trails	1,705
	Total Transmission Plant	$459,346
Distribution Plant		
360.	Land and Land Rights	18,739
361.	Structures and Improvements	27,968
362.	Station Equipment	251,387
364.	Poles, Towers and Fixtures	99,224
365.	Overhead Conductors and Devices	156,087
366.	Underground Conduit	127,234
367.	Underground Conductros and Devices	173,485
368.	Line Transformers	119,669
369.	Services	56,442
370.	Meters	61,909
371.	Installations on Customers' Premises	303
373.	Street Lighting and Signal Systems	17,917
	Total Distribution Plant	$1,110,364
General Plant		
389.	Land and Land Rights	1,987
390.	Structures and Improvements	12,031
393.	Stores Equipment	448
394.	Tools, Shop and Garage Equipment	3,247
395.	Laboratory Equipment	4,290
397.	Communication Equipment	530
398.	Miscellaneous Equipment	751
	Sub-Total	$23,284
399.	Other Tangible Property Antitrust Price Adjustment	(6,682)
	Total General Plant	$16,602
Total Electric Plant In Service (carried forward)		$3,462,887

Philadelphia Electric Company - Electric Operations

ELECTRIC PLANT
AT MARCH 31, 1979
(Thousand $)

Total Electric Plant In Service (brought forward)	$3,462,887
Construction Work in Progress	1,408,321
Plant Held for Future Use	
Land and Land Rights	13,980
Other Than Land and Land Rights	1,078
Total	$15,058
Total Electric Plant	$4,886,266

Philadelphia Electric Company - Electric Operations

COMMON UTILITY PLANT
AT MARCH 31, 1979
(Thousand $)

Intangible Plant		
301.	Organization	$677
General Plant		
389.	Land and Land Rights	2,020
390.	Structures and Improvements	73,144
391.	Office Furniture and Equipment	8,024
392.	Transportation Equipment	23,951
393.	Stores Equipment	677
394.	Tools, Shop and Garage Equipment	4,290
396.	Power Operated Equipment	2,667
397.	Communication Equipment	20
398.	Miscellaneous Equipment	1,565
	Total - General Plant	$116,358
Total Common Utility Plant in Service		$117,035
Construction Work in Progress		1,576
Plant Held for Future Use (Land and Land Rights)		945
Total Common Utility Plant		$119,556

Philadelphia Electric Company
BOOK RESERVE FOR DEPRECIATION - ELECTRIC OPERATIONS
MARCH 31, 1979
(Thousand $)

Book depreciation reserve information is not maintained by detailed plant accounts, but is maintained in total, respectively for Electric, Gas, Steam and Common plant as shown on the balance sheet. The reserve for Electric Operations, including allocated common, is developed as follows:

Reserve for Depreciation - Electric	
New Generating Stations	
Peach Bottom No. 2 & 3	$45,007
Eddystone No. 3	21,337
Eddystone No. 4	7,205
Croydon	10,572
Salem No. 1	19,993
Other	831,348
Total Electric (B-1)	$935,462
Share of Common $31,460 (B-1) x 85.718%	26,967
Total	$962,429

Philadelphia Electric Company and Subsidiary Companies

12 MONTHS ENDING MARCH 31, 1979
CONSOLIDATED STATEMENT OF INCOME
(Thousand $)

Operating Revenue	
Electric	$1,237,637
Gas	194,997
Steam	41,318
Total Operating Revenue	$1,473,952
Operating Expenses	
Total Operation and Maintenance	929,651
Provision for Depreciation and Amortization	117,594
Provision for Taxes	
Federal Income Taxes	3,909
State and Local Income Taxes	9,357
Investment Tax Credit Adjustments - Net	31,143
Deferred Income Taxes	45,182
Taxes Other Than Income	96,479
Total Provision for Taxes	$186,070
Gain or Loss from Disposition of Utility Plant	(202)
Total Operating Expenses	$1,233,113
Operating Income	240,839
Other Income	
Allowance for Other Funds Used During Construction	40,142
Other Income and Deductions	4,065
Income Taxes	(27,948)
Total Other Income	$72,155
Income Before Interest Charges	$312,994
Interest Charges	
Interest on Long-Term Debt	180,674
Other Interest	2,742
Allowance for Borrowed Funds - Credit	(56,851)
Total Interest Charges	$126,565
Net Income	186,429
Dividends on Preferred Stocks	44,600
Earnings Available for Common Stock	$141,829
Common Stock Outstanding	
End of Period (1000)	76,578
Average (1000)	75,858
Earnings per average share (dollars)	$1.870

Philadelphia Electric Company - Electric Operations

OPERATING EXPENSES
Twelve Months Ended March 31
(Thousand $)

		1977	1978	1979
	OPERATING REVENUE			
	Sales of Electricity:			
440	Residential	$376,257	$425,205	$426,359
442	Commercial and Industrial	606,916	687,197	717,948
444	Public Street and Highway Lighting	13,531	15,024	15,537
445	Other Sales to Public Authorities	7,463	7,849	8,438
446	Sales to Railroads and Railways	25,501	28,426	28,278
447	Sales for Resale	10,721	13,290	16,488
448	Interdepartmental Sales	1,694	1,895	2,059
	Sub-Total	$1,042,083	$1,178,886	$1,215,107
	Other Operating Revenues:			
450	Forfeited Discounts	$4,396	$5,246	$4,690
451	Miscellaneous Service Revenues	56	58	74
454	Rent from Electric Property	2,487	2,615	3,450
455	Interdepartmental Rents	2,402	2,402	2,402
456	Other Electric Revenues	2,575	3,460	4,005
	Sub-Total	$11,916	$13,781	$14,621
	Total Electric Operating Revenues	$1,053,999	$1,192,667	$1,229,728
	OPERATING EXPENSES			
401	Operation and Maintenance Expense:			
	Power Production	$483,674	$550,274	$569,904
	Transmission	16,213	16,047	18,725
	Distribution	47,147	52,902	53,689
	Customer Accounts	30,474	37,410	42,937
	Customer Service & Information	3,315	2,406	1,981
	Sales	425	378	342
	Administrative and General Expense	43,204	51,966	58,506
	Total Operation and Maintenance Expense	$624,452	$711,383	$746,084
403	Depreciation Expense	86,665	98,038	104,099
405	Amortization of Other Electric Plant	(641)	(641)	(641)
407	Amortization of Property Losses	1,443	1,443	1,443
	Taxes:			
408.1	Taxes Other Than Income Taxes	71,798	79,850	81,715
409.1	Income Taxes	(4,530)	43,963	4,352
410.1	Provision for Deferred Income Taxes	39,443	27,627	46,377
411.1	Income Taxes Deferred in Prior Yrs.-Credit	(1,849)	(1,849)	(1,849)
411.4	Investment Tax Credit Adjustments	51,409	25,846	29,427
	Total Taxes	$156,271	$175,437	$160,022
411.6	Gain from Disposition of Utility Plant	-	(32)	(202)
	Total Operating Expenses	$868,190	$985,628	$1,010,805
	OPERATING INCOME	$185,809	$207,039	$218,923

Philadelphia Electric Company - Electric Operations
OPERATING EXPENSES
TWELVE MONTHS ENDED MARCH 31
(Thousand $)

I. POWER PRODUCTION EXPENSES
STEAM POWER GENERATION

		1977	1978	1979
OPERATION				
500	Operation Supervision & Engineering	$5,166	$5,736	$6,148
501	Fuel	252,505	251,975	259,896
502	Steam Expenses	7,820	8,764	9,112
504	Steam Transferred -Credit-Fuel	(23,473)	(25,238)	(26,685)
505	Electric Expenses	4,538	4,586	5,293
506	Miscellaneous Steam Power Expenses	6,232	7,105	7,298
507	Rents	18	21	24
	Total Operation	$252,806	$252,949	$261,086
MAINTENANCE				
510	Maint. Supervision & Engineering	$2,357	$2,521	$2,857
511	Maint. of Structures	1,402	2,437	2,408
512	Maint. of Boiler Plant	16,909	25,624	26,230
513	Maint. of Electric Plant	5,517	7,651	7,385
514	Maint. of Misc. Steam Plant	1,124	1,649	1,615
	Total Maintenance	$27,309	$39,882	$40,495
	Total Power Production Expenses - Steam Power	$280,115	$292,831	$301,581
	NUCLEAR POWER GENERATION			
OPERATION				
517	Operation Supervision & Engineering	$1,086	$1,833	$2,614
518	Fuel - Nuclear	12,892	19,623	26,679
519	Coolants and Water	326	466	534
520	Steam Expenses	4,078	6,339	6,111
523	Electric Expenses	178	480	689
524	Misc. Nuclear Power Expenses	3,828	5,722	8,525
525	Rents	-	-	7
	Total Operation	$22,388	$34,463	$45,159
MAINTENANCE				
528	Maint. Supervision & Engineering	885	2,124	3,296
529	Maint. of Structures	324	628	958
530	Maint. of Reactor Plant Equipment	4,453	5,544	5,101
531	Maint. of Electric Plant	1,381	2,369	2,970
532	Maint. of Misc. Nuclear Plant	1,328	2,791	2,778
	Total Maintenance	$8,371	$13,456	$15,103
	Total Pwr. Prod. Exp.-Nuclear Power-	$30,759	$47,919	$60,262

Philadelphia Electric Company - Electric Operations

OPERATING EXPENSES
Twelve Months Ended March 31
(Thousand $)

		1977	1978	1979
	HYDRAULIC POWER GENERATION			
OPERATION				
535	Operation Supervision & Engineering ----	$207	$231	$250
536	Water & Power ----------	111	116	97
537	Hydraulic Expenses ----------	403	324	443
538	Electric Expenses ----------	100	126	132
539	Misc. Hydraulic Pwr. Generation Exp. ---	189	231	215
540	Rents ----------	-	-	-
	Total Operation ----------	$1,010	$1,028	$1,137
MAINTENANCE				
541	Maint. Supervision & Engineering -------	138	147	178
542	Maint. of Structures ----------	55	85	87
543	Maint. of Reservoirs, Dams & Waterways--	50	41	81
544	Maint. of Electric Plant ----------	478	478	2,099
545	Maint. of Misc. Hydraulic Plant --------	63	73	94
	Total Maintenance ----------	$784	$824	$2,539
	Total Pwr.Prod.Exp.-Hydraulic Pwr.----	$1,794	$1,852	$3,676
	INTERNAL COMBUSTION GENERATION			
OPERATION				
546	Operation Supervision & Engineering ----	$540	$645	$755
547	Fuel ----------	25,160	31,750	18,509
548	Generation Expenses ----------	633	606	667
549	Misc. Other Pwr. Generation Expenses ---	932	630	669
550	Rents ----------	2,662	2,660	2,662
	Total Operation ----------	$29,927	$36,291	$23,262
MAINTENANCE				
551	Maint. Supervision & Engineering -------	$229	$247	$244
552	Maint. of Structures ----------	360	318	164
553	Maint. of Generating & Electric Plant --	2,684	2,576	3,898
554	Maint. of Misc.Other Pwr. Generation Plt	47	48	39
	Total Maintenance	$3,320	$3,189	$4,345
	Total Internal Combustion	$33,247	$39,480	$27,607

Philadelphia Electric Company - Electric Operations
OPERATING EXPENSES
Twelve Months Ended March 31
(Thousand $)

		1977	1978	1979	
	OTHER POWER SUPPLY EXPENSES				
555	Purchased Power	$151,355	$148,402	$157,469	
556	System Control and Load Dispatching	1,757	2,151	2,289	
557	Other Expenses	(15,353)	17,639	17,020	(a)
	Total Other Pwr. Supply Expenses	$137,759	$168,192	$176,778	
	Total Power Production Expenses	$483,674	$550,274	$569,904	
	II TRANSMISSION EXPENSES				
OPERATION					
560	Operation Supervision & Engineering	$1,182	$1,075	$1,289	
561	Load Dispatching	510	617	581	
562	Station Expenses	959	1,085	1,196	
563	Overhead Line Expenses	290	160	209	
564	Underground Line Expenses	105	137	157	
566	Miscellaneous Transmission Expenses	850	820	719	
567	Rents	6,872	6,201	7,981	
	Total Operation	$10,768	$10,095	$12,132	
MAINTENANCE					
568	Maint. Supervision & Engineering	609	609	687	
569	Maint. of Structures	131	214	307	
570	Maint. of Station Equipment	2,113	2,404	2,975	
571	Maint. of Overhead Lines	2,165	2,095	2,175	
572	Maint. of Underground Lines	403	620	466	
573	Maint. of Misc. Transmission Plt.	24	10	(17)	
	Total Maintenance	$5,445	$5,952	$6,593	
	Total Transmission Expenses	$16,213	$16,047	$18,725	
	III DISTRIBUTION EXPENSES				
OPERATION					
580	Operation Supervision & Engineering	$3,659	$4,119	$4,517	
581	Load Dispatching	812	925	878	
582	Station Expenses	3,007	3,262	3,266	
583	Overhead Line Expenses	1,962	2,430	2,495	
584	Underground Line Expenses	704	724	931	
585	Street Lighting & Signal System Exp.	458	357	530	
586	Meter Expenses	2,966	2,749	2,545	
587	Customer Installations Expenses	2,577	3,201	3,055	
588	Misc. Distribution Expenses	6,042	6,686	6,496	
589	Rents	808	710	802	
	Total Operation	$22,995	$25,163	$25,515	

(a) includes deferred fuel of $16,984

Philadelphia Electric Company - Electric Operations
OPERATING EXPENSES
Twelve Months Ended March 31
(Thousand $)

		1977	1978	1979
MAINTENANCE				
590	Maint. Supervision & Engineering ------	$2,186	$2,404	$2,765
591	Maintenance of Structures ----------	522	443	550
592	Maint. of Station Equipment ----------	4,321	4,883	5,007
593	Maint. of Overhead Lines ----------	11,377	13,010	11,683
594	Maint. of Underground Lines ----------	3,475	4,283	4,852
595	Maint. of Line Transformers ----------	379	488	594
596	Maint. of Street Ltg. & Signal Systems-	581	735	878
597	Maint. of Meters ----------	942	994	1,275
598	Maint. of Misc. Dist. Plant ----------	369	499	570
	Total Maintenance ----------	$24,152	$27,739	$28,174
	Total Distribution Expenses ---------	$47,147	$52,902	$53,689
	IV CUSTOMER ACCOUNTS EXPENSES			
OPERATION				
901	Supervision ----------	$1,029	$1,033	$1,089
902	Meter Reading Expenses ----------	3,527	5,108	6,062
903	Customer Records ----------	19,101	21,669	24,472
904	Uncollectible Accounts ----------	6,365	8,572	10,270
905	Misc. Cust. Accts. Expenses ----------	452	1,028	1,044
	Total Cust. Accts. Expenses ---------	$30,474	$37,410	$42,937
	V. CUSTOMER SERVICE & INFORMATIONAL EXPENSES			
OPERATION				
907	Supervision ----------	$471	$146	$145
908	Customer Assistance Expenses ---------	1,619	764	833
909	Informational & Instructional --------	624	1,217	797
910	Miscellaneous ----------	601	278	206
	Total Cust.Serv. & Informational Exp.	$3,315	$2,406	$1,981
	VI SALES EXPENSES			
OPERATION				
911	Supervision----------	$122	$107	$80
912	Demonstrating & Selling Expenses -----	251	203	217
913	Advertising Expenses ----------	4	18	44
916	Miscellaneous Sales Expenses ---------	48	50	1
	Total Sales Expenses ----------	$425	$378	$342

Philadelphia Electric Company - Electric Operations
OPERATING EXPENSES
Twelve Months Ended March 31,
(Thousand $)

	1977	1978	1979
X TAXES			
TAXES OTHER THAN INCOME TAXES			
State and Local			
Capital Stock - Pennsylvania	9,222	11,701	13,895
Capital Stock - New Jersey	221	232	237
Gross Receipts	46,126	52,072	53,560
Real Estate - Local	740	822	897
Real Estate - State	8,431	6,962	3,426
Personal Property - New Jersey	120	120	122
Local Franchise	260	254	249
Public Utility Commission Expense	1,074	1,300	1,966
State Unemployment Compensation	394	413	680
Philadelphia Realty Occupancy	169	172	168
Miscellaneous State and Local	2	8	33
Total State and Local	66,759	74,060	75,233
Federal			
Telephone and Telegraph	44	44	34
Federal Unemployment Compensation	135	192	296
Federal Old Age Benefits	4,860	5,546	6,120
Other	-	7	32
Total Federal	5,039	5,789	6,482
Total Taxes Other Than Income	71,798	79,849	81,715
INCOME TAXES			
State - Pennsylvania	8,632	13,632	7,175
State - Maryland	24	55	29
State - New Jersey	330	542	343
Federal	(13,516)	29,735	(3,194)
Total Income Taxes	(4,530)	43,964	4,353
Provisions for Deferred Income Taxes	39,443	27,627	46,377
Income Taxes Deferred in Prior Years - Credit	(1,849)	(1,849)	(1,849)
Investment Tax Credit Adjustments	51,409	25,846	29,427*
TOTAL ALL TAXES	156,271	175,437	160,023
XI GAIN OR LOSS FROM DISPOSITION OF UTILITY PLANT	-	(32)	(202)
XII TOTAL OPERATING EXPENSES (B-9)	868,189	985,627	$1,010,805

*Investment Tax Credit	$33,288
Less: - Prior Period Adjustment (TRASOP)	324
- Amortization	3,537
	$29,427

Philadelphia Electric Company - Electric Operations
FEDERAL INCOME TAX COMPUTATION
12 MONTHS ENDED MARCH 31, 1979
(Thousand $)

Operating Revenue		$1,229,728
Less: Operating Expenses		
Operating and Maintenance Expenses	745,882	
Depreciation and Amortization	104,901	
State and Local Income Taxes	7,546	
Taxes Other Than Income	1,715	
Total	$940,044	
Balance		$289,684
Adjustments for Additional Items Affecting Taxable Income		
Deductions		
Gross Interest Charges Allocated to Electric Operations	117,378	
Additional Depreciation for Tax Purposes	57,507	
Nuclear Fuel: Excess of Tax Over Burn-up	2,188	
Contribution to Pension Fund Charged to Construction	3,186	
Taxes Charged to Construction	7,933	
Preferred Dividend Credit	758	
Amortization of Various Expenses Capitalized by R.A.	288	
Amortization of Pollution Control Facilities	1,496	
Amortization of Easements & Clearing Rights of Way	381	
Cost of Removal	458	
ADR Repair Allowance	6,040	
Retroactive Rate Increase	49,606	
Miscellaneous Deductions	59	
Contribution in Aid of Construction	271	
Additions		
AFUDC Included in Nuclear Fuel Burn-up	1,887	
Amortization of Peach Bottom #1 Loss Charged to Income	1,443	
Reimburse Federal Income Taxes of SPCo	833	
Unbilled Memo Revenue	599	
Deferred Fuel Expense	16,984	
Subtotal - Net Deductions	$225,803	
Federal Income Tax Base - Operations		63,881
Federal Income Tax		30,246
Less: Surtax Exemption		2
Investment Tax Credit		21,514
Consolidated Savings		534
Net Federal Income Tax A/C 12 Months Ended 3/31/79		8,196
Add: Unused Investment Tax Credit Carryback		(11,775)
Capital Gains Tax		60
Prior Period Adjustment		325
Federal Income Tax Charged to Operations		($3,194)

Philadelphia Electric Company - Electric Operations
ACCUMULATED DEFERRED TAXES
PER BALANCE SHEET (B-2) AS OF MARCH 31, 1979
(Thousand $)

The balance as of 3/31/79 in Accumulated Deferred Income Taxes including allocated common which amounts to $163,144 for electric operations as developed below, is deducted from the Company's investment in developing the rate base measures of value (A-2).

Combined Operations

	Total Per Balance Sheet (a)	Accumulated Deferred Taxes Common Allocated (b)	Accumulated Deferred Taxes Including Allocated Common
Electric	160,003	3,141	163,144
Gas	9,307	471	9,778
Steam	1,675	52	1,727
Common	3,664	(3,664)	-
Total	$174,649		$174,649

(a) Per B-2
(b) Per B-17

Electric	85.718%
Gas	12.869
Steam	1.413
	100.000%

Philadelphia Electric Company - Combined Operations

DEVELOPMENT OF FACTORS FOR ALLOCATING COMMON
TO ELECTRIC, GAS, & STEAM OPERATIONS
March 31, 1979

	Plant in Service (1)	By Total Revenue (2)	By Total Customers (3)	Average (4)=(1)+(2)+(3) / 3
Basic Data	(Thousand $)	(Thousand $)	(Number)	
Electric	$3,462,887	$1,229,729	1,264,553	
Gas	292,037	194,996	270,884	
Steam	52,447	41,318	659	
Subtotal	$3,807,371	$1,466,043	1,536,096	
Common	117,035	-	-	
Total	$3,924,406	$1,466,043	1,536,096	
Allocation Factors	PERCENT			
Electric	90.952	83.881	82.322	85.718
Gas	7.670	13.301	17.635	12.869
Steam	1.378	2.818	0.043	1.413
Total	100.000	100.000	100.000	100.000

Philadelphia Electric Company - Combined Operations

CALCULATION OF EFFECTIVE INCOME TAX RATE

The effective income tax rate developed below combines into a single rate the effects of the federal income tax rate of 46% and the Pennsylvania income tax rate of 7.5%. The Pennsylvania income tax rate of 7.5% is the rate in effect prior to 1971 and is used here to reflect the level of Pennsylvania income taxes collectible through base rates. Changes in the Pennsylvania income tax rate since 1970 are collected through operation of the State Tax Adjustment Clause.

This effective income tax rate is intended for application to incremental changes in taxable income which result from 1) changes in revenue, less gross receipts taxes, associated with ratemaking adjustments, 2) changes in tax deductible expense associated with ratemaking adjustments and 3) additional revenues yielded by proposed rates. Because the effective income tax rate is applied to incremental changes in taxable income, it is independent of the overall average income tax rate experienced during the test year.

In 1970, prior to the establishment of the State Tax Adjustment Clause, Pennsylvania income taxes were deductible in determining both state and federal taxable incomes. Consequently, the effective state, federal or combined income tax rates must be determined either by a trial and error procedure or by use of algebraic formulae. The algebraic formulae used here act to determine an effective income tax rate to be applied to changes in taxable income before payment of both Pennsylvania and Federal income taxes.

Pennsylvania Effective Income Tax, s:

$$s = 0.075 \times (\text{taxable income} - s)$$
$$s = (0.075 \times \text{taxable income}) - (0.075 \times s)$$
$$s + (0.075 \times s) = (0.075 \times \text{taxable income})$$
$$s \times (1 + 0.075) = (0.075 \times \text{taxable income})$$
$$s = \frac{0.075 \times \text{taxable income}}{1.075}$$
$$s = 0.6977 \times \text{taxable income}$$

Federal Effective Income Tax, f:

$$f = 0.46 \times (\text{taxable income} - s)$$
$$f = (0.46 \times \text{taxable income}) - (0.46 \times 0.06977 \times \text{taxable income})$$
$$f = (0.4600 - 0.03209) \times \text{taxable income}$$
$$f = 0.42791 \times \text{taxable income}$$

Summary:

	Rate		
	Statutory	Effective	Effective In % of Total
Pennsylvania	7.5%	6.977%	14.019%
Federal	46.0	42.791	85.981
Total	53.5%	49.768%	100.000%

PHILADELPHIA ELECTRIC COMPANY

DEBT CAPITAL
DEVELOPMENT OF WEIGHTED EFFECTIVE COST RATE
March 31, 1979
($1,000's)

Debt Issue	Nominal Date of Issue (a)	Principal Amount Outstanding (b)	Premium or (Discount) (c)	Issue Expense (d)	Net Proceeds Amount (e)	Net Proceeds Per $100 (f)	Cost of Money Curr. Yield (g)	Cost of Money Ann. Interest (h)=(e)x(g)	Yield to Maturity (j)
2-3/4% due 1981	12/1/46	30,000	$264	134	30,130	100.43	2.74	826	2.73
3-1/4% due 1982	1/1/52	35,000	103	161	34,942	99.83	3.26	1,139	3.26
3-1/8% due 1983	12/1/53	20,000	(197)	97	19,706	98.53	3.17	625	3.20
3-1/8% due 1985	4/1/55	50,000	(235)	159	49,606	99.21	3.15	1,563	3.17
4.85% S.F. Debs due 1986	10/1/61	40,000	-	186	39,814	99.53	4.87	1,939	4.88
4-5/8% due 1987	9/1/57	40,000	(284)	131	39,585	98.96	4.67	1,849	4.69
3-3/4% due 1988	5/1/58	40,000	(360)	123	39,517	98.79	3.80	1,502	3.82
4-3/8% due 1986	12/1/58	50,000	(315)	148	49,537	99.07	4.42	2,190	4.43
5% due 1989	10/1/59	50,000	171	153	50,018	100.04	5.00	2,501	5.00
4-1/2% due 1994	5/1/64	50,000	160	134	50,026	100.05	4.50	2,251	4.50
6-1/8% due 1997	10/1/67	75,000	(271)	115	74,614	99.49	6.16	4,596	6.16
6-1/2% due 1993	3/1/68	60,000	(401)	79	59,520	99.20	6.55	3,899	6.57
9% S.F. due 1995	2/1/70	80,000	1,071	111	80,960	101.20	8.89	7,197	8.88
7-3/4% S.F. due 2000	12/15/70	80,000	(772)	107	79,121	98.90	7.84	6,203	7.85
8-1/4% due 1996	7/1/71	80,000	(369)	126	79,505	99.38	8.30	6,599	8.31
7-3/8% due 2001	12/15/71	80,000	49	132	79,917	99.90	7.38	5,898	7.38
7-1/2% due 1998	6/15/72	100,000	(14)	142	99,844	99.84	7.51	7,498	7.51
7-1/2% due 1999	1/15/73	100,000	(384)	116	99,500	99.50	7.54	7,502	7.54
8-1/2% due 2004	1/15/74	125,000	34	145	124,889	99.91	8.51	10,628	8.51
7-year notes	5/29/74	125,000	-	5	124,995	100.00	11.0 (1)	13,749	11.0
11% due 1980	10/15/74	125,000	(1,219)	216	123,565	98.85	11.13	13,753	11.27
12-3/4% due 1981	1/15/75	100,000	(850)	125	99,025	99.03	12.87	12,745	12.99
11-5/8% due 2000	4/15/75	65,000	(423)	104	64,473	99.19	11.72	7,556	11.73
11% due 2000	8/1/75	80,000	(700)	177	79,123	98.90	11.12	8,798	11.13
9-1/8% due 2006	3/1/76	100,000	(875)	159	98,966	98.97	9.22	9,125	9.23
9-5/8% due 2002	8/1/76	100,000	(875)	168	98,957	98.96	9.73	9,625	9.74
8-5/8% due 2007	3/15/77	75,000	(670)	117	74,213	98.95	8.72	6,469	8.73
8-5/8% due 2007	7/15/77	75,000	(429)	141	74,430	99.24	8.69	6,469	8.70
9-1/8% due 2008	3/15/78	100,000	110	152	99,958	99.96	9.13	9,125	9.14
7-year notes	7/10/78	25,000	-	3	24,997	99.99	10.25(2)	2,562	10.25
7-year notes	7/13/78	25,000	-	2	24,998	99.99	10.50(3)	2,625	10.50
I.R.B.'s									
4.40% due 1979	10/1/72	1,000	-	15	985	98.50	4.47	44	4.65
4.50% due 1980	10/1/72	1,000	-	15	985	98.50	4.57	45	4.72
5.50% due 1997	10/1/72	33,000	-	479	32,521	98.55	5.58	1,815	5.61
6.00% due 1993-2003	2/1/77	23,500	(429)	210	22,861	97.28	6.17	1,410	6.23
Note to Samuel & Catherine Edwards	7/19/77	333	-	-	333	100.00	8.00	27	8.00
Note to IBM		68	-	-	68	100.00	10.00	7	10.00
Note to Clarence & Betty Myers	11/1/78	40	-	-	40	100.00	7.00	3	7.00
Note to Burdett Oxygen Company	2/1/78	48	-	-	48	100.00	8.00	4	8.00
Cumulative Reacquired S.F.									
9% S.F. Due 1995	2/1/70	(9,404)	(126)	(13)	(9,517)	101.2	(8.89)	(846)	(8.88)
7-3/4% S.F. due 2000	12/15/70	(8,099)	78	(11)	(8,010)	98.90	(7.84)	(628)	(7.85)
4.85% S.F. Debs Due 2000	10/1/61	(14,406)	-	(67)	(14,339)	99.53	(4.87)	(698)	(4.88)
		2,207,080	(8,158)	4,496	2,194,426			180,189	
Weighted Avg. Cost of Debt Capital					8.21%				

(1) = 110% of prime (prime @ 10.0%) = 11%
(2) = 1/4 of 1% over prime (prime @ 10.0%) = 10.25%
(3) = 105% of prime (prime @ 10.0%) = 10.5%

Philadelphia Electric Company
Preferred Stock
Development of Weighted Effective Cost Rate
March 31, 1979
($1,000's)

Issue	Shares	Date of Issue	Principal Amount Oustanding	Total Discount and Expense or Net Premium	Amount	Per Share	Dividend Requirement	Effective Cost Rate - %
4.4% Cumulative	226,499	Dec. 1941	$22,650	-	$22,650	$100.00	$996.6	4.40
	48,221	Mar. 1942	4,822	449	5,271	109.31	212.2	4.03
3.8% Cumulative	300,000	12/5/46	30,000	(30)	29,970	99.90	1,140.0	3.80
4.3% Cumulative	150,000	2/5/48	15,000	(468)	14,532	96.88	645.0	4.44
4.68% Cumulative	150,000	5/14/53	15,000	(244)	14,756	98.37	702.0	4.76
7% Cumulative	400,000	2/18/69	40,000	(646)	39,354	98.39	2,800.0	7.11
8.75% Cumulative	650,000	7/22/70	65,000	(1,040)	63,960	98.40	5,687.5	8.89
7.85% Cumulative	500,000	3/10/71	50,000	(801)	49,199	98.40	3,925.0	7.98
7.75% Cumulative	200,000	11/16/71	20,000	(399)	19,601	98.01	1,550.0	7.91
7.80% Cumulative	750,000	4/20/72	75,000	(1,106)	73,894	98.53	5,850.0	7.92
7.325% Cumulative	750,000	5/1/73	75,000	(442)	74,558	99.41	5,493.8	7.37
9.50% Cumulative	750,000	5/1/74	75,000	(1,093)	73,907	98.54	7,125.0	9.64
9.52% Cumulative	500,000	5/1/76	50,000	(920)	49,080	98.16	4,760.0	9.70
8.75% Cumulative	500,000	5/1/78	50,000	(225)	49,775	99.55	4,375.0	8.79
(Redeemed 7% Cumulative)	(46,000)		(4,600)	74	(4,526)	(98.39)	(322.0)	(7.11)
Total at 3/31/79			$582,872		$575,981		$44,940.1	7.80

Philadelphia Electric Company - Electric Operations

ADDITIONAL WORKING CAPITAL
ASSOCIATED WITH SALEM UNIT #1 NUCLEAR FUEL
(Thousand $)

The following adjustment to materials and supplies reflects the average balance of nuclear fuel in the reactor of Salem Unit #1 for the twelve months ending March 31, 1979.

Actual Balance in Reactor @ 3/31/78	$13,952
Actual Balance in Reactor @ 3/31/79	7,955
Average Balance	10,954

Philadelphia Electric Company - Electric Operations

DESCRIPTION OF TRENDED ORIGINAL COST OF ELECTRIC PLANT

The measures of value of electric plant in service, including the allocable portion of common utility plant, at March 31, 1979, resulted from trended original cost and depreciation studies. A description of the trended original cost study follows, on pages C-1 through C-4. A summary of the results is presented by plant accounts on pages C-5 through C-11. The accrued depreciation presented in the summary was calculated in the manner described on page C-12, using the service life estimates identified on pages C-13 through C-21.

The trended original cost study restates the original cost of electric plant and common utility plant in service at March 31, 1979, in terms of price levels in effect at December 31, 1978, and average price levels for the periods 1976-1978 and 1974-1978.

The cost indexes used to calculate the trended original cost were the same indexes used in the previous study prepared by this firm related to plant in service at May 31, 1977, and presented to the Pennsylvania Public Utility Commission in the proceeding at the Rate Investigation Docket No. 438.

The trendable components of electric and common plant are set forth in Table 1, pages 9 through 20 of Exhibit No. HTW-1. The sources of data and the splice periods used in compiling the indexes used to trend electric and common plant are identified in Table 2, pages 21 through 60, and the reasons for the selection of the indexes are identified through lettered codes which refer to the reasons listed on pages 61 and 62. The workpapers for the index compilation, including tests and comparisons made during the course of the study, consist of seven volumes, and are available for inspection at the offices of Gannett Fleming Corddry and Carpenter, Inc., Harrisburg, Pennsylvania.

The basic and composite index numbers, from which trend factors were calculated, were compiled to conform with the historical price movements characteristic of each significant property component trended. Composite index numbers were developed by Laspeyres' procedure, that is, by applying constant percentage weights to each appropriate basic index number series.

Basic index data were selected from various sources, including the company's records, suppliers' price and index quotations, engineering periodicals, government statistical releases, and private cost index services.

Indexes used to reflect the changes in labor costs were developed to the extent possible from labor rates compiled from company records. In the case of contractors' labor, union rates in the Philadelphia area were used.

Indexes applicable to material and equipment costs were compiled from suppliers' quoted prices; company records of material unit costs; the U.S. Department of Labor - Bureau of Labor Statistics; Federal Energy Regulatory Commission; Federal Highway Administration; Marshall and Swift Comparative Equipment Costs; Handy-Whitman Index of Public Utility Construction Costs; Metal Statistics; Engineering News-Record; and Oil and Gas Journal.

Indexes for buildings and structures were based primarily on a building cost study of the Philadelphia area made by the Boeckh Publications, a Division of American Appraisal Associates, Inc., and the published index of Turner Construction Company who constructed the Philadelphia general office building.

Land and land rights, intangible plant, and computers were incorporated into the trended original cost results at original cost, inasmuch as no satisfactory published indexes were available for those assets.

Included in Utility Plant in Service under Account 399, Other Tangible Property, is a credit of $6,682,000, representing the portion of the settlement of anti-trust suits which was not amortized at March 31, 1979. The foregoing amount was deducted only in the original cost measures of value. It was not deducted from the trended original cost portion because the element of inflation associated with anti-trust activities was automatically eliminated by the trending process which relates the inflated cost indexes of the years affected by price control activities to current indexes reflecting actual recent prices.

The relative portions of the original cost of electric plant trended through indexes compiled from the several source categories are shown on the following table.

Index Data Source		Percent of Original Cost*
a.	Boeckh	5.1
b.	Handy-Whitman	0.5
c.	Indexes developed from suppliers' prices	11.7
d.	Indexes developed from company records	23.6
e. & f.	Government statistical releases	
	Construction equipment 6.0	
	Other equipment and wage rates 34.3	40.3
g.	Other published sources	9.2
h.	Unity	9.6
	Total	100.0

The calculation of trended original cost at the December 31, 1978 spot price level consisted of applying trend factors, developed from basic or composite indexes, to the surviving original cost, by vintage, of each trendable component. Each trend factor is calculated by dividing the applicable cost index number at the spot date by the comparable average index number for the year of installation of the property component being trended. Each series of cost index numbers reflects the direction and extent of relative changes in price or cost level of specific items (or groups of property) between designated periods of time.

The trended original costs at the average price level during the three-year and five-year periods ending with 1978 were calculated by applying price level conversion factors to the total trended original cost at the spot price level for each component trended. Each three-year and five-year average conversion factor was computed by dividing the average index number during the three-year or five-year period by the corresponding index number used for trending the original costs to the spot price level.

For the plant accounts containing more than one trendable component, the trended original costs of each component, at each price level, are summed to determine the total trended original cost.

*The percentages are based on the index source for the most recent period of spliced indexes. In the cases of composite indexes, the original cost was allocated to the basic indexes in accordance with the weights during the base period of the composite index.

Trending an Account

The trending of Account 362 - Distribution Station Equipment is shown below. It is a typical example of all trendable components.

Account 362 - Distribution Station Equipment

Year (1)	Original Cost at 3/31/79 (2)	Index (3)	Trend Factor (4)	Original Cost Trended to Dec. 31, 1978 Price Level (5)=(2)x(4)
1916	$ 22,213	151	7.841	$ 174,172
****				
1940	227,646	248	4.774	1,086,782
1941	424,425	251	4.717	2,002,013
****				
1963	5,844,668	542	2.185	12,770,600
1964	5,965,396	561	2.111	12,592,951
1965	3,837,496	576	2.056	7,889,892
1966	5,570,423	603	1.964	10,940,311
1967	9,089,382	642	1.844	16,760,820
1968	10,123,737	664	1.783	18,050,623
1969	17,250,247	657	1.802	31,084,945
1970	16,150,056	668	1.772	28,617,899
1971	20,492,496	672	1.762	36,107,778
1972	20,242,835	697	1.699	34,392,577
1973	11,882,200	729	1.624	19,296,693
1974	20,385,982	876	1.352	27,561,848
1975	11,760,371	1,000	1.184	13,924,279
1976	828,698	1,039	1.140	944,716
1977	3,151,922	1,076	1.100	3,467,114
1978	1,806,755	1,143	1.036	1,871,798
1979	2,847,104	1,184	1.000	2,847,104
12/31/78 Price Level Base		1,184		
Total	$247,604,643			$490,885,942

Original Cost Trended to 3-Year Average Price Level

$$\frac{1,086 \text{ (3-Year Average Index - 1976, 1977, 1978)}}{1,184 \text{ (December 31, 1978 Index)}}$$

$$= 0.917 \times \$490,885,942 \doteq \$450,142,409$$

Original Cost Trended to 5-Year Average Price Level

$$\frac{1,027 \text{ (5-Year Average Index - 1974, 1975, 1976, 1977, 1978)}}{1,184 \text{ (December 31, 1978 Index)}}$$

$$= 0.867 \times \$490,885,942 = \$425,598,112$$

****These dates omitted to simplify the illustration.

PHILADELPHIA ELECTRIC COMPANY - ELECTRIC OPERATIONS

SUMMARY BY PRIMARY ACCOUNTS OF ORIGINAL COST AND TRENDED ORIGINAL COST
AND RELATED DEPRECIATION RESERVE FOR ELECTRIC PLANT IN SERVICE AT MAR 31 1979
(THOUSAND $)

DEPRECIABLE ACCOUNTS	ORIGINAL COST PLANT	ORIGINAL COST CALCULATED RESERVE	ORIGINAL COST NET	ORIGINAL COST TRENDED TO 1-YEAR AVERAGE PLANT	1-YEAR AVERAGE CALCULATED RESERVE	1-YEAR AVERAGE NET	ORIGINAL COST TRENDED TO 3-YEAR AVERAGE PLANT	3-YEAR AVERAGE CALCULATED RESERVE	3-YEAR AVERAGE NET
PRODUCTION PLANT									
STEAM PRODUCTION PLANT EXCLUDING OLD STEAM PRODUCTION									
EDDYSTONE #3 & 50% OF COMMON FACILITIES									
311. STRUC AND IMPROV	23,461	3,188	20,273	33,858	4,601	29,257	30,489	4,143	26,346
312. BOILER PLANT EQUIP.	67,759	9,154	58,605	97,098	13,118	83,980	88,748	11,990	76,758
314. TURBO GEN. UNIT	23,834	3,213	20,621	34,464	4,646	29,818	31,465	4,242	27,223
315. ACC. EL. EQUIP.	11,724	1,579	10,145	14,761	1,988	12,773	13,861	1,867	11,994
316. MISC PWR PLANT EQUIP	1,097	149	948	1,701	231	1,470	1,509	205	1,304
TOTAL	127,875	17,283	110,592	181,882	24,584	157,298	166,072	22,447	143,625
EDDYSTONE #4 & 50% OF COMMON FACIL. & ADDITIONAL AFUDC									
311. STRUC AND IMPROV	22,571	1,776	20,795	26,340	2,073	24,267	24,075	1,895	22,180
312. BOILER PLANT EQUIP.	69,117	5,412	63,705	80,936	6,337	74,599	73,975	5,792	68,183
314. TURBO GEN. UNIT	24,945	1,948	22,997	29,484	2,303	27,181	26,919	2,102	24,817
315. ACC. EL. EQUIP.	12,025	939	11,086	13,528	1,057	12,471	12,703	992	11,711
316. MISC PWR PLANT EQUIP	1,105	87	1,018	1,345	106	1,239	1,193	94	1,099
TOTAL	129,763	10,162	119,601	151,633	11,876	139,757	138,865	10,875	127,990
OTHER									
311. STRUC AND IMPROV	120,165	82,334	37,831	361,175	429,211	131,964	512,680	392,541	120,139
312. BOILER PLANT EQUIP.	312,297	168,728	143,569	982,527	613,091	369,436	897,908	560,306	337,602
314. TURBO GEN. UNIT	130,844	77,255	53,589	415,053	273,312	141,741	378,944	249,534	129,410
315. ACC. EL. EQUIP.	71,520	41,719	29,801	228,200	155,195	73,005	213,809	145,551	68,258
316. MISC PWR PLANT EQUIP	9,482	5,722	3,760	34,905	23,849	11,056	30,961	21,154	9,807
TOTAL	644,308	375,758	268,550	2,221,860	1,494,658	727,202	2,034,302	1,369,086	665,216
TOTAL STEAM PROD PLANT	901,946	403,203	498,743	2,555,375	1,531,118	1,024,257	2,339,239	1,402,408	936,831

PHILADELPHIA ELECTRIC COMPANY - ELECTRIC OPERATIONS

SUMMARY BY PRIMARY ACCOUNTS OF ORIGINAL COST AND TRENDED ORIGINAL COST
AND RELATED DEPRECIATION RESERVE FOR ELECTRIC PLANT IN SERVICE AT MAR 31 1979
(THOUSAND $)

DEPRECIABLE ACCOUNTS	ORIGINAL COST PLANT	ORIGINAL COST CALCULATED RESERVE	ORIGINAL COST NET	ORIGINAL COST TRENDED TO 1-YEAR AVERAGE PLANT	1-YEAR AVERAGE CALCULATED RESERVE	1-YEAR AVERAGE NET	ORIGINAL COST TRENDED TO 3-YEAR AVERAGE PLANT	3-YEAR AVERAGE CALCULATED RESERVE	3-YEAR AVERAGE NET
NUCLEAR PRODUCTION PLANT									
PEACH BOTTOM #2 & #3									
321. STRUC AND IMPROV	99,114	13,467	85,647	170,262	23,136	147,126	156,301	21,239	135,062
322. REACTOR PLANT EQUIP.	131,783	17,659	114,124	185,647	24,917	160,730	167,825	22,525	145,300
323. TURBO GEN. UNIT	66,171	8,289	57,882	92,506	11,781	80,725	84,551	10,768	73,783
324. ACC. EL. EQUIP.	37,130	4,939	32,191	47,004	6,275	40,729	43,619	5,823	37,796
325. MISC PWR PLANT EQUIP	10,698	1,446	9,252	14,841	2,017	12,824	13,475	1,831	11,644
TOTAL	344,896	45,800	299,096	510,260	68,126	442,134	465,771	62,186	403,585
SALEM # 1 & 50% OF COMMON FACILITIES									
321. STRUC AND IMPROV	94,132	4,716	89,416	94,132	4,716	89,416	94,132	4,716	89,416
322. REACTOR PLANT EQUIP.	119,621	5,956	113,665	119,621	5,956	113,665	119,621	5,956	113,665
323. TURBO GEN. UNIT	51,746	2,576	49,170	51,746	2,576	49,170	51,746	2,576	49,170
324. ACC. EL. EQUIP.	42,307	2,094	40,213	42,307	2,094	40,213	42,307	2,094	40,213
325. MISC PWR PLANT EQUIP	9,797	488	9,309	9,797	488	9,309	9,797	488	9,309
TOTAL	317,603	15,830	301,773	317,603	15,830	301,773	317,603	15,830	301,773
TOTAL NUCLEAR PROD PLANT	662,499	61,630	600,869	827,863	83,956	743,907	783,374	78,016	705,358

PHILADELPHIA ELECTRIC COMPANY - ELECTRIC OPERATIONS

SUMMARY BY PRIMARY ACCOUNTS OF ORIGINAL COST AND TRENDED ORIGINAL COST
AND RELATED DEPRECIATION RESERVE FOR ELECTRIC PLANT IN SERVICE AT MAR 31 1979
(THOUSAND $)

DEPRECIABLE ACCOUNTS	ORIGINAL COST PLANT	ORIGINAL COST CALCULATED RESERVE	ORIGINAL COST NET	ORIGINAL COST TRENDED TO 1-YEAR AVERAGE PLANT	1-YEAR AVERAGE CALCULATED RESERVE	1-YEAR AVERAGE NET	ORIGINAL COST TRENDED TO 3-YEAR AVERAGE PLANT	3-YEAR AVERAGE CALCULATED RESERVE	3-YEAR AVERAGE NET
HYDRAULIC PRODUCTION PLANT									
331. STRUC AND IMPROV	14,270	1,363	12,907	32,834	3,150	29,684	29,390	2,822	26,568
332. TURBO GEN. UNIT	34,279	3,590	30,689	83,264	8,721	74,543	75,271	7,884	67,387
333. WTR. WHEELS TURBS GEN	21,802	3,815	17,987	48,293	8,960	39,333	44,284	8,216	36,068
334. ACC. EL. EQUIP.	7,055	1,382	5,673	15,148	3,024	12,124	14,224	2,839	11,385
335. MISC PWR PLANT EQUIP	1,609	320	1,489	4,241	775	3,466	3,786	690	3,096
336. ROADS RR'S BRIDGES	998	171	827	2,536	436	2,100	2,163	372	1,791
TOTAL	80,213	10,641	69,572	186,316	25,066	161,250	169,118	22,823	146,295
OTHER PRODUCTION PLANT - CROYDON									
341. STRUC AND IMPROV	6,448	1,225	5,223	8,924	1,696	7,228	7,612	1,446	6,166
342. FUEL HLDRS PRODUC ACC	9,484	1,802	7,682	13,373	2,541	10,832	12,370	2,350	10,020
344. GENERATORS	45,362	8,554	36,808	67,857	12,797	55,060	60,936	11,491	49,445
345. ACC. EL. EQUIP.	1,249	236	1,013	1,573	297	1,276	1,477	279	1,198
346. MISC PWR PLANT EQUIP	754	143	611	1,172	223	949	1,039	198	841
TOTAL	63,297	11,960	51,337	92,899	17,554	75,345	83,434	15,764	67,670
OTHER PRODUCTION PLANT - OTHER									
341. STRUC AND IMPROV	1,449	518	931	3,060	1,144	1,916	2,633	990	1,643
342. FUEL HLDRS PRODUC ACC	3,298	1,180	2,118	6,626	2,459	4,167	6,129	2,275	3,854
343. PRIME MOVERS	3,554	2,508	1,046	7,754	5,474	2,280	6,963	4,916	2,047
344. GENERATORS	55,953	19,379	36,574	101,318	35,620	65,698	90,984	31,987	58,997
345. ACC. EL. EQUIP.	10,070	3,473	6,597	18,209	6,494	11,715	17,098	6,098	11,000
346. MISC PWR PLANT EQUIP	194	69	125	387	151	236	343	134	209
TOTAL	74,518	27,127	47,391	137,354	51,342	86,012	124,150	46,400	77,750
TOTAL PRODUCTION PLANT	137,815	39,087	98,728	230,253	68,896	161,357	207,584	62,164	145,420

PHILADELPHIA ELECTRIC COMPANY - ELECTRIC OPERATIONS

SUMMARY BY PRIMARY ACCOUNTS OF ORIGINAL COST AND TRENDED ORIGINAL COST
AND RELATED DEPRECIATION RESERVE FOR ELECTRIC PLANT IN SERVICE AT MAR 31 1979
(THOUSAND $)

DEPRECIABLE ACCOUNTS	ORIGINAL COST PLANT	ORIGINAL COST CALCULATED RESERVE	ORIGINAL COST NET	ORIGINAL COST TRENDED TO 1-YEAR AVERAGE PLANT	1-YEAR AVERAGE CALCULATED RESERVE	1-YEAR AVERAGE NET	ORIGINAL COST TRENDED TO 3-YEAR AVERAGE PLANT	3-YEAR AVERAGE CALCULATED RESERVE	3-YEAR AVERAGE NET
TRANSMISSION PLANT									
352. STRUC AND IMPROV	12,175	3,178	8,997	30,667	11,527	19,140	26,904	10,182	16,722
353. STATION EQUIPMENT.	156,484	45,231	111,253	319,481	119,039	200,442	292,325	108,921	183,404
353.1 STAT EQUIP SALEM 1	4,064	175	3,889	4,462	192	4,270	4,083	176	3,907
354. TOWERS AND FIXTURES	144,374	23,024	121,350	297,717	68,757	228,960	270,625	62,500	208,125
355. POLES AND FIXTURES	577	190	387	1,308	526	782	1,190	479	711
356. OVHD COND AND DEVICES	63,196	13,736	49,460	134,385	37,754	96,631	120,140	33,752	86,388
357. UNDERGROUND CONDUIT	2,747	1,478	1,269	13,486	8,362	5,124	12,259	7,601	4,658
358. UNGRD COND & DEVICES	33,928	14,715	19,213	90,963	50,815	40,148	85,596	47,817	37,779
359. ROADS AND TRAILS	1,705	257	1,448	3,106	570	2,536	2,811	516	2,295
TOTAL	419,250	101,984	317,266	895,575	297,542	598,033	815,933	271,944	543,989
DISTRIBUTION PLANT									
361. STRUC AND IMPROV	27,575	8,221	19,354	92,215	41,291	50,924	82,523	37,345	45,178
362. STATION EQUIPMENT.	247,605	68,896	178,709	490,886	165,252	325,634	450,142	151,536	298,606
364. POLES TOWERS AND FIX	99,224	25,110	74,114	259,091	88,528	170,563	234,757	80,206	154,551
365. OVHD COND AND DEVICES	156,087	43,629	112,458	337,440	113,805	223,635	311,044	104,928	206,116
366. UNDERGROUND CONDUIT	127,227	45,383	81,844	442,302	243,590	198,712	397,835	218,988	178,847
367. UNGRD COND & DEVICES	173,478	39,635	133,843	368,848	119,507	249,341	348,404	112,934	235,470
368. LINE TRANSF & INST	119,669	29,776	89,893	179,619	46,541	133,078	160,757	41,655	119,102
369.1 SERVICES - AERIAL	24,177	9,018	15,159	48,634	22,129	26,505	44,960	20,447	24,513
369.2 SERVICES - UNDGRD	32,265	4,291	27,974	69,014	16,265	52,749	62,766	14,785	47,981
370. METERS	61,909	22,082	39,827	107,093	46,896	60,197	102,479	44,636	57,843
371. INST ON CUST PREM	303	12	291	785	43	742	720	40	680
373. STR LGHT SIG SYS									
373.0 LUMINAIRES	10,816	2,881	7,935	17,427	5,281	12,146	16,168	4,901	11,267
373.1 AERIAL CONDUCTORS	428	289	139	893	631	262	812	574	238
373.2 UNGRD CONDUCTORS	5,202	1,150	4,052	10,362	3,537	6,825	9,568	3,264	6,304
373.3 P O L CONDUCTORS	1,470	520	950	2,039	821	1,218	1,889	760	1,129
TOTAL	1,067,435	300,893	786,542	2,426,648	914,117	1,512,531	2,224,824	836,999	1,387,825
GENERAL PLANT									
390. STRUC AND IMPROV	12,031	4,764	7,267	35,272	18,241	17,031	32,189	16,717	15,472
393. STORES EQUIPMENT.	448	205	243	1,061	537	524	945	478	467
394. TOOLS SHOP & GARG EQ	3,247	941	2,306	8,511	3,087	5,424	7,439	2,698	4,741
395.1 LAB EQUIP - TESTING	3,498	731	2,767	6,914	1,878	5,036	6,396	1,737	4,659
395.2 LAB EQUIP METER	507	165	342	1,050	439	611	971	406	565
395.3 LAB EQUIP CHEM	285	73	212	535	191	344	495	177	318
397. COMMUNICATION EQUIP	530	267	263	1,059	558	501	968	510	458
398. MISC EQUIP	751	316	435	1,480	748	732	1,369	692	677
TOTAL	21,297	7,462	13,835	55,882	25,679	30,203	50,772	23,415	27,357
	3,310,455	924,900	2,385,555	7,177,912	2,946,374	4,231,538	6,590,844	2,697,769	3,893,075

Philadelphia Electric Company - Electric Operations
SUMMARY BY PRIMARY ACCOUNTS OF ORIGINAL COST AND TRENDED ORIGINAL COST
AND RELATED DEPRECIATION RESERVE FOR ELECTRIC PLANT IN SERVICE AT 3/31/79
($1,000's)

	Original Cost			Original Cost Trended to 1-Yr. Average			Original Cost Trended to 3-Yr. Average		
	Plant	Calculated Reserve	Net	Plant	Calculated Reserve	Net	Plant	Calculated Reserve	Net
Total Depreciable Electric Plant (C-8)	$3,310,455	$924,900	$2,385,555	$7,177,912	$2,946,374	$4,231,538	$6,590,844	$2,697,769	$3,893,075
Add:									
Non Depreciable Accounts									
302. Franchises & Consents (Intangibles)	163	-	163	163	-	163	163	-	163
310. Land & Land Rights (Steam Prod.)	7,624	-	7,624	7,624	-	7,624	7,624	-	7,624
320. Land & Land Rights (Nuclear Prod.)	338	-	338	338	-	338	338	-	338
330. Land & Land Rights (Hydraulic Prod.)	1,401	-	1,401	1,401	-	1,401	1,401	-	1,401
340. Land & Land Rights (Croydon)	451	-	451	451	-	451	451	-	451
340. Land & Land Rights (Other Prod.)	397	-	397	397	-	397	397	-	397
350. Land & Land Rights (Transmission)	39,065	-	39,065	39,065	-	39,065	39,065	-	39,065
360. Land & Land Rights (Distribution)	18,691	-	18,691	18,691	-	18,691	18,691	-	18,691
389. Land & Land Rights (General)	1,987	-	1,987	1,987	-	1,987	1,987	-	1,987
Total Non-Depreciable	$70,117	-	$70,117	$70,117	-	$70,117	$70,117	-	$70,117
Old Production	9,378	9,378	-	9,378	9,378	-	9,378	9,378	-
Anti-Trust Price Adjustment	(6,682)	-	(6,682)	(6,682)	-	(6,682)	(6,682)	-	(6,682)
Deduct Mothballed Plant Included in Above									
Barbadoes Units #3 and #4									
311. Structures and Improvements	9,379	7,030	2,349	47,685	36,396	11,289	43,635	33,312	10,323
312. Boiler Plant Equipment	10,196	7,170	3,026	47,968	34,722	13,246	43,843	31,736	12,107
314. Turbogenerator Units	4,800	3,520	1,280	21,243	15,742	5,501	19,395	14,372	5,023
315. Accessory Elec. Equip.	1,910	1,284	626	6,956	4,924	2,032	6,531	4,624	1,907
316. Misc. Power Plant Equipment	706	493	213	3,127	2,256	871	2,774	2,001	773
Total Units #3 & #4	$26,991	$19,497	$7,494	$126,979	$94,040	$32,939	$116,178	$86,045	$30,133
Richmond Unit #12									
311. Structures and Improvements	$5,584	$4,811	$773	$41,887	$36,755	$5,132	$38,381	$33,680	$4,701
312. Boiler Plt. Equipment	2,465	1,851	614	11,744	9,458	2,286	10,734	8,644	2,090
314. Turbogenerator Units	2,954	2,450	504	15,801	13,312	2,489	14,426	12,154	2,272
315. Accessory Elec. Equip.	2,068	1,641	427	10,773	9,078	1,695	10,116	8,524	1,592
316. Misc. Power Plt. Equip.	299	237	62	1,596	1,330	266	1,416	1,180	236
Total Unit #12	$13,370	$10,990	$2,380	$81,801	$69,933	$11,868	$75,073	$64,182	$10,891
Total Mothballed Plant Included in above	$40,361	$30,487	$9,874	$208,780	$163,973	$44,807	$191,251	$150,227	$41,024
Total Electric Plant in Service	$3,342,907	$903,791	$2,439,116	$7,041,945	$2,791,779	$4,250,166	$6,472,406	$2,556,920	$3,915,486
Allocated Common (From C-11)	100,321	26,331	73,990	191,879	61,996	129,883	174,806	56,228	118,578
Total Electric Plus Allocated Common	$3,443,228	$930,122	$2,513,106	$7,233,824	$2,853,775	$4,380,049	$6,647,212	$2,613,148	$4,034,064

PHILADELPHIA ELECTRIC COMPANY - COMMON

SUMMARY BY PRIMARY ACCOUNTS OF ORIGINAL COST AND TRENDED ORIGINAL COST
AND RELATED DEPRECIATION RESERVE FOR ELECTRIC PLANT IN SERVICE AT MAR 31 1979
(THOUSAND $)

DEPRECIABLE ACCOUNTS	ORIGINAL COST PLANT	ORIGINAL COST CALCULATED RESERVE	ORIGINAL COST NET	ORIGINAL COST TRENDED TO 1-YEAR AVERAGE PLANT	1-YEAR AVERAGE CALCULATED RESERVE	1-YEAR AVERAGE NET	ORIGINAL COST TRENDED TO 3-YEAR AVERAGE PLANT	3-YEAR AVERAGE CALCULATED RESERVE	3-YEAR AVERAGE NET
GENERAL PLANT									
390. STRUCTS AND IMPROV									
390.0 BRICK BUILDINGS	18,641	6,558	12,083	54,762	24,663	30,099	49,778	22,498	27,280
390.1 CONCRETE BULIDINGS	28,264	5,325	22,939	51,926	12,100	39,826	48,320	11,261	37,059
390.2 STEEL FRAM BUILDS	26,239	4,190	22,049	39,430	6,321	33,109	36,096	5,787	30,309
391. OFF FURN AND EQUIP	8,024	1,803	6,221	16,695	5,056	11,639	15,241	4,578	10,663
392. TRANS EQUIPMENT	23,951	9,711	14,240	39,910	17,053	22,865	35,440	15,137	20,303
393. STORES EQUIPMENT	677	242	435	1,572	641	931	1,401	571	830
394. TOOLS SHOP & GAR EQ	4,290	1,068	3,222	8,990	2,703	6,287	7,898	2,373	5,525
396. PWR OPERATED EQUIP	2,668	1,184	1,484	5,022	2,457	2,565	4,434	2,169	2,265
397. COMMUNICATION EQUIP	20	12	8	39	23	16	36	21	15
398. MISCELLANEOUS EQUIP	1,565	625	940	2,798	1,308	1,490	2,590	1,202	1,388
TOTAL	114,339	30,718	83,621	221,152	72,325	148,827	201,234	65,597	135,637
	114,339	30,718	83,621	221,152	72,325	148,827	201,234	65,597	135,637

Philadelphia Electric Company - Common
SUMMARY BY PRIMARY ACCOUNTS OF ORIGINAL COST AND TRENDED ORIGINAL COST
AND RELATED DEPRECIATION RESERVE FOR COMMON PLANT IN SERVICE AT 3/31/79
($1,000's)

		Original Cost			Original Cost Trended to 1-Yr. Average			Original Cost Trended to 3-Yr. Average		
		Plant	Calculated Reserve	Net	Plant	Calculated Reserve	Net	Plant	Calculated Reserve	Net
Total Depreciable Common Plant		$114,339	$30,718	$83,621	$221,152	$72,325	$148,827	$201,234	$65,597	$135,637
Non-Depreciable										
301. Organization (Intangible)		677	-	677	677	-	677	677	-	677
389. Land & Land Rights (General)		2,020	-	2,020	2,020	-	2,020	2,020	-	2,020
Total Non-Depreciable		2,697	-	2,697	2,697	-	2,697	2,697	-	2,697
Total Common Plant in Service		$117,036	$30,718	$86,318	$223,849	$72,325	$151,524	$203,931	$65,597	$138,334
Total Common Plant in Service Allocated										
Electric	85.718	$100,321	$26,331	$73,990	$191,879	$61,996	$129,883	$174,806	$56,228	$118,578
Gas	12.869	15,061	3,953	11,108	28,807	9,307	19,500	26,244	8,442	17,802
Steam	1.413	1,654	434	1,220	3,163	1,022	2,141	2,881	927	1,954
Total	100.000%	$117,036	$30,718	$86,318	$223,849	$72,325	$151,524	$203,931	$65,597	$138,334

Philadelphia Electric Company - Electric Operations

DESCRIPTION OF ANNUAL AND ACCRUED DEPRECIATION CALCULATIONS

The calculated annual and accrued depreciation incorporated in the pro forma income statement and the measures of electric and common plant value as of March 31, 1979, for this rate filing are based on service life estimates resulting from a current service life study. The study incorporated experienced service life data through 1977, which was the latest available experience at the time of the study. The resulting annual and accrued depreciation are summarized on pages C-13 through C-21. The detailed depreciation calculations, by plant account and vintage, are presented in Exhibit No. HTW-3.

The methods used in the study are set forth in Exhibit No. HTW-2, which also presents the life tables and survivor curves resulting from the service life study. The methods used for the statistical analyses of historical service life data and for the calculation of annual and accrued depreciation were the same as those used in the study presented in the last previous rate filing investigated at R.I.D. No. 438. The updated statistical analyses were generally interpreted similarly to those resulting in the estimates of the study which was accepted by the Commission at R.I.D. No. 438. However, the updated statistical information did result in some changes in the estimated survivor curves. The estimated service life characteristics resulting from the study are set forth in Table 1 of Exhibit No. HTW-2.

The life span procedure was applied to the major generating facilities in production plant, inasmuch as the retirement of generating units generally will result in the concurrent retirement of associated facilities, replacements, and improvements installed at various times throughout the principal units' life spans. The life span estimates were based primarily on management's plans and outlook toward the operation of the several generating units. The use of the life span procedure conforms to the provision of the Commission's order at R.I.D. No. 129 and is consistent with the procedure used for production plant for the past several rate proceedings. The life span estimates are generally consistent with those accepted in the most recent rate proceeding at R.I.D. No. 438, although there are some modifications to reflect the most current outlook.

Pursuant to Commission practice, annual and accrued depreciation are calculated using the same depreciation methods and same service life estimates.

Also, pursuant to Pennsylvania rate making practice, prospective net salvage is excluded from the calculated annual and accrued depreciation and an amortization of experienced net salvage is incorporated separately into the annual cost of service.

PHILADELPHIA ELECTRIC COMPANY - ELECTRIC OPERATIONS

CALCULATED DEPRECIATION ACCRUAL BY ACCOUNTS
FOR PLANT IN SERVICE AT MAR 31 1979
(THOUSAND $)

	ORIGINAL COST	LIFE SPAN			AVERAGE AGE		
		RATE	TERM	INTERIM	LIFE &	RATE	
	DEPRECIABLE	%	DATE	CURVE	CURVE	%	ANNUAL ACCURAL
PRODUCTION PLANT							
STEAM PRODUCTION PLANT EXCLUDING OLD STEAM PRODUCTION							
EDDYSTONE #3 & 50% OF COMMON FACILITIES							
311. STRUC AND IMPROV	23,461	2.88	2009	100-R3,			676
312. BOILER PLANT EQUIP.	67,759	2.99	2009	70-R2,			2,026
314. TURBO GEN. UNIT	23,834	2.96	2009	80-R2,			705
315. ACC. EL. EQUIP.	11,724	2.94	2009	90-R2,			345
316. MISC PWR PLANT EQUIP	1,097	2.92	2009	80R2.5			32
TOTAL	127,875	2.96					3,784
EDDYSTONE #4 & 50% OF COMMON FACIL. & ADDITITONAL AFUDC							
311. STRUC AND IMPROV	22,571	2.88	2011	100-R3,			650
312. BOILER PLANT EQUIP.	69,117	2.99	2011	70-R2,			2,067
314. TURBO GEN. UNIT	24,945	2.96	2011	80-R2,			738
315. ACC. EL. EQUIP.	12,025	2.94	2011	90-R2,			354
316. MISC PWR PLANT EQUIP	1,105	2.92	2011	80R2.5			32
TOTAL	129,763	2.96					3,841
OTHER							
311. STRUC AND IMPROV	120,165	2.85	(A)	100-R3,			3,428
312. BOILER PLANT EQUIP.	312,297	3.81	(A)	70-R2(1)			11,911
314. TURBO GEN. UNIT	130,844	3.31	(A)	80-R2,			4,329
315. ACC. EL. EQUIP.	71,520	4.05	(A)	90-R2(2)			2,897
316. MISC PWR PLANT EQUIP	9,462	3.47	(A)	80R2.5			328
TOTAL	644,308	3.55					22,893
TOTAL STEAM PROD PLANT	901,946	3.38					30,518

(1) Survivor Curve used for Tools and Equipment is $30S_0$, Interim Survivor Curve for all other is $70R_2$

(2) Survivor Curve used for SAMAC is $30R_2$, Interim Survivor Curve for all other is $90R_2$

PHILADELPHIA ELECTRIC COMPANY - ELECTRIC OPERATIONS

CALCULATED DEPRECIATION ACCRUAL BY ACCOUNTS
FOR PLANT IN SERVICE AT MAR 31 1979
(THOUSAND $)

	ORIGINAL COST	LIFE SPAN			AVERAGE AGE		
	DEPRECIABLE	RATE %	TERM DATE	INTERIM CURVE	LIFE & CURVE	RATE %	ANNUAL ACCURAL
NUCLEAR PRODUCTION PLANT							
PEACH BOTTOM 2 & 3							
321. STRUC AND IMPROV	99,114	2.88	2009	100-R3,			2,854
322. REACTOR PLANT EQUIP.	131,783	2.99	2009	70-R2,			3,940
323. TURBO GEN. UNIT	66,171	2.99	2009	80-R2,			1,978
324. ACC. EL. EQUIP.	37,130	2.95	2009	90-R2,			1,095
325. MISC PWR PLANT EQUIP	10,698	2.92	2009	80R2.5			312
TOTAL	344,896	2.95					10,179
SALEM #1 & 50% OF COMMON FACILITIES							
321. STRUC AND IMPROV	94,132	2.88	2012	100-R3,			2,711
322. REACTOR PLANT EQUIP.	119,621	2.99	2012	70-R2,			3,577
323. TURBO GEN. UNIT	51,746	2.96	2012	80-R2,			1,532
324. ACC. EL. EQUIP.	42,307	2.94	2012	90-R2,			1,244
325. MISC PWR PLANT EQUIP	9,797	2.92	2012	80R2.5			286
TOTAL	317,603	2.94					9,350
TOTAL NUCLEAR PROD PLANT	662,499	2.95					19,529

PHILADELPHIA ELECTRIC COMPANY - ELECTRIC OPERATIONS

CALCULATED DEPRECIATION ACCRUAL BY ACCOUNTS
FOR PLANT IN SERVICE AT MAR 31 1979
(THOUSAND $)

	ORIGINAL COST DEPRECIABLE	LIFE SPAN RATE %	LIFE SPAN TERM DATE	LIFE SPAN INTERIM CURVE	AVERAGE AGE LIFE & CURVE	AVERAGE AGE RATE %	ANNUAL ACCURAL
HYDRAULIC PRODUCTION PLANT							
331. STRUC AND IMPROV	14,270				87-R1.	1.15	164
332. TURBO GEN. UNIT	34,279				100-R2.	1.00	343
333. WTR. WHEELS TURBS GENS	21,802				50-R2,	2.00	436
334. ACC. EL. EQUIP.	7,055				50-R2.	2.00	141
335. MISC PWR PLANT EQUIP	1,809				45-R1,	2.22	40
336. ROADS RR'S BRIDGES	998				60-R2,	1.67	17
TOTAL	80,213					1.42	1,141
OTHER PRODUCTION PLANT - CROYDON							
341. STRUC AND IMPROV	6,448	4.02	1999	100-R3,			259
342. FUEL HLDRS PRODUC ACC	9,464	4.02	1999	100-R3,			381
344. GENERATORS	45,362	4.08	1999	80-R2,			1,851
345. ACC. EL. EQUIP.	1,249	4.07	1999	90-R2,			51
346. MISC PWR PLANT EQUIP	754	4.05	1999	80R2.5			31
TOTAL	63,297	4.06					2,573
OTHER PRODUCTION PLANT - OTHER							
341. STRUC AND IMPROV	1,449	4.01	(A)	100-R3,			58
342. FUEL HLDRS PRODUC ACC	3,298	4.02	(A)	100-R3,			132
343. PRIME MOVERS	3,554	4.10	(A)	80-R2,			145
344. GENERATORS	55,953	4.11	(A)	80-R2,			2,298
345. ACC. EL. EQUIP.	10,070	4.11	(A)	90-R2,			413
346. MISC PWR PLANT EQUIP	194	5.29	(A)	80R2.5			10
TOTAL	74,518	4.10					3,056
TOTAL PRODUCTION PLANT	137,615	4.08					5,629

PHILADELPHIA ELECTRIC COMPANY - ELECTRIC OPERATIONS

CALCULATED DEPRECIATION ACCRUAL BY ACCOUNTS
FOR PLANT IN SERVICE AT MAR 31 1979
(THOUSAND $)

	ORIGINAL COST	LIFE SPAN			AVERAGE AGE		
		RATE	TERM	INTERIM	LIFE &	RATE	
	DEPRECIABLE	%	DATE	CURVE	CURVE	%	ANNUAL ACCURAL
TRANSMISSION PLANT							
352. STRUC AND IMPROV	12,175				50-R4,	2.00	244
353. STATION EQUIPMENT.	156,464				40-R3,	2.50	3,912
353.1 STAT EQUIP SALEM 1	4,064				40-R3,	2.50	102
354. TOWERS AND FIXTURES	144,374				50-S1,	2.00	2,887
355. POLES AND FIXTURES	577				25-L2,	4.00	23
356. OVHD COND AND DEVICES	63,196				40-S1,	2.50	1,580
357. UNDERGROUND CONDUIT	2,747				50-R4,	2.00	55
358. UNGRD COND & DEVICES	33,928				40-R4,	2.50	848
359. ROADS AND TRAILS	1,705				50-S1,	2.00	34
TOTAL	419,250					2.31	9,685
DISTRIBUTION PLANT							
361. STRUC AND IMPROV	27,575				55-R3,	1.82	502
362. STATION EQUIPMENT.	247,605				40-R2,	2.50	6,190
364. POLES TOWERS AND FIX	99,224				36-R1,	2.78	2,758
365. OVHD COND AND DEVICES	156,087				31-S0,	3.23	5,042
366. UNDERGROUND CONDUIT	127,227				50-R4,	2.00	2,545
367. UNGRD COND & DEVICES	173,478				40-R1,	2.50	4,337
368. LINE TRANSF & INST	119,669				27-L.5	3.70	4,428
369.1 SERVICES - AERIAL	24,177				25-L3,	4.00	967
369.2 SERVICES - UNDGRD	32,265				40-L0,	2.50	807
370. METERS	61,909				50-S6,	2.00	2,034
371. INST ON CUST PREM	303				25-03,	4.00	12
373. STR LGHT SIG SYS							
373.0 LUMINAIRES	10,816				15-L0,	6.67	721
373.1 AERIAL CONDUCTORS	428				7-L0,	14.29	61
373.2 UNGRD CONDUCTORS	5,202				25-L.5	4.00	208
373.3 P D L CONDUCTORS	1,470				10-R1.5	10.00	147
TOTAL	1,087,435					2.83	30,759
GENERAL PLANT							
390. STRUC AND IMPROV	12,031				35-R3,	2.86	344
393. STORES EQUIPMENT.	448				23-L2,	4.35	19
394. TOOLS SHOP & GARG EQ	3,247				43-R2,	2.33	76
395.1 LAB EQUIP - TESTING	3,498				45-L1,	2.22	78
395.2 LAB EQUIP METER	507				35-R2,	2.86	14
395.3 LAB EQUIP CHEM	285				42-R3,	2.38	7
397. COMMUNICATION EQUIP	530				15-L1,	6.67	35
398. MISC EQUIP	751				23-S1,	4.35	33
TOTAL	21,297					2.85	606
	3,310,455					2.96	97,867

Philadelphia Electric Company - Electric Operations

CALCULATED DEPRECIATION ACCRUALS BY ACCOUNTS
FOR PLANT IN SERVICE AT MARCH 31, 1979
(Thousand $)

	Original Cost			Life Span			Average Life		
	Total	Non-Depreciable	Depreciable	Rate %	Term Date	Interim Curve	Life & Curve	Rate %	Annual Accrual
Subtotal Electric Plant (C-16)	$3,310,455	-	$3,310,455					2.96	$97,867
Add:									
Non-Depreciable Accounts									
302. Franchises & Consents (Intangible)	163	163	-						
310. Land & Land Rights (Steam Prod.)	7,624	7,624	-						
320. Land & Land Rights (Nuclear Prod.)	338	338	-						
330. Land & Land Rights (Hydraulic Prod.)	1,401	1,401	-						
340. Land & Land Rights (Croydon)	451	451	-						
340. Land & Land Rights (Other Prod.)	397	397	-						
350. Land & Land Rights (Transmission)	39,065	39,065	-						
360. Land & Land Rights (Distribution)	18,691	18,691	-						
389. Land & Land Rights (General)	1,987	1,987	-						
Total Non-Depreciable	$70,117	$70,117	-						
Old Production Plant									
311. Structures & Improvements	$6,631	$6,631	-						
312. Boiler Plant Equipment	580	580	-						
314. Turbogenerator Unit	1,099	1,099	-						
315. Accessory Electrical Equip.	747	747	-						
316. Misc. Power Plant Equipment	321	321	-						
Total Old Production Plant	$9,378	$9,378	-						
Anti-Trust Price Adjustment	(6,682)	(6,682)	-						(641)
Deduct: Mothballed Plant Included in Above									
Barbadoes Units #3 & #4									
311. Structures and Improvements	$9,379	-	$9,379						$231
312. Boiler Plant Equipment	10,196	-	10,196						303
314. Turbogenerator units	4,800	-	4,800						128
315. Accessory Elec. Equipment	1,910	-	1,910						62
316. Misc. Power Plant Equipment	706		706						21
Total Units #3 & #4	$26,991		$26,991						$745
Richmond Unit #12									
311. Structures and Improvements	$5,584	-	$5,584						$125
312. Boiler Plant Equip.	2,465	-	2,465						99
314. Turbogenerator Units	2,954		2,954						82
315. Accessory Elec. Equip.	2,068		2,068						69
316. Misc. Power Plt. Equip.	299	-	299						10
Total Unit #12	$13,370	-	$13,370						$385
Total Electric Utility Plant for Ratemaking	$3,342,907	$72,813	$3,270,094						$96,096
Adjustments to Arrive at Plant per Books									
Add:									
Eddystone #3 - 50% Common Facilities									
011. Structures & Improvements	$19,963	-	$19,963						
312. Boiler Plant Equipment	9,558	-	9,558						
314. Turbogenerator Units	4,059	-	4,059						
315. Accessory Electrical Equip.	1,683	-	1,683						
316. Misc. Power Plant Equipment	977	-	977						
Total 50% of Common Facilities	$36,240	-	$36,240						
Mothballed Plant									
Barbadoes Units #3 & #4	26,991	-	26,991						
Richmond Unit #12	13,370	-	13,370						
Total Steam Production	$76,601	-	$76,601						

Philadelphia Electric Company - Electric Operations

CALCULATED DEPRECIATION ACCRUALS BY ACCOUNTS
FOR PLANT IN SERVICE AT MARCH 31, 1979
(Thousand $)

	Original Cost		
	Total	Non-Depreciable	Depreciable
Add:			
Salem Unit - Common Facilities)			
Nuclear Production Plant			
321. Structures & Improvements	$23,884	-	$23,884
322. Reactor Plant Equipment	30,346	-	30,346
323. Turbogenerator Units	13,119	-	13,119
324. Accessory Electric Equipment	10,735	-	10,735
325. Misc. Power Plant Equipment	2,472	-	2,472
Total Nuclear Production	$80,556	-	$80,556
Transmission Plant			
353. Station Equipment	1,031	-	1,031
Total Salem - Common Facilities	$81,587	-	$81,587
Distribution Plant			
25 Hertz Facilities for Amtrak			
Somerset Converter Substation			
360. Land and Land Rights	$9	$9	-
361. Structures & Improvements	147	147	-
362. Station Equipment	566	566	-
Total Somerset Substation	$722	$722	-
Richmond Converter Substation			
360. Land and Land Rights	$24	$24	-
361. Structures & Improvements	72	72	-
362. Station Equipment	2,012	2,012	-
366. Underground conduit	5	5	-
367. Underground conductors & devices	4	4	-
Total Richmond Substation	$2,117	$2,117	-
Lamokin Converter Substation			
360. Land and Land Rights	$15	$15	-
361. Structures & Improvements	174	174	-
362. Station Equipment	1,205	1,205	-
366. Underground conduit	2	2	-
367. Underground conductors and devices	3	3	-
Total Lamokin Substation	$1,399	$1,399	-
Total Distribution Plant	$4,238	$4,238	-
Subtotal Electric Plant	$$3,505,333	$77,051	$3,428,282
Less:			
Steam Production Plant			
Eddystone #4 - 50% Common Facilities			
and Additional Allowances AFUDC			
311. Structures and Improvements	$22,571	-	$22,571
312. Boiler plant equipment	10,807	-	10,807
314. Turbogenerator units	4,589	-	4,589
315. Accessory Electric equipment	1,903	-	1,903
316. Misc. Power Plant Equipment	1,105	-	1,105
Total 50% Common Facilities	$40,975	-	$40,975
Less:			
Nuclear Production Plant Peach Bottom			
Units #2 and #3 Additional Allowed AFUDC			
321. Structures and Improvements	$1,468	-	$1,468
Total Electric Plant Per Books	$3,462,890	$77,051	$3,385,839

Philadelphia Electric Company - Electric Operations
RICHMOND UNIT #12 AND
BARBADOES UNITS #3 & #4 - AMORTIZATION
(Thousand $)

In 1979, the Company will retire those generating units designated Richmond 12 and Barbadoes 3 and 4. These facilities, which are currently classified as "mothballed", are being retired because current service requirement projections indicate that the capacity from these uneconomical units will not be required in the early and mid-1980's as was previously believed.

As per the Commission order at RID 438, these units were removed from the Company's rate base and depreciation was discontinued. The amortization of the unrecovered cost, based on the theoretical reserve at 12/31/77 (RID 438 test year), as developed below is required to achieve full and equitable recovery of the original cost associated with these units.

	Barbadoes Units #3&#4	Richmond Unit #12	Total
Original Cost*	$26,991	$13,370	$40,361
Associated Reserve 12/31/77	18,602	10,015	28,617
Unrecovered Cost	$8,389	$3,355	$11,744
Annual Amortization (5 years)			2,349
Decrease in income for return			$2,349

*Based on Plant at 3/31/79

PHILADELPHIA ELECTRIC COMPANY - COMMON

CALCULATED DEPRECIATION ACCRUAL BY ACCOUNTS
FOR PLANT IN SERVICE AT MAR 31 1979
(THOUSAND $)

		ORIGINAL COST	LIFE SPAN			AVERAGE AGE		
		DEPRECIABLE	RATE %	TERM DATE	INTERIM CURVE	LIFE & CURVE	RATE %	ANNUAL ACCURAL
GENERAL PLANT								
390.	STRUCTS AND IMPROV							
390.0	BRICK BUILDINGS	18,641				30-R1,	3.33	621
390.1	CONCRETE BULIDINGS	28,264				30-R1,	3.33	941
390.2	STEEL FRAM BUILDS	26,239				30-R1,	3.33	874
391.	OFF FURN AND EQUIP	8,024				30-L0,	3.33	267
392.	TRANS EQUIPMENT	23,951				11-L1,	9.09	2,177
393.	STORES EQUIPMENT	677				30-L2,	3.33	23
394.	TOOLS SHOP & GAR EQ	4,290				30-S0,	3.33	143
396.	PWR OPERATED EQUIP	2,668				10L1.5	10.00	267
397.	COMMUNICATION EQUIP	20				15-L1,	6.67	1
398.	MISCELLANEOUS EQUIP	1,565				20-L2,	5.00	78
	TOTAL	114,339					4.72	5,392
		114,339					4.72	5,392

Philadelphia Electric Company - Electric Operations

CALCULATED DEPRECIATION ACCRUALS BY ACCOUNTS
FOR PLANT IN SERVICE AT MARCH 31, 1979
(Thousand $)

	Original Cost			Life Span			Average Life		
	Total	Non-Depreciable	Depreciable	Rate %	Term Date	Interim Curve	Life & Curve	Rate %	Annual Accrual
Subtotal Common Plant (C-19)	$114,339		$114,339					4.72	$5,392
Add:									
Non-Depreciable Accounts									
301. Organization (Intangible)	677	677	-						
389. Land & Land Rights (General)	2,020	2,020	-						
Total Non-Depreciable	$2,697	$2,697	-						
Total Common Plant	$117,036	$2,697	$114,339						$5,392
Less: Transportation Cleared to Operating Expense									
392. Transportation	$23,951	-	$23,951				$11L_1$	9.09%	$2,177
394.3 Garage Equipment	719	-	719				$30S_0$	3.33	24
396.1 Vehicles	2,616	-	2,616				$10L_{1.5}$	10.00	262
Total Transportation	$27,286	-	$27,286						$2,463
Total Common Less Transportation	$89,750	$2,697	$87,053						$2,929
Allocation of Common Less Transportation									
Electric 85.718			$74,620						$2,511
Gas 12.869			11,203						377
Steam 1.413			1,230						41
100.000%			$87,053					3.36	$2,929

(A)

Philadelphia Electric Company - Electric Operations

PRODUCTION PLANT
LIFE SPAN DATA

Station		Term Year
Steam Production		
Chester		1982
Richmond #9		1985
Cromby		1990
Delaware		1988
Eddystone 1&2		1990
Schuylkill		1992
Southwark		1988
Keystone		1998
Conemaugh		2006
Other Production (Excl. Croydon)		
Station	Unit	
Barbadoes	6&7	1986
Southwark	3,4,5&6	1992
Eddystone	10,20,30,40	1994
Cromby	Diesel	1992
Chester	Diesel	1992
Delaware	Diesel	1992
Richmond	Diesel	1992
Barbadoes	Diesel	1992
Southwark	Diesel	1992
Schuylkill	Diesel	1992
Delaware	9,10,11, & 12	1994
Schuylkill	10	1994
Chester	7,8,9	1994
Keystone	Diesel	1993
Falls	1,2,&3	1995
Moser	1,2,&3	1995
Conemaugh	Diesel	1995
Barbadoes	5	1995
Richmond	73,74,81,91,92	1997
Portable Equipment		1996
Plymouth Meeting	9 & 15	1996
Salem	C.T.	1996

Philadelphia Electric Company
SUMMARY OF NON-REVENUE PRODUCING CONSTRUCTION WORK IN PROGRESS
AND COST TO COMPLETE PRIOR TO OCTOBER 1, 1979
LESS ASSOCIATED RETIREMENTS
($1,000's)

	Reference	Original Cost	Trended Original Cost 1 Yr. Average	Trended Original Cost 3 Yr. Average
Non-Revenue Construction Work in Progress (Notes A&B)				
Production		$448	$448	$448
Transmission		135	135	135
Distribution		431	431	431
General		357	357	357
Sub-Total		$1,371	$1,371	$1,371
Less: Associated Retirements (Note C)				
Production		$131	$281	$278
Transmission		13	26	26
Distribution		-	-	-
General		-	-	-
Sub-Total		$144	$307	$304
Total to (A-2)		$1,227	$1,064	$1,067

Notes: (A) Plant which would have improved quality and reliability of service in the test year but will not increase revenues or decrease expenses and which will be in service within 6 months after test year

(B) Total Construction Work in Progress as of 3/31/79 was: Electric $1,408,321

(C) Trended on Basis of Total Electric Plant T.O.C. to O.C. Ratios

Philadelphia Electric Company
NON-REVENUE PRODUCING CONSTRUCTION WORK IN PROGRESS AND COST TO COMPLETE
PRIOR TO OCTOBER 1, 1979 LESS ASSOCIATED RETIREMENTS
ELECTRIC PLANT
(Thousand $)

	C.A. Number	Additions: Expenditures As of 3/31/79	Additions: Estimated To Complete	Total	Estimated Original Cost Retired
Production					
Projects Required for Service Reliability and Quality					
Cromby					
Replace Incline Coal Belt	813919	$1	$57	$58	$27
Keystone					
Install Ammonia Flue Gas System	510008	64	3	67	-
Conemaugh					
Misc. Additions	610901	22	13	35	-
Cooling Tower Piping	711001	28	4	32	13
Eddystone					
Replace Main Incline Coal Belt	804901	49	10	59	43
Replace #2 Incline Coal Belt	813912	22	13	35	22
Schuylkill					
Improve Low Pressure Fuel Oil System	407001	56	10	66	-
Delaware					
Install Dissolved Oxygen Equipment	813918	13	20	33	-
Generating Stations Minor Equip. Changes					
Peach Bottom - Printers	809923	2	26	28	-
Barbadoes - 230V Load Center	401801	29	6	35	26
Total Production		$286	$162	$448	$131
Transmission					
Projects Required For Service Reliability and Quality					
Selected Substations					
Replace Cable	815906	$33	$1	$34	$4
Replace Cable	815907	40	1	41	4
Replace Cable	915902	59	1	60	5
Total Transmission		$132	$3	$135	$13
Distribution					
Projects Required For Service Reliability and Quality					
Fox Chase - Repl. Transformer	825903	$157	$274	$431	-
Total Distribution		$157	$274	$431	-
General					
Projects Required For Service Reliability and Quality					
2301 Market					
SAMAC Remote Hardware	548901	$194	$6	$200	-
SAMAC and Supervisory Control	748301	32	18	50	-
Cromby					
Additional Samac Points	815905	11	17	28	-
Planebrook					
Install Personnel Trailer	825918	9	30	39	-
Luzerne					
Install Personnel Facilities	848701	6	34	40	-
Total General		$252	$105	$357	-

Philadelphia Electric Company - Electric Operations
Land Held for Future Use (Account 105)
As of March 31, 1979
(Thousand $)

Location of Property	Date Originally Included in Plant Accounts	Date Construction Expected to Start	Balance
Production			
Land for Future Generation Stations			
Fulton Site, Lancaster Co., PA	1972	1988	$357
Total Production			$357
Transmission			
Land for Future Substations and Lines			
Cromby - N. Wales Line	1961	1982	$65
220 kV Line New Hope-Buckingham	1969	1983	173
Cromby - Plymouth Meeting Line	1966	1982	72
200 kV R/W Adj. to Waneeta Sub.	1973	1983	137
500 kV Line Bradford - Newlinville	1972	1988	1,253
Limerick Substation Site	1972	1982	15
Land for Expansion of Pres. Sta. & Lines			
Barbadoes - Cromby Line	1971	1982	43
Peach Bottom - Newlinville Line	1972	1988	161
Peach Bottom - Whitpain Line	1972	1985	892
Total Transmission			$2,811
Distribution			
Land for Future Substations			
Hays Substation	1961	1982	4
Woodside Substation	1957	1982	7
High Substation	1975	1984	13
Phillips Substation	1963	1984	3

Philadelphia Electric Company - Electric Operations
Land Held for Future Use (Account 105)
As of March 31, 1979
(Thousand $)

	Date Originally Included in Plant Accounts	Date Construction Expected to Start	Balance
Location of Property (cont'd)			
Land for Expansion of Pres. Stations			
Willis Substation	1974	1982	2
Hagys Substation	1974	1984	3
Bacton Substation	1974	1982	1
Salford Substation	1974	1984	4
Acorn Substation	1974	1982	2
Oaks Substation 33-4 kV	1974	1982	1
Moser Substation	1974	1987	1
Oaks Substation 33 kV	1974	1987	4
Matthews Substation	1974	1982	5
Creek Substation	1974	1983	2
Bootjack Substation	1957	1984	3
Landenberg Substation	1974	1983	4
Diltown Substation	1974	1981	11
Faggs Substation	1974	1983	1
Boyd Substation	1974	1982	2
Highland Substation	1974	1981	4
Byers Substation	1974	1981	10
Ship Substation	1974	1982	1
Page Substation	1974	1982	4
Pocopson Substation	1974	1981	4
Crest Substation	1974	1981	1
Tanguy Substation	1974	1984	5
Pennsbury Substation	1974	1981	9
Montgomery Substation	1968	1981	3
Folly Substation	1974	1981	1
Kellers Substation	1974	1983	3
Aque Substation	1974	1981	1
Wright Substation	1974	1983	2
Piper Substation 1974	1974	1981	2
Turk Substation	1974	1982	6
Canal Substation	1974	1981	5
Woodburne Substation	1974	1984	52
Broadale Substation	1974	1981	21
Worth Substation	1973	1984	1
Rickerts Substation	1974	1981	15
Total Distribution			$223
Total Land Held for Future Use			$3,034

Philadelphia Electric Company - Electric Operations
MATERIALS AND SUPPLIES
March 31, 1979
(Thousand $)

The adjustment to rate base for materials and supplies is shown below. Regarding electric fuel inventory, the quantities of fuel expressed in either tons of coal or barrels of oil represent design averages required to maintain an adequate fuel supply. The unit price for coal and oil represent the prices as of March 31, 1979.

Electric Fuel Inventory			
Coal			
Philadelphia Area	335,000 tons @ $34.94/ton =	$11,705	
Keystone	168,000 tons @ $26.34/ton =	4,425	
Conemaugh	166,000 tons @ $26.34/ton =	4,372	
Total Coal Inventory			$20,502
Oil			
No. 6	1,200,000 bbls @ $16.49/bbl =	$19,788	
No. 2	500,000 bbls @ $17.06/bbl =	8,530	
Total Oil Inventory			$28,318
Plant Materials and Supplies			
Electric operating			
Total	$26,097		
Less: Commission adjustment @ RID 438	5,000		
			$21,097
Tools and related equipment			
Electric			1,436
Stores Expense Undistributed			
Electric portion			686
Total Electric Materials and Supplies			$72,039

Philadelphia Electric Company - Electric Operations

AVERAGE ELECTRIC M&S AND
TOOLS AND RELATED EQUIPMENT
($1,000's)

	Coal	Oil	M&S	Tools and Related Equip.	Stores Exp. Undist. @ .85718	Total
March 1978	$16,487	$25,720	$26,056	$1,536	$808	
April	15,866	24,622	25,614	1,427	782	
May	17,772	23,115	25,757	1,445	774	
June	16,306	27,107	25,721	1,474	663	
July	14,442	29,186	26,724	1,487	746	
August	12,642	26,443	26,561	1,389	694	
September	11,498	27,336	26,200	1,235	697	
October	12,561	26,802	26,158	1,295	592	
November	16,551	28,169	25,724	1,408	582	
December	21,725	26,016	26,278	1,453	582	
January - 1979	21,523	25,820	26,726	1,517	579	
February	21,000	18,570	27,411	1,513	681	
March	22,174	26,022	24,335	1,491	742	
13 Month Total	$220,547	$334,928	$339,265	$18,670	$8,922	
13 Month Average	$16,965	$25,764	$26,097	$1,436	$686	$70,848

Philadelphia Electric Company - Electric Operations

CASH WORKING CAPITAL
MARCH 31, 1979
(Million $)

Operating and Maintenance Expense (Page C-25a)	$70.9
Taxes and Prepayments - Net (Col. 5 below)	(28.4)
Average Bank Balances (Col. 6 below)	10.5
Total (to A-2)	$53.0

Development of Thirteen Month Averages for Taxes, Prepayments & Bank Balances

	Taxes and Prepayments					Bank
	Taxes Accrued (1)	Collections Paid (2)	Taxes Prepaid (3)	Other Prepaid (4)	Net (5)=(1)+(2)-(3)-(4)	Balances (6)
March 1978	$79.7	$6.2	$0.7	$2.4	$82.8	$18.7
April	50.5	5.3	47.5	2.1	6.2	16.1
May	43.8	3.5	42.1	2.7	2.5	20.2
June	37.0	3.3	44.9	2.4	(7.0)	12.0
July	39.8	5.3	37.6	2.0	5.5	9.4
August	44.7	5.8	30.4	2.7	17.4	16.9
September	49.1	5.6	23.2	2.6	28.9	16.5
October	36.9	5.7	16.1	2.1	24.4	14.1
November	23.4	4.6	9.0	1.8	17.2	9.5
December	23.8	5.3	1.5	1.7	25.9	6.4
January 1979	38.9	6.1	1.3	2.0	41.7	0.2
February	52.0	5.8	1.1	2.2	54.5	15.0
March	64.2	6.5	1.0	2.6	67.1	4.5
Total	$583.8	$69.0	$256.4	$29.3	$367.1	$159.5
13 Month Average	$44.9	$5.3	$19.7	$2.3	$28.2	$12.3
Allocated to Electric - %	100.0 (a)	85.718 (B-19)	96.7 (b)	85.718 (B-19)		85.718 (B-19)
- $	$44.9	$4.5	$19.0	$2.0	$28.4	$10.5

Note A: Based on analysis of taxes charged - 12 months ended March 1979.

Taxes Charged to Operations	Amount ($1,000's)	% of Total
Electric		
Income Taxes	$4,352	5.1%
Taxes Other Than Income	81,716	95.0
Total Electric	$86,068	100.1
Gas & Steam	19,785	23.0
Total Operating	$105,853	123.1
Taxes Charged to Non-Operating		
Income Taxes	(28,045)	(32.6)
Taxes Other Than Income	318	.3
Total Non-Operating	($27,727)	(32.3)
Taxes Charged to Balance Sheet(CWIP)	7,948	9.2
Total Taxes Charged	86,074	100.0%

Note B: Based on Analysis of Tax Payment made April 30, 1979 ($1,000's)

	Gross Receipts Tax	Capital Stock Tax	CNI Tax	Total	%
Electric	$31,829	$7,626	$7,724	$47,179	96.7%
Gas	5,068	476	1,981	7,525	15.4
Steam	-	90	(87)	3	.0
Construction	-	-	(5,907)	(5,907)	(12.1)
Total	$36,897	$8,192	$3,711	$48,800	100.0

Philadelphia Electric Company - Electric Operations

CASH WORKING CAPITAL REQUIRED FOR
OPERATING AND MAINTENANCE EXPENSE
12 Months Ended March 31, 1979
(Thousand $)

	Dollars	Days
Average Lag in Receipt of Revenues		57 (a)
Average Lag in Payment of Operating Expenses		23 (b)
Average Lag in Days Between Receipt of Revenues and Payment of Operating Expenses		34
Proforma Test Year Operating and Maintenance Expense	$760,521	
Per Day ($760,521 ÷ 365)	$2,084	
Requirement ($2,084 x 34 days)	$70,856	

(a) Development of Average Days Lag in Receipt of Revenue

	Monthly Customers
Midpoint of billing period	15
Time to compute and prepare bill	4
Average time bill is outstanding	38 *
Total lag days in receipt of revenue	57

*Average during twelve months ended March 1979

Note (b)

Average Lag in Payment of Operating Expenses

	Actual	Proforma Adjustments	Proforma Expenses		
Payroll	$126,928	$2,082 (a)	$129,010	11	$1,419,110
Net Interchange and Purchased Energy	157,469	4,865 (b)	162,334	35	5,681,690
Coal	29,598	-	29,598	35	1,035,930
Coal Freight Bills	11,004	-	11,004	4	44,016
Oil	195,405	-	195,405	30	5,862,150
Other Invoices	225,680	7,490 (c)	233,170	15	3,497,550
Total Operating and Maintenance (B-9)	$746,084	$14,437	$760,521		$17,540,446

Average Lag in Days in Payment of Operating Expenses ($17,540,446 ÷ $760,521) 23

(a) Reference D-5
(b) Reference D-3
(c) Reference D-11, D-12, D-17

Philadelphia Electric Company - Electric Operations

ELIMINATION OF STATE TAXES AND RELATED STAC REVENUE
12 Months Ending March 31, 1979
(Thousand $)

Certain State Taxes are recovered by the State Tax Adjustment Clause (STAC) in the Company's tariff. The following adjustment removes the effect of higher state taxes enacted since 1969 and remove related STAC revenues.

State Taxes to be Removed		
Realty	$3,426 (a)	
Gross Receipts Tax	27,517 (b)	
Capital Stock Tax	5,558 (c)	
Corporate Net Income Tax	1,931 (d)	
Total		$38,432
Related STAC Revenue to be Removed		
Actual STAC	43,641	
Portion not removed	5,209	
Portion removed		38,432
Effect on income available for return		$0

(a) Actual Realty Tax from B-14

(b) Actual Gross Receipts Tax from B-14	53,560
Less: 4.5% GRT on STAC rev. of $43,641	1,964
Less: 4.5% GRT on FAC rev of $124,460	5,601
Remainder: 4.5% GRT on other revenue	$45,995
Portions of GRT related to 1970 tax rate increase	
Full GRT on STAC rev	$1,964
Excess GRT on other revenue	
$45,995 x (2.5% incr - 4.5% total)	25,553
Total	$27,517
(c) Actual Capital Stock Tax (CST) from B-14	$13,895
Portion of CST related to 1970 tax rate increase	
$13,895 x (0.4% incr - 1.0% total)	5,558
(d) Actual Corporate Net Income Tax (CNI) from B-14	$7,175
Plus: CNI portion of deferred taxes A/C liberalized depreciation on plant	(517)
CNI portion of deferred taxes on deferred fuel expense	(308)
Total	$6,350
Portion of CNI related to pre-1970 tax rates	
Actual test year taxable income for CNI	$71,365
Less: STAC revenue	43,641
Less: Excess depreciation	885
Plus: Realty Tax	3,426
Plus: STAC - related Gross Receipts Tax	27,517
Plus: STAC - related Capital Stock	5,558
Pre-1970 taxable income for CNI	$63,340
Pre-1970 CNI tax @ 6.977%	4,419
Portion of CNI related to 1970 tax rate increase ($6,350 - $4,419)	$1,931

Philadelphia Electric Company - Electric Operations

FULL YEAR EFFECT OF PRESENT BASE RATES
12 Months Ended March 31, 1979
(Thousand $)

Tariff No. 25 became effective March 2, 1979. The Company is entitled to recoup revenues under this tariff, retroactive to July 4, 1978. For book purposes, the Company has included $49,605 total recoupment revenue as part of Electric Operating Revenues. Of that amount $47,244 is base rate revenue.

This adjustment adds in the increase in base revenues that would have realized if Tariff No. 25 had been in effect during the period April 1, 1978 through July 3, 1978.

Also, with the new Energy Clause effective July 1, 1978, 0.77¢ per kWh was rolled out of the energy clause charge and rolled into base rates. This adjustment adds in the increase in base revenues that would have been billed during the period April 1, 1978 through July 3, 1978. Note, however, the roll-in does not affect operating income as a like amount of revenue is removed from the fuel adjustment.

Change in base revenue a/c Tariff No. 25 Full Year Effect	$26,615
Change in base revenue a/c EC roll-in	55,992
Change in Fuel Adjustment revenue a/c EC roll-in	(55,992)
Increase in revenue	$26,615
Less: Gross receipts tax @ 2.0%	532
Increase in revenue, after GRT	$26,083
Less: Income taxes @ 49.768%	12,981
Increase in income for return	$13,102

Philadelphia Electric Company - Electric Operations

SUMMARY OF ANNUALIZATION OF REVENUES, EXPENSES & TAXES
FOR CUSTOMERS ADDED AND INCREASED USAGE
12 Months Ended March 1979
(Thousand $)

	Total
Increase in Revenue (D-3a)	$12,840
Less: Gross Receipts Tax @ 2.0%	257
Increase in Revenue After Gross Receipts Tax	$12,583
Less: Increase in Operating Expenses 360,927,072 kWh (D-3a) x 1.3478¢/kWh (a)	4,865
Increase in Taxable Income	$7,718
Less: Income Taxes @ 49.768%	3,841
Increase in Income for Return	$3,877

(a) Cost of energy recovered in base rates. No claim is being made for incremental O & M associated with the increased sales.

Philadelphia Electric Company - Electric Operations

GROWTH IN USAGE OF EXISTING CUSTOMERS
AND ANNUALIZATION OF NEW CUSTOMER USAGE (a)
12 Months Ended March 31, 1979
(Thousand $)

	Residential	House Heating	Small Comm. & Industrial	Large Commercial & Industrial: 20 Largest Customers	Large Commercial & Industrial: All Other	Total
Growth in Usage of Existing Customers And Additional Revenue						
Annual Growth in kWh, 3-Yr. Average (D-3b)	(36)	445	672	13,787,967	27,690	
1/2 of Annual Growth in kWh	(18)	222	336	6,893,984	13,845	
No. of Custs. Beginning of Test Year (D-3b)	1,201,906	35,669	113,611	20	5,671	
Increase Usage	(21,634,308)	7,918,518	38,173,296	137,879,680	78,514,995	240,852,181
Revenue, cents per kWh (b)	5.35¢	3.81¢	5.80¢	2.85¢	3.42¢	
Increased Revenue, Thousand $	($1,157)	$302	$2,214	$3,930	$2,685	$7,974
Annualization of New Customer Usage and Additional Revenue						
Customers Added During Year (D-3b)	5,977	7,015	422	0	20	
1/2 of Customers Added During Year	2,989	3,507	211	0	10	
Average Use Per Customer in kWh (D-3b)	5,711	22,306	24,890	-	1,952,578	
Increased Sales in kWh	17,070,179	78,227,142	5,251,790		19,525,780	120,074,891
Revenue, Cents per kWh (b)	5.35¢	3.81¢	5.80¢		3.42¢	
Increased Revenue, Thousand $	$913	$2,980	$305	-	$668	$4,866
Total Additional Revenue	($244)	$3,282	$2,519	$3,930	$3,353	$12,840

a. Residential is total of Rates R and WH. House Heating is Rate RH. Small Commercial and Industrial is total of Rates GLP and GS. Large Commercial and Industrial is total of Rates PD and HT.

b. Revenue in cents per kWh is the average unit base revenue at Tariff No. 25 (page A-5, col. 6/col. 1)

Philadelphia Electric Company - Electric Operations

DEVELOPMENT OF AVERAGE ANNUAL GROWTH IN KWH PER CUSTOMER

	12 Months Ended March 1976	12 Months Ended March 1979	3-Yr. Avg.
Residential			
mWh Sales	6,852,279	6,864,919	
Number of Customers			
Beginning of Period	1,174,854	1,201,906	
End of Period	1,184,218	1,207,883	
Monthly Average	1,177,365	1,202,135	
kWh per Average Customer	5,820	5,711	
Growth in kWh per Average Customer -		(109)	(36)
House Heating			
mWh Sales	516,371	861,528	
Number of Customers			
Beginning of Period	23,095	35,669	
End of Period	26,413	42,684	
Monthly Average	24,622	38,623	
kWh per Average Customer	20,972	22,306	
Growth in kWh per Average Customer -		1,334	445
Small Commercial & Industrial			
mWh Sales	2,593,537	2,827,306	
Number of Customers			
Beginning of Period	114,660	113,611	
End of Period	112,708	114,033	
Monthly Average	113,379	113,591	
kWh per Average Customer	22,875	24,890	
Growth in kWh per Average Customer -		2,018	672

Philadelphia Electric Company - Electric Operations

DEVELOPMENT OF AVERAGE ANNUAL GROWTH IN KWH PER CUSTOMER

	12 Months Ended March 1976	12 Months Ended March 1979	3-Yr. Avg.
20 Largest Customers			
mWh Sales	4,214,029	5,041,307	
Number of Customers			
Beginning of Period	20	20	
End of Period	20	20	
Monthly Average	20	20	
kWh per Average Customer	210,701,450	252,065,350	
Growth in kWh per Average Cust.		41,363,900	13,787,967
Large Commercial & Industrial Other Than 20 Largest			
mWh Sales	10,514,109	11,084,785	
Number of Customers			
Beginning of Period	5,602	5,671	
End of Period	5,634	5,681	
Monthly Average	5,624	5,677	
kWh per Average Customer	1,869,507	1,952,578	
Growth in kWh per Average Customer		83,071	27,690

Philadelphia Electric Company - Electric Operations

ELIMINATION OF FOSSIL FUEL ADJUSTMENT AND
ENERGY CLAUSE REVENUE AND RELATED FUEL EXPENSE
12 MONTHS ENDED MARCH 31, 1979
(Thousand $)

During the test year ended March 31, 1979, the Company recovered fuel and energy expenses under the Fossil Fuel Adjustment Clause (FAC) until June 30, 1978 and under the Energy Clause (EC) for service rendered on an after July 1, 1978. The purpose of this adjustment is to remove from operations the effects of the FAC and EC revenues and establish revenues and expenses at the level of the base cost of energy (1.3478¢ per kWh) as defined in the current energy clause.

Fuel Revenue to be Removed		
Actual fuel revenue - 12 months ended 3/31/79		
Including GRT @ 4.5% (A-5)	$124,460	
Less: Fuel Rolled-into base rates		
Including GRT @ 2.0% (A-5)	55,992	
Revenue Over Base to be Removed		$68,468
Fuel Expenses to be Removed		
Total Energy Cost Allocated to PECo (D-4a)	$413,722	
Less: Actual fuel expense deferred		
12 Months Ended 3/31/79 (B-12)	(16,984)	
Net Fuel and Inventory Expense	$430,706	
Less: Fuel expense recovered in base rates		
Total applicable sales x base cost		
27,000,228 mWh x 1.3478¢/kWh	363,909	
Fuel Expense to be Removed		$66,797
Gross Receipts Tax to be Removed		
Gross Receipts Tax on Actual Fuel Revenue		
$124,460 x 4.5%	$5,601	
Less: Gross Receipts Tax on Roll-In Revenue		
$55,992 x 2.0%	1,120	
Gross Receipts Tax to be Removed		$4,481
Total Expenses to be Removed		$71,278
Increase in Taxable Income		$2,810
Income Tax @ 49.768%		1,398
Increase in Income for Return		$1,412

Philadelphia Electric Company - Electric Operations
PROFORMA ADJUSTMENT TO ELIMINATE THE EFFECTS OF
THE FOSSIL FUEL ADJUSTMENT CLAUSE
12 MONTHS ENDED MARCH 31, 1979

	Total Energy Cost (1)	Allocation Factor System to Company (2)	Energy Cost Applicable to P.E. Company (3)=(1)x(2)	Applicable Sales kWh (4)	Energy Cost Recovered In Base Rates (5)=(4)x1.3478¢	Recoverable Energy Cost (6)=(3)-(4)
Jan. 1978	34,714,543	0.9784	33,964,709	2,366,057,782	31,889,727	2,074,982
Feb.	28,146,722	0.9775	27,513,421	2,243,349,675	30,235,867	(2,722,446)
Mar.	29,231,222	0.9769	28,555,981	2,266,285,772	30,545,000	(1,989,019)
Apr.	32,188,303	0.9764	31,428,659	2,059,262,052	27,754,734	3,673,925
May	37,621,942	0.9764	36,734,064	1,999,277,145	26,946,257	9,787,807
Jun.	35,463,386	0.9769	34,644,182	2,208,609,810	29,767,643	4,876,539
Jul.	34,260,315	0.9776	33,492,884	2,276,460,452	30,682,134	2,810,750
Aug.	40,169,513	0.9780	39,285,784	2,542,934,355	34,273,669	5,012,115
Sept.	32,779,830	0.9784	32,071,786	2,461,544,699	33,176,699	(1,104,913)
Oct.	36,884,839	0.9786	36,095,503	2,081,964,693	28,060,720	8,034,783
Nov.	34,129,571	0.9784	33,392,372	2,041,544,813	27,515,941	5,876,431
Dec.	34,715,545	0.9778	33,944,860	2,227,007,975	30,015,613	3,929,247
Jan. 1979	36,193,787	0.9770	35,361,330	2,466,140,318	33,238,639	2,122,691
Feb.	38,773,023	0.9765	37,861,857	2,387,687,758	32,181,256	5,680,601
Mar.	30,134,573	0.9759	29,408,330	2,247,793,556	30,295,762	(887,432)
Total			413,721,611	27,000,227,626	363,909,067	49,812,544

	Actual Recoverable Fuel/ Energy Expense in the test year (7)	kWh Sales not Subject to Energy Clause Roll-In (8)	Additional Energy Roll-in Exlcuding Gross Receipts Tax (9)=(8)x0.7546¢	Actual Test Year Recoverable Excluding Effect of Roll-In (10)=(7)+(9)	Reduction in Recoverable Expense Due to Shift to Energy Clause (11)=(10)-(6)
Jan. 1978	25,831,910	2,366,057,782	17,854,272	7,977,638	5,902,656
Feb.	21,467,537	2,243,349,675	16,928,317	4,539,220	7,261,666
Mar.	21,088,027	2,266,285,772	17,101,392	3,986,635	5,975,654
Apr.	19,073,882	2,059,262,052	15,539,191	3,534,691	(139,234)
May	23,742,176	1,999,277,145	15,086,545	8,655,631	(1,132,176)
Jun.	20,002,504	2,208,609,810	16,666,170	3,336,334	(1,540,205)
Jul.	10,349,330	998,752,059	7,536,583	2,812,747	1,997
Aug.	5,055,387	5,732,883	43,260	5,012,127	12
Sept.	(1,104,913)	-	-	(1,104,913)	0
Oct.	8,034,783	-	-	8,034,783	0
Nov.	5,876,432	-	-	5,876,431	0
Dec.	3,929,247	-	-	3,929,247	0
Jan. 1980	2,122,691	-	-	2,122,691	0
Feb.	5,680,601	-	-	5,680,601	0
Mar.	(887,432)	-	-	(887,432)	0
Total Year End March 1980	101,874,687	7,271,633,949	54,871,749	47,002,938	(2,809,606)

Philadelphia Electric Company - Electric Operations

ESTIMATED EFFECT OF GENERAL AND MERIT WAGE
INCREASES AND INCREASED EMPLOYEE BENEFITS
Actual 12 Months Ended March, 1979
(Thousand $)

	Annual Cost (a)	Cost Included In Test Year Expenses	Adjustment to Reflect Full Year Effect
Increase in Benefits Effective 8/1/78			
Employee Benefits	$736	$491 (8 mos)	$245 (4 mos)
Hospitalization Benefits	670	447 (8 mos)	223 (4 mos)
Sub-Total Benefit Increases	$1,406	$938	$468
Plus: Annual Increase as a result of 8/1/79 Wage Package	1,330	-	1,330
Total Benefit Increases			$1,798
Increase in Wages Reflecting 8/1/79 Rates and Employees at 3/31/79 (D-5a)			11,755
Sub-Total			$13,553
Less: Income Taxes @ 49.768%			6,745
Decrease in Income for Return			$6,808

(a) Electric Operations Share of Total Company Cost

	Total	Electric Operations
Labor Dollars	$223,542	$139,231
Allocation % (based on 3/31/79 labor distribution)	100.0%	62.3%
Increase in employee benefits (8/1/78)	$1,182	$736
Increase in hospitalization expenses (8/1/78)	$1,076	$670
Increase in Pension & Benefits Expenses (8/1/79)	$2,135	$1,330

Philadelphia Electric Company - Electric Operations
INCREASES IN WAGES REFLECTING 3/31/79 RATES
AND NUMBER OF EMPLOYEES AT 3/31/79
(Actual)
(Thousand $)

The following calculation is made to determine the annual effect of the general wage increase which will become effective on 8/1/79. The method used in calculating this increase follows the methodology developed in the hearing examiner's report to the Commission at R.I.D. 295, which was subsequently approved by Commission in the order on that proceeding dated February 3, 1977.

Actual regular payroll - March 1979	17,068 (1)
March payroll ÷ No. of weekdays (22 days)	775.8
Annualized payroll at March 1979 rate (775.8 x 260 weekdays/year)	201,708
Annualized Payroll at March 1979 after 8/1/79 Increase (2)	216,231
Less: Regular Payroll - 12 Months Ended March 1979	199,399
Increased Wage Expense	$16,832
Add: Overtime at 12.1% (OT as percent of regular payroll Avg. for Year Ended 3/31/79 - See Appendix #1)	2,037
Increased Wage Expense for PE Company	$18,869
Allocated to Electric (62.3%)*	$11,755

(1) Actual payroll data - 12 months ended March 31, 1979

Month	Total Regular Payroll	Total No. of Employees
April 1978	$15,199	9,618
May	17,347	9,654
June	15,899	9,467
July	15,443	9,479
August	17,762	9,454
September	16,348	9,283
October	17,124	9,298
November	17,224	9,294
December	16,357	9,286
January	17,898	9,282
February	15,730	9,279
March	17,068	9,287
Total	$199,399	

(2) Actual 8/1/79 wage increase will be 7.2%

*Based on Electric portion of Philadelphia Electric Company Labor costs at 3/31/79. (See Appendix #1)

Philadelphia Electric Company - Electric Operations

ADJUST BOOK DEPRECIATION ACCRUAL TO CALCULATED
ACCRUAL RATE FOR YEAR-END PLANT AS OF MARCH 31, 1979
(Thousand $)

	Cost of Plant	S/L Accrual Rate	S/L Accrual Amount
Total Depreciable Plant for Ratemaking Purposes (C-17)	$3,270,094	2.94%	$96,096
Mothballed Plant Amortization (C-18a)			2,349
Allocated Common Plant, Excluding Transportation (C-20)	74,620	3.37	2,511
Calculated Depreciation Accrual			$100,956
Plus: Experienced Salvage Expense			$2,610 (1)
5-Year Amortization of P.B. #1			1,443 (2)
Total Calculated Depreciation incl. Salvage Expense & P.B. #1 Amortization			$105,009
Book Depreciation Accrual and Amortization (B-9)			104,901
Increase in Depreciation Accrual			$108
Decrease in Income for Return			$108

(1) Development of experienced net salvage expense for five years ended March 31, 1979

	Net Salvage Electric	Net Salvage Common
1974 - Last 9 months	($675)	($895)
1975	(1,692)	153
1976	(2,805)	(176)
1977	(2,784)	(420)
1978	(2,991)	(534)
1979 - First 3 months	(859)	65
Five Year Average excluding Common	($2,361)	($291)
Electric's Share of Common @ 85.718%	($249)	
Total Experienced Salvage Expense	($2,610)	

(2) Reference: RID 129

Philadelphia Electric Company
INCREASE IN INCOME TAX BY COMPUTING
TAX DEPRECIATION ON YEAR END BASE
AS OF MARCH 31, 1979
(Thousand $)

Tax Depreciation year ended 3/31/79				
Electric (D-7a)				$146,597
Common (D-7a)				
Allocated To:				
Electric	85.718%	3,418		3,418
Gas	12.869	513		
Steam	1.413	56		
Total	100.000%	3,987		
Electric including allocated common				$150,015
Less: Amortization of Anti-trust Settlement for Tax Purposes				411
Total Allowable Tax Depreciation & Amortization on year-end Basis at 3/31/79				$149,604
Less: Tax Depreciation accrued per books for 12 months ending 3/31/79 including allocated Common				
Book Depreciation (B-9)			$104,099	
Amortization of Anti-Trust (B-9)			(641)	
Add: Transportation Depreciation Charged to Clearing				
Electric	85.718%	2,110	2,110	
Gas	12.869	317		
Steam	1.413	35		
Total	100.000%	2,462		
Excess of Tax over Book Depreciation (B-15)			$57,507	
Total Accrued Tax Depreciation for 12 Months Ended 3/31/79				$163,075
Total Decrease in Tax Depreciation				$13,471
Increase in Income Tax @ 49.768%				$6,704
Decrease in Income for Return				$6,704

Philadelphia Electric Company - Electric Operations

DEPRECIABLE TAX BASES AND RESULTING DEPRECIATION
AS OF MARCH 31, 1979
(Thousand $)

Electric	Depreciation Base For Taxes (a)	Depreciation Rate For Taxes (b)	Tax Depreciation (c)
S/L Plant Installed Prior to 1954	$343,088	.59%	$2,010
Liberalized Plant Installed 1954-1969	367,521	6.67	24,504
Liberalized Plant Installed 1970	74,828	8.78	6,572
Liberalized Plant Installed 1971	74,545	11.44	8,528
Liberalized Plant Installed 1972	44,706	10.40	4,648
Liberalized Plant Installed 1973	76,250	10.22	7,795
Liberalized Plant Installed 1974	297,960	12.79	38,095
Liberalized Plant Installed 1975	69,900	9.41	6,580
Liberalized Plant Installed 1976	126,055	9.53	12,013
Liberalized Plant Installed 1977	236,360 (d)	12.05	28,471
Liberalized Plant Installed 1978	59,685	8.95	5,339
Liberalized Plant Installed 1979	22,609	9.03	2,042
Total	$1,793,507		$146,597
Tax Depreciation - Common			
S/L Plant Installed Prior to 1954	$7,162	1.66%	$119
Liberalized Plant Installed 1954 to 1969	8,172	4.69	383
Liberalized Plant Installed 1970	1,555	6.05	94
Liberalized Plant Installed 1971	449	8.69	39
Liberalized Plant Installed 1972	33,774	4.52	1,527
Liberalized Plant Installed 1973	1,602	10.55	169
Liberalized Plant Installed 1974	803	13.95	112
Liberalized Plant Installed 1975	880	25.91	228
Liberalized Plant Installed 1976	1,256	41.56	522
Liberalized Plant Installed 1977	1,131	14.59	165
Liberalized Plant Installed 1978	2,047	23.64	484
Liberalized Plant Installed 1979	651	22.27	145
Total	$59,482		$3,987

(a) Plant in Service at 3/31/79 less tax reserves as of 4/1/79.

(b) Depreciation rates are composites based on plant life estimates which are prescribed by U.S. Treasury Guideline Regulation as modified by ADR Rates incorporated in the 1971 Revenue Act.

(c) Liberalized Tax Depreciation has been computed under the declining balance method, switched to either straight line or sum-of-the-years method as appropriate.

(d) Includes $185,415 of net depreciable cost of Salem Unit 1, placed in service for tax purposes in December, 1976; but, not until June, 1977 for book purposes (date of commercial operation). Includes $2,917 of net depreciable cost of Keeney-Salem 500 kV transmission line, placed in service for tax purpose in February, 1972; but not until December, 1977 was the line energized.

Philadelphia Electric Company - Electric Operations
NORMALIZATION OF TAX DEFERRALS ON YEAR-END PLANT
AND ELIMINATION OF TAX DEFERRALS FROM 1970 TAX
LEGISLATION REFLECTED ON D-1
(Thousand $)

Plant		
Excess Depreciation (a) (D-8a)		$52,363
Common Allocated to Electric (b)		260
Total		$52,623
Tax Deferral on 3/31/79 Plant @ 49.768%		$26,189
Tax Deferral on Plant Per Books	$28,532 (c)	
Less: Deferred Tax Removed through STAC A/C Excess Depreciation on Plant (D-1)	(517)	
Net Per Books		29,049
Change in Tax Deferral on Plant		($2,860)
Fuel		
Fuel Expense Deferred 12 Months ended 3/31/79		($16,984)
Tax Deferral on fuel @ 49.768%		(8,453)
Tax Deferral on Fuel per books	($9,006)(c)	
Less: Deferred tax removed through STAC A/C Deferred	(308)	
Net per books		(8,698)
Change in tax deferred on fuel		245
Increase in Income for Return		$2,615

(a) The amounts reflected represent normalization of tax deferrals, generated by the use of liberalized tax depreciation for plant additions increasing capacity and installed after 1969, plus the deferral resulting from use of the Class Life System (ADR) of the Revenue Act of 1971. Pursuant to the Pa.P.U.C. Order dated 8/17/73 at RID 29, these figures exclude depreciation on plant replacing capacity.

(b) Allocation of Common:

	Percent (B-18)	Depreciation Subject to Normalization
Electric	85.718	260
Gas	12.869	39
Steam	1.413	4
Total	100.000%	303 (D-8a)

(c) Total provision for deferred income taxes as shown on B-9 is comprised as follows:

Portion a/c deferred fuel cost	($9,006)
Portion a/c excess depreciation on plant	28,532
Portion a/c polution control facilities	630
Portion a/c retroactive rate increase	26,221
	$46,377

Philadelphia Electric Company
TAX DEPRECIATION SUBJECT TO NORMALIZATION
NEW CAPACITY ONLY AS OF MARCH 31, 1979
(Thousand $)

	Depreciation Base			Depreciation Rate		Depreciation		
	For S/L Base	Tax Reserve	For Liberalized Base	Liberalized	S/L	Liberalized	S/L	Excess
Electric Plant								
1970	$129,200	$60,473	$68,727	8.97%	3.39%	$6,166	$4,381	$1,785
1971	141,317	74,326	66,991	11.78	3.39	7,891	4,786	3,105
1972	70,375	32,992	37,383	10.79	3.33	4,034	2,343	1,691
1973	110,698	46,286	64,412	10.54	3.40	6,792	3,760	3,032
1974	497,889	213,270	284,619	12.92	4.25	36,780	21,146	15,634
1975	76,064	22,374	53,690	9.70	3.46	5,206	2,630	2,576
1976	158,826	35,946	122,880	9.56	3.55	11,748	5,633	6,115
1977	285,987	55,301	230,686	12.14	4.68	27,998	13,372	14,626
1978	55,707	3,702	52,005	8.99	3.60	4,675	2,008	2,667
1979	21,177	241	20,936	9.09	3.64	1,903	771	1,132
Total	$1,547,240	$544,911	$1,002,329			$113,193	$60,830	$52,363
Common Plant								
1970	3,372	1,949	1,432	6.11%	1.84%	87	62	25
1971	2,643	2,449	194	12.37	.79	24	21	3
1972	39,875	11,288	28,587	4.51	2.25	1,290	896	394
1973	4,002	2,618	1,384	9.90	4.17	137	167	(30)
1974	1,185	787	398	11.06	4.30	44	51	(7)
1975	1,808	1,406	402	29.35	7.91	118	143	(25)
1976	3,235	2,408	827	51.75	17.93	428	580	(152)
1977	1,245	406	839	12.99	10.36	109	129	(20)
1978	1,076	100	976	11.58	5.58	113	60	53
1979	539	13	526	19.77	7.79	104	42	62
Total	$58,980	$23,424	$35,556			$2,454	$2,151	$303

Philadelphia Electric Company - Electric Operations

ADJUSTMENT OF INCOME TAXES TO REFLECT
PRO FORMA INTEREST CHARGES BASED ON
YEAR-END PLANT AND EMBEDDED COST OF DEBT

As permitted by the Pa. P.U.C. order dated August 17, 1973, the Company adopted Income Tax Allocation effective October 1, 1973, under which electric operating income is credited with the tax savings on interest charges associated with debt issued to finance plant actually in service.

This adjustment is necessary to reflect the pro forma interest chages on the level of plant in service as of March 31, 1979 and the 8.21% embedded cost of debt at 3/31/79 (Page B-19).

	(Thousand $)
Actual Test Year Interest Charges Allocated to Electric in Developing Operating Taxes (B-15)	117,378
Pro Forma Interest Charges Allocable to Electric Based on Year-End Plant in Service	
Original Cost Measure of Value at 3/31/79 (A-2)	2,480,358
Financed by Debt	
Percent	52.1%
Amount	1,292,267
Pro Forma Interest Charges Allocable to Electric for developing operating taxes (Embedded Debt Cost of 8.21%)	106,095
Decrease in Interest Charges Allocated to Electric Operations ($117,378 - $106,095)	$11,283
Increase in Income Taxes @ 49.768%	$5,615
Decrease in Income for Return	$5,615

Philadelphia Electric Company - Electric Operations

EFFECT ON TEST YEAR REVENUE RATE INCREASES
TO BORO OF LANSDALE AND CONOWINGO POWER COMPANY
12 Months March 31, 1979
(Thousand $)

Philadelphia Electric Company (PE) filed on May 31, 1978 with the Federal Energy Regulatory Commission higher rates for the sale of electricity to the Borough of Lansdale and Conowingo Power Company (CP). Both of these increases became effective subject to refund on September 1, 1978. This adjustment adds in the additional revenue that would be collected from a full year application of these increases.

Additional Assumed Revenue From Rates Subject to FERC Jurisdiction

	Lansdale	Conowingo	Total
Revenue at proposed rates	$4,254	$13,800	$18,054
Less: Actual revenue	3,802	12,675	16,477
Additional revenue, before reduction of 4.5% GRT	$452	$1,125	$1,577
Additional revenue, after deduction of 4.5% GRT (a)	$432	$1,125	$1,557
Less: Income taxes @ 49.768%	215	560	775
Increase in income for return	$217	$565	$782

(a) Gross Receipts tax only applicable to revenues from Pennsylvania consumers.

Philadelphia Electric Company - Electric Operations

ADJUSTMENT TO ELIMINATE THE OPERATION AND MAINTENANCE EXPENSES
ASSOCIATED WITH RICHMOND UNIT #12
AND BARBADOES UNITS #3 and #4 INCLUDED IN THE
TEST YEAR O&M FIGURES
($1,000's)

In 1979, the Company will retire those generating units designated Richmond 12 and Barbadoes 3 and 4. These facilities, which are currently classified as "mothballed", are being retired because current service requirement projections indicate that the capacity from these units will not be required in the early and mid-1980's as was previously believed.

The purpose of this adjustment is to eliminate from the test year the booked operation and maintenance expenditures associated with these units.

Operating cost 4/1/78-3/31/79	$598
Maintenance Cost 4/1/78-3/31/79	277
Total O&M included in test year	$875
Less: Income Tax @ 49.768%	435
Increase in Income for Return	$440

Philadelphia Electric Company - Electric Operations
MISCELLANEOUS EXPENSES, AMORTIZATION AND ADJUSTMENT
PROVIDED FOR IN PRIOR RATE PROCEEDINGS
AT MARCH 31, 1979

In prior proceedings the Commission, for ratemaking purposes, provided for the amortization or adjustment of certain types of expenses. An adjustment of book expense to reflect these provisions is developed below:

	$1,000's		
	Booked In Test Year (1)	Ratemaking Provision per PUC Order (2)	Adjustment (3)=(2)-(1)
Change in Operating & Maintenance Expense			
1. Amortize $2,055,000 of Storm Damage over 10 years (Re: RID 29)	-	206	206
2. Amortization of Rate Case Expenses Associated with RID 129 and RID 295 as allowed at RID 438	-	194	194
Amortization of Rate Case Expenses Associated with RID 438	443	170 (a)	(273)
Sub-Total - Change in O&M			127
Change in Income Taxes			
Decrease in income taxes a/c O&M expenses @ 49.768%			(63)
Amortization of $4,422 of Federal income tax deficiency charge over 5 years (Re: RID 438)			884
Net Change in Income Taxes			$821
Total decrease in Income for Return			$948

(a) Total cost associated with RID 438 ($850,000) amortized over 5 years.

Philadelphia Electric Company - Electric Operations

ADJUSTMENT TO ELIMINATE THE OPERATION
AND MAINTENANCE EXPENSES (EXCLUDING FUEL) AND ITC EFFECTS
ASSOCIATED WITH SALEM UNIT #2
INCLUDED IN THE TEST YEAR ENDING MARCH 31, 1980

Not Applicable.

Philadelphia Electric Company - Electric Operations

ADJUSTMENT TO RECOGNIZE THE CHANGE IN THE
FEDERAL INCOME TAX RATE FROM 48% TO 46%
12 MONTHS ENDED MARCH 31, 1979
(Thousand $)

Effective 1/1/79 the Federal income tax rate changed from a statutory rate of 48% to 46%.

This adjustment reflects the Federal income tax paid on a proforma 46% tax rate.

Federal Income Tax Base (B-15)		$63,881
Federal Income Tax @ 46%		29,385
Less:	Surtax Exemption	2
	Investment Tax Credit	21,514
	Consolidated Savings	534
Add:	Unused Investment Tax Credit Carryback	(11,775)
	Capital Gains Tax	60
	Prior Period Adjustment	325
Net Federal Income Tax @ 46% Rate		($4,055)
Net Federal Income Tax Per Books (B-15)		(3,194)
Decrease in Federal Income Tax		861
Increase in Income for Return		$861

Philadelphia Electric Company - Electric Operations

FEDERAL OLD AGE BENEFITS
FOR THE YEAR ENDED 3/31/79
(Thousand $)

Effective 1/1/79 the wage base subject to federal old age benefits tax was increased to $22,900 while the rate of tax increased from 6.05% to 6.13%.

Effective 1/1/80 the wage base subject to federal old age benefits tax will be increased to 25,900 from 23,900 while the rate of tax will remain at 6.13%.

Developed below is the increase in expense on account of the above increases.

Total Company	
Annualized effect of 1/1/80 base and rate	$13,788
Actual included in test year ended 3/31/79	9,644
Increase in Federal Old Age Benefits	$4,144
Allocation to Electric Operations $4,144 x 62.3% (a)	$2,582
Decrease in income taxes @ 49.768%	1,285
Decrease in income for return	$1,297

(a) Based on 12 months ended March 31, 1979 (Ref. Page D-5 of Exh. DPS-1).

Philadelphia Electric Company - Electric Operations

DECOMMISSIONING COST ADJUSTMENT FOR
PEACH BOTTOM NO. 2 & 3 AND SALEM NO. 1
($1,000's of 1980 Dollars)

This adjustment provides for the decommissioning expense in the year 2008 of three nuclear units - Peach Bottom Units No. 2 and 3 and Salem Unit No. 1. The adjustment in 1980 dollars is based on PE's share of the decommissioning cost for the three units which amounts to $100,765. The annual amount to be collected from customers is an amortization of the $100,765 decommissioning cost over the 28-year period 1980 through 2008. A detailed description of the estimated decommissioning cost is provided in Statement 12, The Direct Testimony of W. B. McLeod.

PE Share of Decommissioning Cost	$100,765	
Annual Accrual for Decommissioning ($100,765 ÷ 28 years)	$3,599	
Change in Deferred Income Taxes @ 49.768%	(1,791)	(a)
Decrease in Income for Return	$1,808	

(a) Although decommissioning expenses are not currently deductible for tax purposes, the Company will accrue deferred tax credits associated with the decommissioning expenses.

Philadelphia Electric Company - Electric Operations

SPENT FUEL DISPOSAL COST ADJUSTMENT
FOR PEACH BOTTOM NO. 2 & 3 AND SALEM NO. 1
($1,000 of 1980 Dollars)

This adjustment provides for the cost of disposing spent fuel due to be discharged from Peach Bottom No. 2 & No. 3 and Salem No. 1 beginning in 1985. This adjustment (in 1980 dollars) is based on PE's share of the spent fuel disposal costs for the three units which amounts to $230,677. A detailed description of these costs is provided in Statement 12, The Direct Testimony of W. B. McLeod.

PE Share of Spent Fuel Disposal Costs	$230,677
Annual Accrual for Spent Fuel Disposal ($230,677 ÷ 28 years)	$8,238
Change in Deferred Income Taxes at 49.768%	(4,100)(a)
Decrease in Income For Return	$4,138

(a) Although spent fuel disposal costs are not currently deductible for tax purposes, the Company will accrue deferred tax credits associated with the spent fuel disposal costs.

Philadelphia Electric Company - Electric Operations

NORMALIZATION OF INCOME TAXES ASSOCIATED
WITH ADR REPAIR ALLOWANCE
12 MONTHS ENDING MARCH 1979

Pursuant to the PUC Order at RID 438 the Company adopted the ADR Repair Allowance in its 1978 Federal Income Tax Return. The Company is now accruing and flowing through the tax deferrals resulting from this election. For the test year ending March 1979 the tax flow through amounts to $3,006(a).

This adjustment normalizes the reduction in income taxes associated with the estimated allowable ADR Repair Allowance for the twelve month ending March 1979 over a 30-year period. The effects on income for return of the tax amortization and resulting deferrals are detailed below:

Increase in income taxes (with normalization)	$3,006
Amortization over 30 years	100
Increase in Income Taxes Deferred	$2,906
Decrease in Income for Return	$2,906

(a) ADR Repair Allowance (Reference page B-15) = $6,040
Effective Tax Rate = 49.768%
Tax Flow Through = $3,006

Philadelphia Electric Company
Payroll Data
(Thousand $)

Month	Total PE Company (1)	PE Company Electric Oper. (2)	PE Company Overtime (3)	PE Company Regular Payroll (4)=(1)-(3)	Electric Oper. As % of Total Payroll (5)=(2) (1)	OT as % of PE Regular Payroll (6)=(3) (4)
April 1978	$17,403	$10,321	$2,204	$15,199	59.3%	14.5%
May	19,115	11,601	1,768	17,347	60.7	10.2
June	17,501	10,751	1,602	15,899	61.4	10.1
July	17,084	10,949	1,641	15,443	64.1	10.6
August	19,611	12,278	1,849	17,762	62.6	10.4
September	18,849	11,505	2,501	16,348	61.0	15.3
October	19,585	11,888	2,461	17,124	60.7	14.4
November	18,991	12,071	1,767	17,224	63.6	10.3
December	18,114	11,407	1,757	16,357	63.0	10.7
January - 1979	20,011	12,612	2,113	17,898	63.0	11.8
February	18,005	11,685	2,275	15,730	64.9	14.5
March	19,273	12,163	2,205	17,068	63.1	12.9
Total	$223,542	$139,231	$24,143	$199,399	62.3	12.1

Appendix #1

EXHIBIT DPS-2
Hbg. 10-24-

PHILADELPHIA ELECTRIC COMPANY

ELECTRIC OPERATIONS

REVENUE, EXPENSES, INCOME & MEASURES OF VALUE

TWELVE MONTHS ENDING
MARCH 31, 1980

JULY 27, 1979

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Philadelphia Electric Company - Electric Operations

INCOME AVAILABLE FOR RETURN
12 MONTHS ENDED MARCH 31, 1980 (ESTIMATED)
(Thousand $)

	Actual (B-9) (1)	Adjustments to Rate-Making Basis (A-3) (2)	Proforma Present Rates (3)=(1)+(2)	Supplement No. 6 Rate Increase (4)	Supplement No. 6 Proforma Proposed Rates (5)=(3)+(4)
Operating Revenue	$1,253,200	($89,048)	$1,164,152	$122,731	$1,286,883
Operating Expenses					
Operating & Maintenance Expense	765,385	(41,320)	724,065	0	724,065
Depreciation and Amortization Expense Including Salvage	112,491	364	112,855	0	112,855
Provision for Taxes					
Taxes Other Than Income	88,349	(43,468)	44,881	2,455	47,336
Income Taxes	35,609	18,648	54,257	59,859	114,116
Provision for Deferred Income Taxes	(4,817)	(7,137)	(11,954)	0	(11,954)
Income Taxes Deferred Prior Years-Cr.	(1,730)	0	(1,730)	0	(1,730)
Investment Tax Credit Adjustment-(Net)	41,015	700	41,715	0	41,715
Total Taxes	$158,426	($31,257)	$127,169	$62,314	$189,483
Gain Or Loss from Sale of Plant	(58)	0	(58)	0	(58)
Total Operating Expenses	$1,036,244	($72,213)	$964,031	$62,314	$1,026,345
Operating Income Available for Return	$216,956	($16,835)	$200,121	$60,417	$260,538
Proforma Rate of Return					
On $2,501,021 Original Cost Measure			8.00%		10.42%
On $3,311,042 Average of O.C. and 3-Yr. TOC			6.04%		7.87%

Components of Rate of Return (PE Company)

Capitalization	Amount	Ratio	Cost	Wt. Cost
Long Term Debt	$2,355,792	.521	8.31%	4.33%
Preferred Stock	579,672	.128	7.80	1.00
Common Equity	1,582,820	.351	14.50	5.09
	$4,518,284	1.000		10.42%

Philadelphia Electric Company - Electric Operations

MEASURES OF VALUE
AT MARCH 31, 1980
(Thousand $)

	Reference	Original Cost	One-Year Trended Cost	Three-Year Trended Cost
Utility Plant in Service				
Electric	C-9	$3,455,500	$7,133,558	$6,873,984
Allocated Common	C-9	99,370	188,190	180,369
Total		$3,554,870	$7,321,748	$7,054,353
Less: Calculated reserve on Plant in Service	C-9	1,013,688	3,006,028	2,892,969
Depreciated Utility Plant		$2,541,182	$4,315,720	$4,161,384
Plus: Salem Unit #1 Nuclear Fuel	B-21	$13,414	$13,414	$13,414
Non-Revenue Producing CWIP	C-22	1,227	1,064	1,067
Land Held for Future Use	C-23	3,034	3,034	3,034
Materials and Supplies	C-24	88,389	88,389	88,389
Cash Working Capital	C-25	52,276	52,276	52,276
Total Additions		$158,340	$158,177	$158,180
Less: Accumulated Deferred Income Taxes				
Accelerated Amortization	B-2	6,630	6,630	6,630
Liberalized Depreciation on Plant in Service	B-16	188,735	188,735	188,735
Customer Deposits	B-2	2,794	2,794	2,794
Customer Advances	B-2	342	342	342
Total Deductions		$198,501	$198,501	$198,501
Measures of Value		$2,501,021	$4,275,396	$4,121,063

Philadelphia Electric Company - Electric Operations

ADJUSTMENTS TO INCOME AVAILABLE FOR RETURN
12 Months Ended March 31, 1980
(Thousand $)

Test Year Adjustments	Section and Page	Operating Revenues (1)	Operating Expense Excl. Taxes (2)	Taxes Other Than Income (3)	State Share of Income Taxes (4)=14.019% of Total	Federal Share of Income Taxes (5)=85.981% of Total	Effect on Income for Return (6)=(1)-(2)-(3)-(4)-(5)
Elimination of STAC Revenue & Taxes	D-1	($45,911)	$0	($42,143)	($3,768)	$0	$0
Full Year Effect of Present Base Rates	D-2						0
Annualization for Growth & Customers	D-3	6,765	2,575	135	283	1,735	2,037
Elimination of Energy Cost Adjustment	D-4	(49,902)	(47,656)	(2,246)	0	0	0
Wage & Benefit Increases	D-5	0	4,631	0	(323)	(1,982)	(2,326)
Book Depreciation to Calculated Depreciation at Year end, incl. Salvage	D-6	0	(2,620)	0	0	0	2,620
Tax Depreciation to Year End	D-7				2,201	13,501	(15,702)
Normalization of Tax Deferrals	D-8				(1,101)	(6,750)	7,851
Tax Savings on Proforma Interest	D-9	0	0	0	815	4,996	(5,811)
Annualization of Rev. Under FERC Jurisdiction	D-10						0
Reduction in O&M due to retirement of Mothballed Units	D-11	0	(645)	0	45	276	324
Miscellaneous Adjustments & Amortizations	D-12	0	34	0	122	745	(901)
Elimination of Salem #2 O&M and ITC	D-13	0	(3,767)	0	263	2,312	1,192
Full Year Effect of 46% Federal Income Tax Rate	D-14						0
Full Year Effect of Increase in Social Security Taxes	D-15	0	0	786	(55)	(336)	(395)
Decommissioning Cost Adjustment	D-16	0	2,984	0	(208)	(1,277)	(1,499)
Spent Fuel Disposal Cost Adjustment	D-17	0	3,508	0	(245)	(1,501)	(1,762)
Normalization of Repair Allowance	D-18				345	2,118	(2,463)
Total		($89,048)	($40,956)	($43,468)	($1,626)	$13,837	($16,835)

Philadelphia Electric Company - Electric Operations

EFFECTS ON INCOME FOR RETURN
OF SUPPLEMENT NO. 6
12 Months Ending March 31, 1980
(Thousand $)

Increase in base revenue (A-5)	$122,731
Less: 2% Gross Receipts Tax	2,455
Increase in income before taxes	$120,276
Increase in Income taxes @ 49.768%	59,859
Income in Income for return	$60,417

Philadelphia Electric Company - Electric Operations
Kilowatt Hour Sales and Revenue by Tariff Subdivisions
Twelve Months Ended March 31, 1980
($1,000)

	mWh Sales Year Ended 3/31/80 (1)	Number of Customers 3/31/80 (2)	Total Book Revenue (3)	Less: Book STAC (4)	Less: Book Energy Clause Rev. (5)	Base Revenue (6)=(3)-(4+5)	Supplement No. 6 Proposed Base Revenue (7)	Supplement No. 6 Proposed Increase (8)=(7)-(6)	Supplement No. 6 % Increase (9)=(8)÷(6)
Electric Tariff No. 25									
R	6,351,590	1,103,000	$377,614	$15,259	$11,478	$350,877	$395,339	$44,462	12.7%
RH	960,540	46,900	39,646	1,563	1,921	36,162	40,030	3,868	10.7
WH	509,120	110,296 (a)	17,718	697	943	16,078	17,611	1,533	9.5
POL	9,190	4,250 (a)	1,244	49	18	1,177	1,177	0	0.0
GLP	43,020	7,700	2,670	108	75	2,487	2,662	175	7.0 (b)
GS-Without Demand Measurement	122,744	35,570	10,141	411	281	9,449	10,384	935	9.9
GS-With Demand Measurement	2,669,356	71,150	164,226	6,642	4,819	152,765	160,403	16,638	10.9
PD-(Incl. Riders)	2,441,300	3,754	111,403	4,458	4,428	102,517	113,722	11,205	10.9
HT-(Incl. Riders)	13,794,500	2,004	470,399	18,542	25,345	426,512	466,504	39,992	9.4
SLP	107,186	2	7,054	288	206	6,560	7,419	859	13.1
SLS	60,568	421	8,992	369	111	8,512	9,808	1,296	15.2
MLP	100,240	1,468	5,994	244	188	5,562	6,318	756	13.6
FLP	16,100	342	980	40	30	910	1,027	117	12.9
TL	31,490	186	1,771	72	59	1,640	1,820	180	11.0
SLI	70	2	5	0	0	5	6	1	-
Transformer Rental Rider	-	496 (a)	288	12	0	276	306	30	10.9
Total Electric Tariff No. 25	27,217,014	1,272,499	$1,220,145	$48,754	$49,902	$1,121,489	$1,243,536	$122,047	10.9%
Other Electric Operations	596,116	2	33,055	0	0	33,055	33,055	0	
Total Electric	27,813,130	~~1,272,976~~ 1,274,501	$1,253,200	$48,754	$49,902	$1,154,544	$1,276,591	$122,047	10.6%
Plus: STAC in Excess of STAC Related Taxes (D-1)						2,843	2,843	0	
Plus: Additional Revenue from Growth Adjustment (D-3)						6,765	7,449	684	
Total Revenue						$1,164,152	$1,286,883	$122,731	10.5%

(a) Duplicate customers not included in total.
(b) Reflects effects of transfers of existing Rate GLP customers to either Rate R or Rate GS. All customers remaining on Rate GLP will receive an approximate 20% increase.

Philadelphia Electric Company - Electric Operations

SUMMARY OF CUSTOMERS INCREASED OR DECREASED AND
DOLLAR INCREASES OR DECREASES BY TARIFF SUBDIVISION
March 31, 1980
(Thousand $)

	Increases		Decreases	
Tariff Subdivision	Customers	$ Increases	Customers	$ Decreases
R	1,103,000	$44,462,000	0	$0
RH	46,900	3,868,000	0	0
WH	97,361 (a)	2,168,000	12,935 (a)	635,000
POL	0	0	0	0
GLP	7,700	175,000	0	0
GS-W/O Demand Measurement	35,463	937,000	107	2,000
GS-W/Demand Measurement	64,524	16,797,000	6,626	159,000
PD	3,744	11,211,000	10	6,000
HT	1,996	40,001,000	8	9,000
SLP	2	859,000	0	0
SLS	421	1,296,000	0	0
MLP	1,454	810,000	14	54,000
FLP	340	119,000	2	2,000
TL	186	180,000	0	0
BLI	2	1,000	0	0
Transformer Rental Rider	496 (a)	30,000	0	0
Total Tariff No. 25 (To A-5)(a)	1,265,732	$122,914,000	6,767	$867,000

(a) Duplicate Customers not included in total.

Philadelphia Electric Company - Combined Operations
BALANCE SHEET
March 31, 1980
(Thousand $)

ASSETS AND OTHER DEBITS	COMPANY
Utility Plant	
Electric	$5,234,533
Gas	308,044
Steam	54,996
Common	118,076
Total Utility Plant	$5,715,649
Less Provision for Depreciation	
Electric	$1,030,431
Gas	58,632
Steam	25,532
Common	33,591
Total	$1,148,186
Net Utility Plant	$4,567,463
Nuclear Fuel	147,826
Net Utility Plant, incl. Nuclear Fuel	$4,715,289
Other Property and Investments	
Non-Utility Property	$12,599
Less Provision for Depreciation	(2,055)
Investments in Subsidiary Companies	94,053
Other Investments	67
Total	$104,664
Current and Accrued Assets	
Cash	$4,500
Special Deposits	4,200
Working Funds	4,000
Temporary Cash Investments	55,080
Notes Receivable	325
Accounts Receivable	180,600
Receivables from Associated Companies	2,000
Materials and Supplies	107,100
Prepayments	3,800
Interest and Dividend Receivable	-
Deferred Fuel Expense	(12,590)*
Total	$349,015
Deferred Debits	
Unamortized Debt Expense	$2,600
Extraordinary Property Losses	0
Clearing Accounts	2,200
Research and Development Expenditures	900
Miscellaneous Deferred Debits	2,900
Unamortized Loss on Reacquired Debt	18
Total	$8,618
TOTAL ASSETS AND OTHER DEBITS	$5,177,586

*Electric portion ($22,459)

Philadelphia Electric Company - Combined Operations
BALANCE SHEET
March 31, 1980
(Thousand $)

LIABILITIES AND OTHER CREDITS	COMPANY
Proprietary Capital	
Common Capital Stock	$1,237,000
Preferred Capital Stock	579,672
Premium on Preferred Stock	1,214
Other Paid in Capital	864
	$1,818,750
Retained Earnings	343,742
Total	$2,162,492
Long-Term Debt	
Bonds	$1,967,500
Advances from Subsidiary Companies	-
Pollution Control Notes	33,000
Other Long Term Debt	225,397
Unamortized Premium on Long Term Debt	880
Unamortized Discount on Long Term Debt	(6,000)
Total	$2,220,777
Current and Accrued Liabilities	
Short-Term Debt - Bank Loans	-
- Commercial Paper	$13,000
Current Maturities of Long-Term Debt	129,895
Accounts Payable	82,850
Payables to Associated Companies	30
Customers' Deposits	2,950 (a)
Taxes Accrued	68,000
Interest Accrued	42,700
Dividends Declared	44,000
Tax Collections Payable	6,900
Miscellaneous Current & Accrued Liabilities	10,380
Deferred Income Taxes on Fuel	(6,415) (b)
Total	$394,290
Deferred Credits	
Customers' Advances for Construction	$350 (c)
Accumulated Deferred Investment Tax Credits	178,997
Other Deferred Credits	7,300
Unamortized Gain on Reacquired Debt	2,350
Accumulated Deferred Income Taxes	
Accelerated Amortization Property	6,630
Other Property	207,159
Other	2,759
Total	$400,027
TOTAL LIABILITIES AND OTHER CREDITS	$5,177,586

(a) Electric portion $2,794
(b) Electric portion ($11,688)
(c) Electric portion $342

Philadelphia Electric Company - Electric Operations

ELECTRIC PLANT
AT MARCH 31, 1980
(Thousand $)

Electric Plant In Service		
Intangible Plant		
302.	Franchises and Consents	$163
Production Plant		
Steam Production Plant		
310.	Land and Land Rights	7,624
311.	Structures and Improvements	170,812
312.	Boiler Plant Equipment	481,578
314.	Turbogenerator Units	184,491
315.	Accessory Electric Equipment	97,027
316.	Miscellaneous Power Plant Equipment	12,185
	Total Steam Production Plant	$953,717
Nuclear Production		
320.	Land and Land Rights	338
321.	Structures and Improvements	272,365
322.	Reactor Plant Equipment	436,599
323.	Turbogenerator Units	178,701
324.	Accessory Electric Equipment	138,355
325.	Miscellaneous Power Plant Equipment	28,862
	Total Nuclear Production Plant	$1,055,220
Hydraulic Production		
330.	Land and Land Rights	1,401
331.	Structures and Improvements	14,270
332.	Reservoirs, Dams and Waterways	34,279
333.	Water Wheels, Turbines and Generators	21,802
334.	Accessory Electric Equipment	7,535
335.	Miscellaneous Power Plant Equipment	3,430
336.	Roads, Railroads and Bridges	998
	Total Hydraulic Production Plant	$83,715
Other Production Plant		
340.	Land and Land Rights	848
341.	Structures and Improvements	7,897
342.	Fuel Holders, Producers and Accessories	12,782
343.	Prime Movers	3,554
344.	Generators	101,893
345.	Accessory Electric Equipment	11,319
346.	Miscellaneous Power Plant Equipment	949
	Total Other Production Plant	$139,242
Total Production Plant		$2,231,894

Philadelphia Electric Company - Electric Operations

ELECTRIC PLANT
AT MARCH 31, 1980
(Thousand $)

Electric Plant In Service (Continued)

Transmission Plant		
350.	Land and Land Rights	39,065
352.	Structures and Improvements	12,175
353.	Station Equipment	164,011
354.	Towers and Fixtures	144,818
355.	Poles and Fixtures	577
356.	Overhead Conductors and Devices	63,182
357.	Underground Conduit	2,747
358.	Underground Conductors and Devices	33,928
359.	Roads and Trails	1,705
	Total Transmission Plant	$462,208
Distribution Plant		
360.	Land and Land Rights	18,739
361.	Structures and Improvements	28,265
362.	Station Equipment	256,846
364.	Poles, Towers and Fixtures	105,171
365.	Overhead Conductors and Devices	167,763
366.	Underground Conduit	129,281
367.	Underground Conductors and Devices	182,910
368.	Line Transformers	120,527
369.	Services	61,930
370.	Meters	64,025
371.	Installations on Customers' Premises	317
373.	Street Lighting and Signal Systems	21,897
	Total Distribution Plant	$1,157,671
General Plant		
389.	Land and Land Rights	1,987
390.	Structures and Improvements	12,488
393.	Stores Equipment	448
394.	Tools, Shop and Garage Equipment	3,247
395.	Laboratory Equipment	4,568
397.	Communication Equipment	530
398.	Miscellaneous Equipment	761
	Sub-Total	$24,029
399.	Other Tangible Property Antitrust Price Adjustment	(6,041)
	Total General Plant	$17,988
Total Electric Plant In Service (carried forward)		$3,869,924

Philadelphia Electric Company - Electric Operations

ELECTRIC PLANT
AT MARCH 31, 1980
(Thousand $)

Total Electric Plant In Service (brought forward)	$3,869,924
Construction Work in Progress	1,349,551
Plant Held for Future Use	
Land and Land Rights	13,980
Other Than Land and Land Rights	1,078
Total	$15,058
Total Electric Plant	$5,234,533

Philadelphia Electric Company - Electric Operations

COMMON UTILITY PLANT
AT MARCH 31, 1980
(Thousand $)

Intangible Plant		
301.	Organization	$677
General Plant		
389.	Land and Land Rights	2,020
390.	Structures and Improvements	74,361
391.	Office Furniture and Equipment	8,147
392.	Transportation Equipment	21,695
393.	Stores Equipment	677
394.	Tools, Shop and Garage Equipment	4,674
396.	Power Operated Equipment	1,954
397.	Communication Equipment	20
398.	Miscellaneous Equipment	1,701
	Total - General Plant	$115,249
Total Common Utility Plant in Service		$115,926
Construction Work in Progress		1,205
Plant Held for Future Use (Land and Land Rights)		945
Total Common Utility Plant		$118,076

Philadelphia Electric Company
BOOK RESERVE FOR DEPRECIATION - ELECTRIC OPERATIONS
MARCH 31, 1980
(Thousand $)

Book depreciation reserve information is not maintained by detailed plant accounts, but is maintained in total, respectively for Electric, Gas, Steam and Common plant as shown on the balance sheet. The reserve for Electric Operations, including allocated common, is developed as follows:

Reserve for Depreciation - Electric	
New Generating Stations	
Peach Bottom No. 2 & 3	$55,087
Eddystone No. 3	26,416
Eddystone No. 4	9,829
Croydon	13,073
Salem No. 1	32,279
Salem No. 2	4,219
Other	889,528
Total Electric (B-1)	$1,030,431
Share of Common $33,591 (B-1) x 85.718 (B-17)	28,794
Total	$1,059,225

Philadelphia Electric Company and Subsidiary Companies

12 MONTHS ENDING MARCH 31, 1980
CONSOLIDATED STATEMENT OF INCOME
(Thousand $)

Operating Revenue	
Electric	$1,263,042
Gas	175,417
Steam	36,955
Total Operating Revenue	$1,475,414
Operating Expenses	
Total Operation and Maintenance	942,074
Provision for Depreciation and Amortization	125,687
Provision for Taxes	
Federal Income Taxes	(29,186)
State and Local Income Taxes	8,278
Investment Tax Credit Adjustments-Net	58,203
Deferred Income Taxes	33,570
Taxes Other Than Income	102,488
Total Provision for Taxes	173,353
Gain or Loss from Disposition of Utility Plant	(57)
Total Operating Expenses	1,241,057
Operating Income	234,357
Other Income	
Allowance for Other Funds Used During Construction	45,650
Other Income and Deductions	2,734
Income Taxes	32,457
Total Other Income	80,841
Income Before Interest Charges	315,198
Interest Charges	
Interest on Long-Term Debt	193,137
Other Interest	2,451
Allowance for Borrowed Funds - Credit	(64,831)
Total Interest Charges	130,757
Net Income	184,441
Dividends on Preferred Stocks	46,453
Earnings Available for Common Stock	$ 137,898
Common Stock Outstanding	
End of Period (1000)	83,673
Average (1000)	81,515
Earnings per average share (dollars)	$1.692

Philadelphia Electric Company - Electric Operations
STATEMENT OF ELECTRIC OPERATING INCOME
(Thousand $)

		12 Months Ended 3/31/80
OPERATING REVENUE		
	Sales of Electricity:	
440	Residential	$434,978
442	Small Commercial & Industrial	178,281
	Large Commercial & Industrial	552,765
444	Public Street and Highway Lighting	16,046
445	Other Sales to Public Authorities	8,745
446	Sales to Railroads and Railways	29,037
447	Sales for Resale	17,738
448	Interdepartmental Sales	2,060
	Total Sales of Electricity	$1,239,650
	Other Operating Revenues:	
450	Forfeited Discounts	4,964
451	Miscellaneous Service Revenues	95
453	Sale of Water & Water Power	-
454	Rent from Electric Property	2,789
455	Interdepartmental Rents	1,995
456	Other Electric Revenues	3,707
	Total Other Operating Revenues	$13,550
	Total Electric Operating Revenues	$1,253,200
OPERATING EXPENSES		
401	Operation and Maintenance Expense:	
	Power Production	570,310
	Transmission	20,153
	Distribution	58,635
	Customer Accounts	46,400
	Customer Service & Information	3,149
	Sales	460
	Administrative and General Expense	66,278
	Total Operation and Maintenance Expense	765,385
403	Depreciation Expense	112,900
405	Amortization of Other Electric Plant	(641)
407	Amortization of Property Losses	232
	Taxes	
408.1	Taxes Other Than Income Taxes	88,349
409.1	Income Taxes	35,609
410.1	Provisions for Deferred Income Taxes	(4,817)
411.1	Inc. Taxes Deferred in Prior Yrs. - Credit	(1,730)
411.4	Investment Tax Credit Adjustments	41,015
	Total Taxes	$158,426
411.6&7	Gain or Loss from Disposition of Utility Plant	(58)
	Total Operating Expenses	$1,036,244
	Operating Income	$216,956

Philadelphia Electric Company - Electric Operations
OPERATING EXPENSES
(Thousand $)

		12 Months Ended 3/31/80	
I. POWER PRODUCTION EXPENSES			
STEAM POWER GENERATION			
OPERATION			
500	Operation Supervision	$6,473	
501	Fuel	312,631	
502	Steam Expenses	10,375	
504	Steam Transferred - Credit	(28,438)	
505	Electric Expenses	5,860	
506	Miscellaneous Steam Power Expenses	7,657	
507	Rents	30	
	Total Operation	$314,588	
MAINTENANCE			
510	Maintenance Supervision and Engineering	3,189	
511	Maintenance of Structures	3,319	
512	Maintenance of Boiler Plant	24,754	
513	Maintenance of Electric Plant	6,417	
514	Maintenance of Miscellaneous Steam Plant	1,417	
	Total Maintenance	$39,096	
	Total Power Production Expenses-Steam Power	$353,684	
	NUCLEAR POWER GENERATION		
OPERATION			
517	Operation Supervision and Engineering	$2,379	
518	Fuel	38,098	(a)
519	Coolants and Water	527	
520	Steam Expenses	8,657	
523	Electric Expenses	980	
524	Miscellaneous Nuclear Power Expenses	9,605	
525	Rents	7	
	Total Operation	$60,253	
MAINTENANCE			
528	Maintenance Supervision and Engineering	4,461	
529	Maintenance of Structures	745	
530	Maintenance of Reactor Plant Equipment	6,119	
531	Maintenance of Electric Plant	3,636	
532	Maintenance of Miscellaneous Nuclear Plant	2,680	
	Total Maintenance	$17,641	
	Total Power Production Expenses-Nuclear Power	$77,894	

(a) Includes $4,730 associated with spent nuclear fuel disposal expense which was budgeted for the first 3 months of 1980.

Philadelphia Electric Company - Electric Operations
OPERATING EXPENSES
(Thousand $)

		12 Months Ended 3/31/80
	HYDRAULIC POWER GENERATION	
OPERATION		
535	Operation Supervision and Engineering	$298
536	Water and Power	142
537	Hydraulic Expenses	476
538	Electric Expenses	153
539	Miscellaneous Hydraulic Power Generation Expenses	244
	Total Operation	$1,313
MAINTENANCE		
541	Maintenance Supervision and Engineering	222
542	Maintenance of Structures	195
543	Maintenance of Reservoirs, Dams & Waterways	140
544	Maintenance of Electric Plant	983
545	Maintenance of Miscellaneous Hydraulic Plant	90
	Total Maintenance	$1,630
	Total Power Production Expenses-Hydraulic Power	$2,943
	OTHER POWER GENERATION	
OPERATION		
546	Operation Supervision and Engineering	844
547	Fuel	27,971
548	Generation Expenses	683
549	Miscellaneous Other Power Generation Expenses	929
550	Rents	2,662
	Total Operation	$33,089
MAINTENANCE		
551	Maintenance Supervision and Engineering	$259
552	Maintenance of Structures	174
553	Maintenance of Generating and Electric Plant	4,521
554	Maintenance of Miscellaneous Other Power	62
	Total Maintenance	$5,016
	Total Power Production Expenses - Other Power	$38,105
	OTHER POWER SUPPLY EXPENSES	
555	Purchased Power	
	Purchased	9,504
	Interchange	
	Economy Power	67,683
	Capacity	-
556	System Control and Load Dispatching	2,711
557	Other Expenses	17,786
	Total Other Power Supply Expenses	$97,684
	Total Power Production Expenses	$570,310

Philadelphia Electric Company - Electric Operations
OPERATING EXPENSES
(Thousand $)

		12 Months Ended 3/31/80
	TRANSMISSION EXPENSES	
OPERATION		
560	Operation Supervision and Engineering	$1,422
561	Load Dispatching	650
562	Station Expenses	1,361
563	Overhead Line Expenses	197
564	Underground Line Expenses	162
566	Miscellaneous Transmission Expenses	926
567	Rents	7,562
	Total Operation	$12,280
MAINTENANCE		
568	Maintenance Supervision and Engineering	649
569	Maintenance of Structures	394
570	Maintenance of Station Equipment	3,543
571	Maintenance of Overhead Lines	2,716
572	Maintenance of Underground Lines	566
573	Maintenance of Miscellaneous Transmission Plant	3
	Total Maintenance	$7,873
	Total Transmission Expenses	$20,153
	DISTRIBUTION EXPENSES	
OPERATION		
580	Operation Supervision and Engineering	4,545
581	Load Dispatching	965
582	Station Expenses	3,622
583	Overhead Line Expenses	2,956
584	Underground Line Expenses	1,032
585	Street Lighting and Signal System Expenses	543
586	Meter Expenses	2,527
587	Customer Installation Expenses	3,076
588	Miscellaneous Distribution Expenses	7,240
589	Rents	838
	Total Operation	$27,344
MAINTENANCE		
590	Maintenance Supervision and Engineering	3,254
591	Maintenance of Structures	561
592	Maintenance of Station Equipment	5,456
593	Maintenance of Overhead Lines	13,591
594	Maintenance of Underground Lines	5,038
595	Maintenance of Line Transformers	580
596	Maintenance of Street Lighting and Signal System	899
597	Maintenance of Meters	1,206
598	Maintenance of Miscellaneous Distribution Plant	706
	Total Maintenance	$31,291
	Total Distribution Expenses	$58,635

Philadelphia Electric Company - Electric Operations
OPERATING EXPENSES
(Thousand $)

		12 Months Ended 3/31/80
	IV CUSTOMER ACCOUNTS EXPENSES	
OPERATION		
901	Supervision	$1,349
902	Meter Reading Expenses	7,140
903	Customer Records and Collection	27,788
904	Uncollectible Accounts	9,017
905	Miscellaneous Customer Accounts Expenses	1,106
	Total Customer Accounts Expenses	$46,400
	V CUSTOMER SERVICE & INFORMATIONAL EXPENSES	
OPERATION		
907	Supervision	167
908	Customer Assistance Expenses	1,281
909	Informational & Instructional Advertising Expenses	1,512
910	Misc. Cust. Serv. & Information Expenses	189
	Total Cust. Serv. & Information Expenses	$3,149
	VI SALES EXPENSES	
OPERATION		
911	Supervision	87
912	Demonstrating and Selling Expenses	237
913	Advertising Expenses	68
914	Miscellaneous Sales Expenses	68
	Total Sales Expenses	$460
	VII ADMINISTRATIVE AND GENERAL EXPENSES	
OPERATION		
920	Administrative and General Salaries	13,990
921	Office Supplies and Expenses	7,218
923	Outside Services Employed	2,270
924	Property Insurance	3,532
925	Injuries and Damages	4,061
926	Employee Pensions and Benefits	31,243
928	Regulatory Commission Expenses	508
929	Duplicate Charges - Credit	(1,085)
930	General Advertising and Miscellaneous	4,137
	Total Operation	$65,874
MAINTENANCE		
932	Maintenance of General Plant	404
	Total Administrative and General Expenses	$66,278
	VIII TOTAL OPERATION AND MAINTENANCE EXP. (B-9)	$765,385
	IX DEPRECIATION AND AMORTIZATION	
942	Depreciation (B-9)	$112,900 (a)
943	Amortization of Other Electric Plant	(641)
944	Amortization of Property Losses	232
	Total Depreciation and Amortization	$112,491

(a) Includes $615 booked in first 3 months of 1980 to reflect cost of nuclear decommissioning.

Philadelphia Electric Company - Electric Operations
OPERATING EXPENSES
(Thousand $)

	12 Months Ended 3/31/80
X TAXES	
TAXES OTHER THAN INCOME TAXES	
State and Local	
Capital Stock - Pennsylvania	$14,680
Capital Stock - New Jersey	242
Gross Receipts	53,404
Real Estate - Local	964
Real Estate - State	6,875
Personal Property - New Jersey	123
Local Franchise	242
Public Utility Commission Expense	2,971
State Unemployment Compensation	614
Philadelphia Realty Occupancy	171
Miscellaneous State and Local	34
Total State and Local	$80,320
Federal	
Telephone and Telegraph	37
Federal Unemployment Compensation	362
Federal Old Age Benefits	7,630
Total Federal	$8,029
Total Taxes Other Than Income	$88,349
INCOME TAXES	
State - Pennsylvania	$15,779
State - Maryland	51
State - New Jersey	649
Federal	19,130
Local - Philadelphia	-
Total Income Taxes	$35,609
Provisions for Deferred Income Taxes	(4,817)
Income Taxes Deferred in Prior Years - Credit	(1,730)
*Investment Tax Credit Adjustments	41,015
TOTAL ALL TAXES	$158,426
XI GAIN OR LOSS FROM DISPOSITION OF UTILITY PLANT	(58)
XII TOTAL OPERATING EXPENSES (B-9)	$1,036,244

*Investment tax credit of $45,806 less amortization of $4,791

Philadelphia Electric Company - Electric Operations

FEDERAL INCOME TAX COMPUTATION
12 MONTHS ENDED MARCH 31, 1980
(Thousand $)

Operating Revenue		$1,253,200
Less: Operating Expenses		
Operating and Maintenance Expense	765,385	
Depreciation and Amortization	112,491	
State and Local Income Taxes	16,479	
Taxes Other Than Income	88,349	
Balance		$270,496
Adjustments for Additional Items Affecting Taxable Income		
Deductions		
Gross Interest Charges Allocated to Electric Operations	119,958	
Additional Depreciation for Tax Purposes	67,404	
Contribution to Pension Fund Charged to Const.	3,958	
Taxes Charged to Construction	3,785	
Preferred Dividend Credit	782	
Amortization of Various Expenses Capitalized by R.A.	287	
Amortization of Pollution Control Facilities	1,267	
Amortization of Easements & Clearing Rights of Way	381	
Cost of Removal	458	
ADR Repair Allowance	5,120	
Nuclear Fuel: Excess of Tax over Burn-up	1,318	
Additions		
AFUDC included in nuclear fuel burn-up	3,695	
Amortization of Peach Bottom #1 Loss Charged to Income	232	
Reimburse Federal Income Taxes of SPCo	1,215	
Unbilled Memo Revenue	599	
Deferred Fuel Expense	15,655	
Retroactive Rate Increase	49,606	
Nuclear Fuel Storage	4,730	
Nuclear Plant Decommission Expense	615	
Miscellaneous Deductions	110	
Sub-Total Net Deductions	$128,261	
Federal Income Tax Base - Operations		$142,235
Federal Income Tax @ 46%		65,428
Less: Surtax Credit		2
Investment Tax Credit (a)		45,806
Consolidated Savings		490
Federal Income Tax Charged to Operations		$19,130

(a) Represents the maximum ITC that can be taken in the current year, in addition, $7,684 will be carried forward to future years.

Philadelphia Electric Company - Electric Operations

ACCUMULATED DEFERRED TAXES
PER BALANCE SHEET (B-2) AS OF MARCH 31, 1980
(Thousand $)

The balance as of 3/31/80 in Accumulated Deferred Income Taxes including allocated common which amounts to $194,297 for electric operations as developed below, is deducted from the Company's investment in developing the rate base measures of value (A-2).

Combined Operations

	Total Per Balance Sheet (a)	Accumulated Deferred Taxes Common Allocated (b)	Accumulated Deferred Taxes Including Allocated Common
Electric	191,036	3,261	194,297
Gas	10,432	490	10,922
Steam	1,886	54	1,940
Common	3,805	(3,805)	-
Total	$207,159		$207,159

Electric Operations and Allocated Common

Total, as booked	$194,297
Less: Portion associated with Salem Unit No.2	5,562
Total, as adjusted	$188,735

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a. Per B-2
b. Per B-17

Electric	85.718%
Gas	12.869
Steam	1.413
Total	100.000%

Philadelphia Electric Company - Combined Operations

DEVELOPMENT OF FACTORS FOR ALLOCATING COMMON
TO ELECTRIC, GAS, & STEAM OPERATIONS (a)

	Plant in Service (1)	By Total Revenue (2)	By Total Customers (3)	Average (4)=(1)+(2)+(3) / 3
Basic Data	(Thousand $)	(Thousand $)	(Number)	
Electric	$3,462,887	$1,229,729	1,264,553	
Gas	292,037	194,996	270,884	
Steam	52,447	41,318	659	
Subtotal	$3,807,371	$1,466,043	1,536,096	
Common	117,035	-	-	
Total	$3,924,406	$1,466,043	1,536,096	
Allocation Factors		PERCENT		
Electric	90.952	83.881	82.322	85.718
Gas	7.670	13.301	17.635	12.869
Steam	1.378	2.818	0.043	1.413
Total	100.000	100.000	100.000	100.000

(a) The allocation factors shown represent plant, revenue and customers at March 31, 1979 (ref. B-17 of Exhibit DPS-1)

Philadelphia Electric Company - Combined Operations

CALCULATION OF EFFECTIVE INCOME TAX RATE

The effective income tax rate developed below combines into a single rate the effects of the federal income tax rate of 46% and the Pennsylvania income tax rate of 7.5%. The Pennsylvania income tax rate of 7.5% is the rate in effect prior to 1971 and is used here to reflect the level of Pennsylvania income taxes collectible through base rates. Changes in the Pennsylvania income tax rate since 1970 are collected through operation of the State Tax Adjustment Clause.

This effective income tax rate is intended for application to incremental changes in taxable income which result from 1) changes in revenue, less gross receipts taxes, associated with ratemaking adjustments, 2) changes in tax deductible expense associated with ratemaking adjustments and 3) additional revenues yielded by proposed rates. Because the effective income tax rate is applied to incremental changes in taxable income, it is independent of the overall average income tax rate experienced during the test year.

In 1970, prior to the establishment of the State Tax Adjustment Clause, Pennsylvania income taxes were deductible in determining both state and federal taxable incomes. Consequently, the effective state, federal or combined income tax rates must be determined either by a trial and error procedure or by use of algebraic formulae. The algebraic formulae used here act to determine an effective income tax rate to be applied to changes in taxable income before payment of both Pennsylvania and Federal income taxes.

Pennsylvania Effective Income Tax, s:

$$s = 0.075 \times (\text{taxable income} - s)$$
$$s = (0.075 \times \text{taxable income}) - (0.075 \times s)$$
$$s + (0.075 \times s) = (0.075 \times \text{taxable income})$$
$$s \times (1 + 0.075) = (0.075 \times \text{taxable income})$$
$$s = \frac{0.075 \times \text{taxable income}}{1.075}$$
$$s = 0.6977 \times \text{taxable income}$$

Federal Effective Income Tax, f:

$$f = 0.46 \times (\text{taxable income} - s)$$
$$f = (0.46 \times \text{taxable income}) - (0.46 \times 0.06977 \times \text{taxable income})$$
$$f = (0.4600 - 0.03209) \times \text{taxable income}$$
$$f = 0.42791 \times \text{taxable income}$$

Summary:

	Rate		
	Statutory	Effective	Effective In % of Total
Pennsylvania	7.5%	6.977%	14.019%
Federal	46.0	42.791	85.981
Total	53.5%	49.768%	100.000%

PHILADELPHIA ELECTRIC COMPANY

DEBT CAPITAL
DEVELOPMENT OF WEIGHTED EFFECTIVE COST RATE
March 31, 1980
($1,000's)

Debt Issue	Nominal Date of Issue (a)	Principal Amount Outstanding (b)	Premium or (Discount) (c)	Issue Expense (d)	Net Proceeds Amount (e)	Net Proceeds Per $100 (f)	Cost of Money Curr.Yield (g)	Cost of Money Ann. Interest (h)=(a)x(g)	Yield to Maturity (j)
2-3/4% due 1981	12/1/46	30,000	$264	134	30,130	100.43	2.74	826	2.73
3-1/4% due 1982	1/1/52	35,000	103	161	34,942	99.83	3.26	1,139	3.26
3-1/8% due 1983	12/1/53	20,000	(197)	97	19,706	98.53	3.17	625	3.20
3-1/8% due 1985	4/1/55	50,000	(235)	159	49,606	99.21	3.15	1,563	3.17
4.85% S.F. Debs due 1986	10/1/61	40,000	-	186	39,814	99.53	4.87	1,939	4.88
4-5/8% due 1987	9/1/57	40,000	(284)	131	39,585	98.96	4.67	1,849	4.69
3-3/4% due 1988	5/1/58	40,000	(360)	123	39,517	98.79	3.80	1,502	3.82
4-3/8% due 1986	12/1/58	50,000	(315)	148	49,537	99.07	4.42	2,190	4.43
5% due 1989	10/1/59	50,000	171	153	50,018	100.04	5.00	2,501	5.00
4-1/2% due 1994	5/1/64	50,000	160	134	50,026	100.05	4.50	2,251	4.50
6-1/8% due 1997	10/1/67	75,000	(271)	115	74,614	99.49	6.16	4,596	6.16
6-1/2% due 1993	3/1/68	60,000	(401)	79	59,520	99.20	6.55	3,899	6.57
9% S.F. due 1995	2/1/70	80,000	1,071	111	80,960	101.20	8.89	7,197	8.88
7-3/4% S.F. due 2000	12/15/70	80,000	(772)	107	79,121	98.90	7.84	6,203	7.85
8-1/4% due 1996	7/1/71	80,000	(369)	126	79,505	99.38	8.30	6,599	8.31
7-3/8% due 2001	12/15/71	80,000	49	132	79,917	99.90	7.38	5,898	7.38
7-1/2% due 1998	6/15/72	100,000	(14)	142	99,844	99.84	7.51	7,498	7.51
7-1/2% due 1999	1/15/73	100,000	(384)	116	99,500	99.50	7.54	7,502	7.54
8-1/2% due 2004	1/15/74	125,000	34	145	124,889	99.91	8.51	10,628	8.51
7-year notes	5/29/74	75,000	-	3	74,997	99.99	10.50(1)	7,875	10.50
11% due 1980	10/15/74	125,000	(1,219)	216	123,565	98.85	11.13	13,753	11.27
12-3/4% due 1981	1/15/75	100,000	(850)	125	99,025	99.03	12.87	12,745	12.99
11-5/8% due 2000	4/15/75	65,000	(423)	104	64,473	99.19	11.72	7,556	11.73
11% due 2000	8/1/75	80,000	(700)	177	79,123	98.90	11.12	8,798	11.13
9-1/8% due 2006	3/1/76	100,000	(875)	159	98,966	98.97	9.22	9,125	9.23
9-5/8% due 2002	8/1/76	100,000	(875)	168	98,957	98.96	9.73	9,625	9.74
8-5/8% due 2007	3/15/77	75,000	(670)	117	74,213	98.95	8.72	6,469	8.73
8-5/8% due 2007	7/15/77	75,000	(429)	141	74,430	99.24	8.69	6,469	8.70
9-1/8% due 2008	3/15/78	100,000	110	152	99,958	99.96	9.13	9,125	9.14
7-year notes	7/10/78	25,000	-	3	24,997	99.99	10.70(2)	2,675	10.70
7-year notes	7/13/78	75,000	-	3	74,997	99.99	10.25(3)	7,688	10.25
8-year note	5/28/79	50,000	-	-	50,000	100.00	10.0 (4)	5,000	10.0
10-1/4% due 2009 (5)	10/79	100,000	-	-	100,000	100.00	10.25	10,250	10.25
I.R.B.'s									
4.50% due 1980	10/1/72	1,000	-	15	985	98.50	4.57	45	4.72
5.50% due 1997	10/1/72	33,000	-	479	32,521	98.55	5.58	1,815	5.61
6.00% due 1993-2003	2/1/77	23,500	(429)	210	22,861	97.28	6.17	1,410	6.23
Note to Samuel & Catherine Edwards	7/19/77	304	-	-	304	100.00	8.00	24	8.00
Note to IBM		27	-	-	27	100.00	10.00	3	10.00
Note to Clarence & Betty Myers	11/1/78	30	-	-	30	100.00	7.00	2	7.00
Note to Burdett Oxygen Company	2/1/78	36	-	-	36	100.00	8.00	3	8.00
Cumulative Reacquired S.F.									
4.85% S.F. Debs Due 2000	10/1/61	(14,406)	-	(67)	(14,339)	99.53	(4.87)	(698)	(4.88)
9% S.F. Due 1995	2/1/70	(9,600)	(129)	(13)	(9,716)	101.20	(8.89)	(864)	(8.88)
7-3/4% S.F. due 2000	12/15/70	(8,099)	78	(11)	(8,010)	98.90	(7.84)	(628)	(7.85)
		2,355,792	(8,161)	4,480	2,343,151			194,670	
Weighted Avg. Cost of Debt Capital				8.31%					

(1) = 105% of prime (prime @ 10.0%) = 10.50%
(2) = 107% of prime (prime @ 10.0%) = 10.70%
(3) = 1/4 of 1% over prime (prime @ 10.0%) = 10.25%
(4) = Prime = 10.0%
(5) = estimated

Philadelphia Electric Company
Preferred Stock
Development of Weighted Effective Cost Rate
March 31, 1980
($1,000's)

Issue	Shares	Date of Issue	Principal Amount Outstanding	Total Discount and Expense or Net Premium	Amount	Per Share	Dividend Requirement	Effective Cost Rate - %
4.4% Cumulative	226,499	Dec. 1941	$22,650	-	$22,650	$100.00	$996.6	4.40
	48,221	Mar. 1942	4,822	449	5,271	109.31	212.2	4.03
3.8% Cumulative	300,000	12/5/46	30,000	(30)	29,970	99.90	1,140.0	3.80
4.3% Cumulative	150,000	2/5/48	15,000	(468)	14,532	96.88	645.0	4.44
4.68% Cumulative	150,000	5/14/53	15,000	(244)	14,756	98.37	702.0	4.76
7% Cumulative	400,000	2/18/69	40,000	(646)	39,354	98.39	2,800.0	7.11
8.75% Cumulative	650,000	7/22/70	65,000	(1,040)	63,960	98.40	5,687.5	8.89
7.85% Cumulative	500,000	3/10/71	50,000	(801)	49,199	98.40	3,925.0	7.98
7.75% Cumulative	200,000	11/16/71	20,000	(399)	19,601	98.01	1,550.0	7.91
7.80% Cumulative	750,000	4/20/72	75,000	(1,106)	73,894	98.53	5,850.0	7.92
7.325% Cumulative	750,000	5/1/73	75,000	(442)	74,558	99.41	5,493.8	7.37
9.50% Cumulative	750,000	5/1/74	75,000	(1,093)	73,907	98.54	7,125.0	9.64
9.52% Cumulative	500,000	5/1/76	50,000	(920)	49,080	98.16	4,760.0	9.70
8.75% Cumulative	500,000	5/1/78	50,000	(225)	49,775	99.55	4,375.0	8.79
(Redeemed 7% Cumulative)	(48,000)	2/18/69	(4,800)	77	(4,723)	98.39	(336.0)	(7.11)
Redeemed 7.325% Cumulative	(30,000)	5/1/73	(3,000)	18	(2,982)	99.41	(291.8)	(7.37)
Total at 3/31/79			$579,672		$572,802		$44,706.3	7.80

Philadelphia Electric Company - Electric Operations

ADDITIONAL WORKING CAPITAL
ASSOCIATED WITH SALEM UNIT #1 NUCLEAR FUEL
($1,000)

The following adjustment to materials and supplies reflects the average estimated balance of nuclear fuel in the reactor of Salem Unit #1 for the twelve months ending March 31, 1980.

Actual balance in reactor @ 3/31/79	$7,955
Plus: Reload #1 (a)	9,087
Total	$17,042
Less: Twelve months burnup	7,256
Closing balance in reactor @ 3/31/80	$9,786
Average balance	$13,414

(a) In process as of April 1979

Philadelphia Electric Company - Electric Operations

DESCRIPTION OF TRENDED ORIGINAL COST OF ELECTRIC PLANT

The measures of value of electric plant projected to be in service, including the allocable portion of common utility plant, at March 31, 1980, resulted from trended original cost and depreciation studies. A description of the trended original cost study follows, on pages C-1 through C-4. A summary of the results is presented by plant accounts on pages C-5 through C-11. The accrued depreciation presented in the summary was calculated in the manner described on page C-12, using the service life estimates identified on pages C-13 through C-21.

The trended original cost study restates the original cost of electric plant and common utility plant in service at March 31, 1980, in terms of price levels in effect at December 31, 1978, and average price levels for the periods 1977-1979 and 1975-1979. For the purpose of the three-year and five-year average price levels, the December 31, 1978 price level was used as a conservative estimate of the 1979 price level.

The cost indexes used to calculate the trended original cost were the same indexes used in the previous study prepared by this firm related to plant in service at May 31, 1977, and presented to the Pennsylvania Public Utility Commission in the proceeding at the Rate Investigation Docket No. 438.

The trendable components of electric and common plant are set forth in Table 1, pages 9 through 20 of Exhibit No. HTW-1. The sources of data and the splice periods used in compiling the indexes used to trend electric and common plant are identified in Table 2, pages 21 through 60, and the reasons for the selection of the indexes are identified through lettered codes which refer to the reasons listed on pages 61 and 62. The workpapers for the index compilation, including tests and comparisons made during the course of the study, consist of seven volumes, and are available for inspection at the offices of Gannett Fleming Corddry and Carpenter, Inc., Harrisburg, Pennsylvania.

The basic and composite index numbers, from which trend factors were calculated, were compiled to conform with the historical price movements characteristic of each significant property component trended. Composite

index numbers were developed by Laspeyres' procedure, that is, by applying constant percentage weights to each appropriate basic index number series. Basic index data were selected from various sources, including the company's records, suppliers' price and index quotations, engineering periodicals, government statistical releases, and private cost index services.

Indexes used to reflect the changes in labor costs were developed to the extent possible from labor rates compiled from company records. In the case of contractors' labor, union rates in the Philadelphia area were used.

Indexes applicable to material and equipment costs were compiled from suppliers' quoted prices; company records of material unit costs; the U.S. Department of Labor - Bureau of Labor Statistics; Federal Energy Regulatory Commission; Federal Highway Administration; Marshall and Swift Comparative Equipment Costs; Handy-Whitman Index of Public Utility Construction Costs; Metal Statistics; Engineering News-Record; and Oil and Gas Journal.

Indexes for buildings and structures were based primarily on a building cost study of the Philadelphia area made by the Boeckh Publications, a Division of American Appraisal Associates, Inc., and the published index of Turner Construction Company who constructed the Philadelphia general office building.

Land and land rights, intangible plant, and computers were incorporated into the trended original cost results at original cost, inasmuch as no satisfactory published indexes were available for those assets.

Included in Utility Plant in Service under Account 399, Other Tangible Property, is a credit of $6,041,000, representing the portion of the settlement of anti-trust suits which was not amortized at March 31, 1980. The foregoing amount was deducted only in the original cost measures of value. It was not deducted from the trended original cost portion because the element of inflation associated with anti-trust activities was automatically eliminated by the trending process which relates the inflated cost indexes of the years affected by price control activities to current indexes reflecting actual recent prices.

The relative portions of the original cost of electric plant trended through indexes compiled from the several source categories are shown on the following table.

Index Data Source		Percent of Original Cost*
a.	Boeckh	5.0
b.	Handy-Whitman	0.5
c.	Indexes developed from suppliers' prices	11.8
d.	Indexes developed from company records	23.8
e. & f.	Government statistical releases	
	Construction equipment 6.0	
	Other equipment and wage rates 34.2	40.2
g.	Other published sources	9.0
h.	Unity	9.7
	Total	100.0

The calculation of trended original cost at the December 31, 1980 spot price level consisted of applying trend factors, developed from basic or composite indexes, to the surviving original cost, by vintage, of each trendable component. Each trend factor is calculated by dividing the applicable cost index number at the spot date by the comparable average index number for the year of installation of the property component being trended. Each series of cost index numbers reflects the direction and extent of relative changes in price or cost level of specific items (or groups of property) between designated periods of time.

The trended original costs at the average price level during the three-year and five-year periods ending with 1979 were calculated by applying price level conversion factors to the total trended original cost at the spot price level for each component trended. Each three-year and five-year average conversion factor was computed by dividing the average index number during the three-year or five-year period by the corresponding index number used for trending the original costs to the spot price level.

For the plant accounts containing more than one trendable component, the trended original costs of each component, at each price level, are summed to determine the total trended original cost.

*The percentages are based on the index source for the most recent period of spliced indexes. In the cases of composite indexes, the original cost was allocated to the basic indexes in accordance with the weights during the base period of the composite index.

Trending an Account

The trending of Account 362 - Distribution Station Equipment is shown below. It is a typical example of all trendable components.

Account 362 - Distribution Station Equipment

Year (1)	Original Cost at 3/31/80 (2)	Index (3)	Trend Factor (4)	Original Cost Trended to Dec. 31, 1978 Price Level (5)=(2)x(4)
1916	$ 22,213	151	7.841	$ 174,172
****				
1940	190,646	248	4.774	910,144
1941	370,425	251	4.717	1,747,295
****				
1963	5,826,668	542	2.185	12,731,270
1964	5,965,396	561	2.111	12,592,951
1965	3,837,496	576	2.056	7,889,892
1966	5,567,423	603	1.964	10,934,419
1967	9,089,382	642	1.844	16,760,820
1968	10,114,737	664	1.783	18,034,576
1969	17,241,247	657	1.802	31,068,727
1970	16,150,056	668	1.772	28,617,899
1971	20,402,496	672	1.762	35,949,198
1972	20,242,835	697	1.699	34,392,577
1973	11,882,200	729	1.624	19,296,693
1974	20,385,982	876	1.352	27,561,848
1975	11,760,371	1,000	1.184	13,924,279
1976	828,698	1,039	1.140	944,716
1977	3,151,922	1,076	1.100	3,467,114
1978	1,806,755	1,143	1.036	1,871,798
1979	7,949,104	1,184	1.000	7,949,104
1980	1,465,000	1,184	1.000	1,465,000
12/31/78 Price Level Base		1,184		
Total	$253,063,644			$494,441,872

Original Cost Trended to 3-Year Average Price Level

$$\frac{1{,}134 \text{ (3-Year Average Index - 1977, 1978, 1979)}}{1{,}184 \text{ (December 31, 1978 Index)}}$$

$$= 0.958 \times \$494{,}441{,}872 = \$473{,}675{,}313$$

Original Cost Trended to 5-Year Average Price Level

$$\frac{1{,}088 \text{ (5-Year Average Index - 1975, 1976, 1977, 1978, 1979)}}{1{,}184 \text{ (December 31, 1978 Index)}}$$

$$= 0.919 \times \$494{,}441{,}872 = \$454{,}392{,}080$$

****These dates omitted to simplify the illustration.

PHILADELPHIA ELECTRIC COMPANY - ELECTRIC OPERATIONS

SUMMARY BY PRIMARY ACCOUNTS OF ORIGINAL COST AND TRENDED ORIGINAL COST
AND RELATED DEPRECIATION RESERVE FOR ELECTRIC PLANT IN SERVICE AT MAR 31 1980
(THOUSAND $)

DEPRECIABLE ACCOUNTS	ORIGINAL COST			ORIGINAL COST TRENDED TO 1-YEAR AVERAGE			ORIGINAL COST TRENDED TO 3-YEAR AVERAGE		
	PLANT	CALCULATED RESERVE	NET	PLANT	CALCULATED RESERVE	NET	PLANT	CALCULATED RESERVE	NET
PRODUCTION PLANT									
STEAM PRODUCTION PLANT EXCLUDING OLD STEAM PRODUCTION									
EDDYSTONE #3 & 50% OF COMMON FACILITIES									
311. STRUC AND IMPROV	23,639	3,889	19,750	34,106	5,611	28,495	32,510	5,348	27,162
312. BOILER PLANT EQUIP.	68,892	11,250	57,642	98,722	16,121	82,601	94,971	15,509	79,462
314. TURBO GEN. UNIT	23,846	3,892	19,954	34,481	5,627	28,854	33,274	5,430	27,844
315. ACC. EL. EQUIP.	11,730	1,912	9,818	14,769	2,407	12,362	14,414	2,350	12,064
316. MISC PWR PLANT EQUIP	1,142	187	955	1,771	291	1,480	1,675	275	1,400
TOTAL	129,249	21,130	108,119	183,849	30,057	153,792	176,844	28,912	147,932
EDDYSTONE #4 & 50% OF COMMON FACIL. & ADDITITONAL AFUDC									
311. STRUC AND IMPROV	22,571	2,422	20,149	26,340	2,826	23,514	25,313	2,716	22,597
312. BOILER PLANT EQUIP.	69,949	7,464	62,485	81,910	8,740	73,170	78,797	8,408	70,389
314. TURBO GEN. UNIT	24,946	2,657	22,289	29,486	3,140	26,346	28,454	3,030	25,424
315. ACC. EL. EQUIP.	12,026	1,280	10,746	13,529	1,440	12,089	13,205	1,405	11,800
316. MISC PWR PLANT EQUIP	1,105	118	987	1,345	144	1,201	1,273	136	1,137
TOTAL	130,597	13,941	116,656	152,610	16,290	136,320	147,042	15,695	131,347
OTHER									
311. STRUC AND IMPROV	120,587	85,738	34,849	561,597	442,723	118,874	540,150	426,028	114,122
312. BOILER PLANT EQUIP.	343,746	180,828	162,918	1,006,288	639,669	366,619	967,983	615,328	352,655
314. TURBO GEN. UNIT	135,132	80,831	54,301	416,323	282,905	133,418	401,751	273,003	128,748
315. ACC. EL. EQUIP.	72,767	44,562	28,205	229,277	162,329	66,948	223,508	158,316	65,192
316. MISC PWR PLANT EQUIP	9,744	6,008	3,736	34,968	24,709	10,259	33,080	23,374	9,706
TOTAL	681,976	397,967	284,009	2,248,453	1,552,335	696,118	2,166,472	1,496,049	670,423
TOTAL STEAM PROD PLANT	941,822	433,038	508,784	2,584,912	1,598,682	986,230	2,490,358	1,540,656	949,702

PHILADELPHIA ELECTRIC COMPANY - ELECTRIC OPERATIONS

SUMMARY BY PRIMARY ACCOUNTS OF ORIGINAL COST AND TRENDED ORIGINAL COST
AND RELATED DEPRECIATION RESERVE FOR ELECTRIC PLANT IN SERVICE AT MAR 31 1980
(THOUSAND $)

DEPRECIABLE ACCOUNTS	ORIGINAL COST			ORIGINAL COST TRENDED TO 1-YEAR AVERAGE			ORIGINAL COST TRENDED TO 3-YEAR AVERAGE		
	PLANT	CALCULATED RESERVE	NET	PLANT	CALCULATED RESERVE	NET	PLANT	CALCULATED RESERVE	NET
NUCLEAR PRODUCTION PLANT									
PEACH BOTTOM #2 & #3									
321. STRUC AND IMPROV	99,996	16,318	83,678	171,125	28,019	143,106	165,135	27,038	138,097
322. REACTOR PLANT EQUIP.	137,464	21,445	116,019	191,143	30,193	160,950	182,924	28,895	154,029
323. TURBO GEN. UNIT	66,417	10,194	56,223	92,752	14,436	78,316	89,506	13,931	75,575
324. ACC. EL. EQUIP.	37,158	5,993	31,165	47,032	7,608	39,424	45,385	7,342	38,043
325. MISC PWR PLANT EQUIP	11,525	1,770	9,755	15,668	2,458	13,210	14,994	2,353	12,641
TOTAL	352,560	55,720	296,840	517,720	82,714	435,006	497,944	79,559	418,385
SALEM # 1 & 50% OF COMMON FACILITIES									
321. STRUC AND IMPROV	97,138	7,645	89,493	97,138	7,645	89,493	97,138	7,645	89,493
322. REACTOR PLANT EQUIP.	124,957	9,784	115,173	124,957	9,784	115,173	124,957	9,784	115,173
323. TURBO GEN. UNIT	54,084	4,223	49,861	54,084	4,223	49,861	54,084	4,223	49,861
324. ACC. EL. EQUIP.	44,883	3,505	41,378	44,883	3,505	41,378	44,883	3,505	41,378
325. MISC PWR PLANT EQUIP	9,809	770	9,039	9,809	770	9,039	9,809	770	9,039
TOTAL	330,871	25,927	304,944	330,871	25,927	304,944	330,871	25,927	304,944
TOTAL NUCLEAR PROD PLANT	683,431	81,647	601,784	848,591	108,641	739,950	828,815	105,486	723,329

PHILADELPHIA ELECTRIC COMPANY - ELECTRIC OPERATIONS

SUMMARY BY PRIMARY ACCOUNTS OF ORIGINAL COST AND TRENDED ORIGINAL COST
AND RELATED DEPRECIATION RESERVE FOR ELECTRIC PLANT IN SERVICE AT MAR 31 1980
(THOUSAND $)

DEPRECIABLE ACCOUNTS	ORIGINAL COST			ORIGINAL COST TRENDED TO 1-YEAR AVERAGE			ORIGINAL COST TRENDED TO 3-YEAR AVERAGE		
	PLANT	CALCULATED RESERVE	NET	PLANT	CALCULATED RESERVE	NET	PLANT	CALCULATED RESERVE	NET
HYDRAULIC PRODUCTION PLANT									
331. STRUC AND IMPROV	14,270	1,480	12,790	32,834	3,420	29,414	31,252	3,257	27,995
332. TURBO GEN. UNIT	34,279	3,888	30,391	83,264	9,446	73,818	79,684	9,039	70,645
333. WTR. WHEELS TURBS GEN	21,802	4,184	17,618	48,293	9,773	38,520	46,506	9,412	37,094
334. ACC. EL. EQUIP.	7,535	1,507	6,028	15,628	3,284	12,344	15,253	3,205	12,048
335. MISC PWR PLANT EQUIP	3,430	368	3,062	5,862	860	5,002	5,557	815	4,742
336. ROADS RR'S BRIDGES	998	185	813	2,536	472	2,064	2,348	437	1,911
TOTAL	82,314	11,612	70,702	188,417	27,255	161,162	180,600	26,165	154,435
OTHER PRODUCTION PLANT - CROYDON									
341. STRUC AND IMPROV	6,448	1,482	4,966	8,924	2,052	6,872	8,264	1,900	6,364
342. FUEL HLDRS PRODUC ACC	9,484	2,180	7,304	13,373	3,074	10,299	12,918	2,970	9,948
344. GENERATORS	45,446	10,341	35,105	67,897	15,466	52,431	65,181	14,848	50,333
345. ACC. EL. EQUIP.	1,249	285	964	1,573	359	1,214	1,535	350	1,185
346. MISC PWR PLANT EQUIP	754	173	581	1,172	269	903	1,108	255	853
TOTAL	63,381	14,461	48,920	92,939	21,220	71,719	89,006	20,323	68,683
OTHER PRODUCTION PLANT - OTHER									
341. STRUC AND IMPROV	1,449	575	874	3,039	1,250	1,789	2,818	1,158	1,660
342. FUEL HLDRS PRODUC ACC	3,298	1,311	1,987	6,626	2,723	3,903	6,400	2,631	3,769
343. PRIME MOVERS	3,554	2,652	902	7,754	5,787	1,967	7,444	5,555	1,889
344. GENERATORS	56,447	21,601	34,846	101,724	39,606	62,118	97,655	38,022	59,633
345. ACC. EL. EQUIP.	10,070	3,877	6,193	18,209	7,223	10,986	17,772	7,050	10,722
346. MISC PWR PLANT EQUIP	194	79	115	387	169	218	366	160	206
TOTAL	75,012	30,095	44,917	137,739	56,758	80,981	132,455	54,576	77,879
TOTAL PRODUCTION PLANT	138,393	44,556	93,837	230,678	77,978	152,700	221,461	74,899	146,562

PHILADELPHIA ELECTRIC COMPANY - ELECTRIC OPERATIONS

SUMMARY BY PRIMARY ACCOUNTS OF ORIGINAL COST AND TRENDED ORIGINAL COST
AND RELATED DEPRECIATION RESERVE FOR ELECTRIC PLANT IN SERVICE AT MAR 31 1980
(THOUSAND $)

DEPRECIABLE ACCOUNTS	ORIGINAL COST			ORIGINAL COST TRENDED TO 1-YEAR AVERAGE			ORIGINAL COST TRENDED TO 3-YEAR AVERAGE		
	PLANT	CALCULATED RESERVE	NET	PLANT	CALCULATED RESERVE	NET	PLANT	CALCULATED RESERVE	NET
TRANSMISSION PLANT									
352. STRUC AND IMPROV	12,175	3,407	8,768	30,667	12,055	18,612	28,025	11,369	17,456
353. STATION EQUIPMENT.	160,907	48,941	111,966	324,259	125,837	198,422	311,288	120,803	190,485
353.1 STAT EQUIP SALEM 1	0	0	0	0	0	0	0	0	0
354. TOWERS AND FIXTURES	144,818	25,602	119,216	298,113	73,694	224,419	286,188	70,746	215,442
355. POLES AND FIXTURES	577	206	371	1,308	558	750	1,257	536	721
356. OVHD COND AND DEVICES	63,182	15,062	48,120	134,360	40,386	93,974	126,702	38,084	88,618
357. UNDERGROUND CONDUIT	2,747	1,523	1,224	13,486	8,564	4,922	12,960	8,230	4,730
358. UNGRD COND & DEVICES	33,928	15,449	18,479	90,963	52,594	38,369	88,052	50,911	37,141
359. ROADS AND TRAILS	1,705	287	1,418	3,106	625	2,481	2,960	595	2,365
TOTAL	420,039	110,477	309,562	896,262	314,313	581,949	858,232	301,274	556,958
DISTRIBUTION PLANT									
361. STRUC AND IMPROV	27,872	8,628	19,244	92,305	42,496	49,809	87,690	40,593	47,097
362. STATION EQUIPMENT.	253,064	73,294	179,770	494,442	172,922	321,520	473,675	165,660	308,015
364. POLES TOWERS AND FIX	105,171	26,845	78,326	264,101	92,601	171,500	253,221	88,804	164,417
365. OVHD COND AND DEVICES	167,763	46,594	121,169	347,511	119,366	228,145	332,511	114,233	218,278
366. UNDERGROUND CONDUIT	129,274	47,553	81,721	443,886	249,615	194,271	424,508	238,632	185,876
367. UNGRD COND & DEVICES	182,903	41,971	140,932	375,052	122,768	252,284	363,259	118,963	244,296
368. LINE TRANSF & INST	120,527	31,644	88,883	179,834	49,264	130,570	174,250	47,736	126,514
369.1 SERVICES - AERIAL	25,953	9,736	16,217	50,259	23,331	26,928	48,638	22,585	26,053
369.2 SERVICES - UNDGRD	35,977	4,748	31,229	72,517	17,016	55,501	69,470	16,301	53,169
370. METERS	64,256	23,378	40,878	109,168	48,875	60,293	107,812	48,139	59,673
371. INST ON CUST PREM	317	12	305	799	45	754	766	43	723
373. STR LGHT SIG SYS									
373.0 LUMINAIRES	13,325	3,143	10,182	19,687	5,562	14,125	18,893	5,340	13,553
373.1 AERIAL CONDUCTORS	442	292	150	898	638	260	860	611	249
373.2 UNGRD CONDUCTORS	5,842	1,247	4,595	10,876	3,657	7,219	10,479	3,522	6,957
373.3 P O L CONDUCTORS	2,056	614	1,442	2,589	917	1,672	2,483	879	1,604
TOTAL	1,134,742	319,699	815,043	2,463,924	949,073	1,514,851	2,368,515	912,041	1,456,474
GENERAL PLANT									
390. STRUC AND IMPROV	12,488	5,035	7,453	35,593	18,831	16,762	34,180	18,125	16,055
393. STORES EQUIPMENT.	448	215	233	1,061	558	503	1,006	530	476
394. TOOLS SHOP & GARG EQ	3,247	1,000	2,247	8,511	3,234	5,277	8,000	3,040	4,960
395.1 LAB EQUIP - TESTING	3,776	784	2,992	7,176	1,966	5,210	6,918	1,895	5,023
395.2 LAB EQUIP METER	507	176	331	1,050	460	590	1,012	443	569
395.3 LAb EQUIP CHEM	285	79	206	535	202	333	516	195	321
397. COMMUNICATION EQUIP	530	279	251	1,059	581	478	1,019	559	460
398. MISC EQUIP	761	338	423	1,490	785	705	1,436	757	679
TOTAL	22,042	7,906	14,136	56,475	26,617	29,858	54,087	25,544	28,543
	3,422,783	1,008,935	2,413,848	7,269,259	3,102,559	4,166,700	7,002,068	2,986,065	4,016,003

Philadelphia Electric Company - Electric Operations
SUMMARY BY PRIMARY ACCOUNTS OF ORIGINAL COST AND TRENDED ORIGINAL COST
AND RELATED DEPRECIATION RESERVE FOR ELECTRIC PLANT IN SERVICE AT 3/31/80
($1,000's)

	Original Cost			Original Cost Trended to 1-Yr. Average			Original Cost Trended to 3-Yr. Average		
	Plant	Calculated Reserve	Net	Plant	Calculated Reserve	Net	Plant	Calculated Reserve	Net
otal Depreciable Electric Plant (C-8)	$3,422,783	$1,008,935	$2,413,848	$7,269,259	$3,102,559	$4,166,700	$7,002,068	$2,986,065	$4,016,003
dd:									
on Depreciable Accounts									
02. Franchises & Consents (Intangibles)	163	-	163	163	-	163	163	-	163
10. Land & Land Rights (Steam Prod.)	7,624	-	7,624	7,624	-	7,624	7,624	-	7,624
20. Land & Land Rights (Nuclear Prod.)	338	-	338	338	-	338	338	-	338
30. Land & Land Rights (Hydraulic Prod.)	1,401	-	1,401	1,401	-	1,401	1,401	-	1,401
40. Land & Land Rights (Croydon)	451	-	451	451	-	451	451	-	451
40. Land & Land Rights (Other Prod.)	397	-	397	397	-	397	397	-	397
50. Land & Land Rights (Transmission)	39,065	-	39,065	39,065	-	39,065	39,065	-	39,065
60. Land & Land Rights (Distribution)	18,691	-	18,691	18,691	-	18,691	18,691	-	18,691
89. Land & Land Rights (General)	1,987	-	1,987	1,987	-	1,987	1,987	-	1,987
Total Non-Depreciable	$70,117	-	$70,117	$70,117	-	$70,117	$70,117	-	$70,117
Old Production	9,002	9,002	-	9,002	9,002	-	9,002	9,002	-
Anti-Trust Price Adjustment	(6,041)	-	(6,041)	(6,041)	-	(6,041)	(6,041)	-	(6,041)
Deduct Mothballed Plant Included in Above									
Barbadoes Units #3 and #4									
311. Structures and Improvements	9,379	7,258	2,121	47,685	37,490	10,195	45,859	36,057	9,802
312. Boiler Plant Equipment	10,196	7,460	2,736	47,968	35,991	11,977	46,146	34,623	11,523
314. Turbogenerator Units	4,600	3,643	1,137	21,243	16,270	4,973	20,500	15,700	4,800
315. Accessory Elec. Equip.	1,910	1,344	566	6,956	5,120	1,836	6,789	4,997	1,792
316. Misc. Power Plant Equipment	706	514	192	3,127	2,340	787	2,958	2,214	744
Total Units #3 & #4	$26,991	$20,219	$6,772	$126,979	$97,211	$29,768	$122,252	$93,591	$28,661
Richmond Unit #12									
311. Structures and Improvements	$5,584	$4,934	$650	$41,886	$37,572	$4,314	$40,339	$36,186	$4,153
312. Boiler Plt. Equipment	2,465	1,949	516	11,744	9,819	1,925	11,298	9,446	1,852
314. Turbogenerator Units	2,954	2,530	424	15,801	13,705	2,096	15,248	13,225	2,023
315. Accessory Elec. Equip.	2,068	1,709	359	10,773	9,347	1,426	10,515	9,123	1,392
316. Misc. Power Plt. Equip.	299	247	52	1,596	1,372	224	1,310	1,298	212
Total Unit #12	$13,370	$11,369	$2,001	$81,800	$71,815	$9,985	$78,910	$69,278	$9,632
Total Mothballed Plant Included in above	$40,361	$31,588	$8,773	$208,779	$169,026	$39,753	$201,162	$162,869	$38,293
Total Electric Plant in Service	$3,455,500	$986,349	$2,469,151	$7,133,558	$2,942,535	$4,191,023	$6,873,984	$2,832,198	$4,041,786
Allocated Common (From C-11)	99,370	27,339	72,031	188,190	63,493	124,697	180,369	60,771	119,598
Total Electric Plus Allocated Common	$3,554,870	$1,013,688	$2,541,182	$7,321,748	$3,006,028	$4,315,720	$7,054,353	$2,892,969	$4,161,384

PHILADELPHIA ELECTRIC COMPANY — COMMON

SUMMARY BY PRIMARY ACCOUNTS OF ORIGINAL COST AND TRENDED ORIGINAL COST
AND RELATED DEPRECIATION RESERVE FOR ELECTRIC PLANT IN SERVICE AT MAR 31 1980
(THOUSAND $)

DEPRECIABLE ACCOUNTS	ORIGINAL COST			ORIGINAL COST TRENDED TO 1-YEAR AVERAGE			ORIGINAL COST TRENDED TO 3-YEAR AVERAGE		
	PLANT	CALCULATED RESERVE	NET	PLANT	CALCULATED RESERVE	NET	PLANT	CALCULATED RESERVE	NET
GENERAL PLANT									
390. STRUCTS AND IMPROV									
390.0 BRICK BUILDINGS	19,858	6,958	12,900	55,946	25,705	30,241	53,612	24,676	28,936
390.1 CONCRETE BULIDINGS	28,264	5,968	22,296	51,926	13,247	38,679	50,303	12,834	37,469
390.2 STEEL FRAM BUILDS	26,239	4,797	21,442	39,430	7,233	32,197	37,705	6,916	30,789
391. OFF FURN AND EQUIP	8,147	1,868	6,279	16,564	5,144	11,420	15,916	4,928	10,988
392. TRANS EQUIPMENT	21,695	9,368	12,327	35,779	16,146	19,633	33,890	15,292	18,598
393. STORES EQUIPMENT	677	258	419	1,572	674	898	1,492	640	852
394. TOOLS SHOP & GAR EQ	4,674	1,131	3,543	9,211	2,806	6,405	8,679	2,642	6,037
396. PWR OPERATED EQUIP	1,955	890	1,065	3,486	1,754	1,732	3,294	1,658	1,636
397. COMMUNICATION EQUIP	20	12	8	39	23	16	38	23	15
398. MISCELLANEOUS EQUIP	1,701	644	1,057	2,896	1,340	1,556	2,795	1,288	1,507
TOTAL	113,230	31,894	81,336	216,849	74,072	142,777	207,724	70,897	136,827
	113,230	31,894	81,336	216,849	74,072	142,777	207,724	70,897	136,827

Philadelphia Electric Company - Common
SUMMARY BY PRIMARY ACCOUNTS OF ORIGINAL COST AND TRENDED ORIGINAL COST
AND RELATED DEPRECIATION RESERVE FOR COMMON PLANT IN SERVICE AT 3/31/80
($1,000's)

	Original Cost			Original Cost Trended to 1-Yr. Average			Original Cost Trended to 3-Yr. Average		
	Plant	Calculated Reserve	Net	Plant	Calculated Reserve	Net	Plant	Calculated Reserve	Net
Total Depreciable Common Plant	$113,230	$31,894	$81,336	$216,849	$74,072	$142,777	$207,724	$70,897	$136,827
Non-Depreciable									
301. Organization (Intangible)	677	-	677	677	-	677	677	-	677
389. Land & Land Rights (General)	2,020	-	2,020	2,020	-	2,020	2,020	-	2,020
Total Non-Depreciable	2,697	-	2,697	2,697	-	2,697	2,697	-	2,697
Total Common Plant in Service	$115,927	$31,894	$84,033	$219,546	$74,072	$145,474	$210,421	$70,897	$139,524
Total Common Plant in Service Allocated									
Electric 85.718	99,370	27,339	72,031	188,190	63,493	124,697	180,369	60,771	119,598
Gas 12.869	14,919	4,104	10,815	28,253	9,532	18,721	27,079	9,124	17,955
Steam 1.413	1,638	451	1,187	3,103	1,047	2,056	2,973	1,002	1,971
Total 100.000%	$115,927	$31,894	$84,033	$219,546	$74,072	$145,474	$210,421	$70,897	$139,524

Philadelphia Electric Company - Electric Operations

DESCRIPTION OF ANNUAL AND ACCRUED DEPRECIATION CALCULATIONS

The calculated annual and accrued depreciation incorporated in the pro forma income statement and the measures of electric and common plant value as of March 31, 1980, for this rate filing are based on service life estimates resulting from a current service life study. The study incorporated experienced service life data through 1977, which was the latest available experience at the time of the study. The resulting annual and accrued depreciation are summarized on pages C-13 through C-21. The detailed depreciation calculations, by plant account and vintage, are presented in Exhibit No. HTW-4.

The methods used in the study are set forth in Exhibit No. HTW-2, which also presents the life tables and survivor curves resulting from the service life study. The methods used for the statistical analyses of historical service life data and for the calculation of annual and accrued depreciation were the same as those used in the study presented in the last previous rate filing investigated at R.I.D. No. 438. The updated statistical analyses were generally interpreted similarly to those resulting in the estimates of the study which was accepted by the Commission at R.I.D. No. 438. However, the updated statistical information did result in some changes in the estimated survivor curves. The estimated service life characteristics resulting from the study are set forth in Table 1 of Exhibit No. HTW-2.

The life span procedure was applied to the major generating facilities in production plant, inasmuch as the retirement of generating units generally will result in the concurrent retirement of associated facilities, replacements, and improvements installed at various times throughout the principal units' life spans. The life span estimates were based primarily on management's plans and outlook toward the operation of the several generating units. The use of the life span procedure conforms to the provision of the Commission's order at R.I.D. No. 129 and is consistent with the procedure used for production plant for the past several rate proceedings. The life span estimates are generally consistent with those accepted in the most recent rate proceeding at R.I.D. No. 438, although there are some modifications to reflect the most current outlook.

Pursuant to Commission practice, annual and accrued depreciation are calculated using the same depreciation methods and same service life estimates.

Also, pursuant to Pennsylvania rate making practice, prospective net salvage is excluded from the calculated annual and accrued depreciation and an amortization of experienced net salvage is incorporated separately into the annual cost of service.

PHILADELPHIA ELECTRIC COMPANY - ELECTRIC OPERATIONS

CALCULATED DEPRECIATION ACCRUAL BY ACCOUNTS
FOR PLANT IN SERVICE AT MAR 31 1980
(THOUSAND $)

	ORIGINAL COST	LIFE SPAN			AVERAGE AGE		
	DEPRECIABLE	RATE %	TERM DATE	INTERIM CURVE	LIFE & CURVE	RATE %	ANNUAL ACCURAL
PRODUCTION PLANT							
STEAM PRODUCTION PLANT EXCLUDING OLD STEAM PRODUCTION							
EDDYSTONE #3 & 50% OF COMMON FACILITIES							
311. STRUC AND IMPROV	23,639	2.88	2009	100-R3,			681
312. BOILER PLANT EQUIP.	68,892	2.99	2009	70-R2,			2,060
314. TURBO GEN. UNIT	23,846	2.96	2009	80-R2,			706
315. ACC. EL. EQUIP.	11,730	2.94	2009	90-R2,			345
316. MISC PWR PLANT EQUIP	1,142	2.92	2009	80R2.5			33
TOTAL	129,249	2.96					3,825
EDDYSTONE #4 & 50% OF COMMON FACIL. & ADDITITONAL AFUDC							
311. STRUC AND IMPROV	22,571	2.88	2011	100-R3,			650
312. BOILER PLANT EQUIP.	69,949	2.99	2011	70-R2,			2,091
314. TURBO GEN. UNIT	24,946	2.96	2011	80-R2,			738
315. ACC. EL. EQUIP.	12,026	2.94	2011	90-R2,			354
316. MISC PWR PLANT EQUIP	1,105	2.92	2011	80R2.5			32
TOTAL	130,597	2.96					3,865
OTHER							
311. STRUC AND IMPROV	120,587	2.86	(A)	100-R3,			3,451
312. BOILER PLANT EQUIP.	343,746	4.25	(A)	70-R2 (1)			14,604
314. TURBO GEN. UNIT	135,132	3.52	(A)	80-R2,			4,751
315. ACC. EL. EQUIP.	72,767	4.08	(A)	90-R2 (2)			2,965
316. MISC PWR PLANT EQUIP	9,744	3.61	(A)	80R2.5			352
TOTAL	681,976	3.83					26,123
TOTAL STEAM PROD PLANT	941,822	3.59					33,813

(1) Survivor Curve used for Tools and Equipment is $30S_0$, Interim Survivor Curve for all other is $70R_2$

(2) Survivor Curve used for SAMAC is $30R_2$, Interim Survivor Curve for all other is $90R_2$

PHILADELPHIA ELECTRIC COMPANY - ELECTRIC OPERATIONS

CALCULATED DEPRECIATION ACCRUAL BY ACCOUNTS
FOR PLANT IN SERVICE AT MAR 31 1980
(THOUSAND $)

	ORIGINAL COST	LIFE SPAN			AVERAGE AGE		
	DEPRECIABLE	RATE %	TERM DATE	INTERIM CURVE	LIFE & CURVE	RATE %	ANNUAL ACCURAL
NUCLEAR PRODUCTION PLANT							
PEACH BOTTOM 2 & 3							
321. STRUC AND IMPROV	99,996	2.88	2009	100-R3,			2,880
322. REACTOR PLANT EQUIP.	137,464	3.01	2009	70-R2,			4,138
323. TURBO GEN. UNIT	66,417	2.99	2009	80-R2,			1,986
324. ACC. EL. EQUIP.	37,158	2.95	2009	90-R2,			1,096
325. MISC PWR PLANT EQUIP	11,525	2.96	2009	80R2.5			341
TOTAL	352,560	2.96					10,441
SALEM #1 & 50% OF COMMON FACILITIES							
321. STRUC AND IMPROV	97,138	2.88	2012	100-R3,			2,798
322. REACTOR PLANT EQUIP.	124,957	2.99	2012	70-R2,			3,736
323. TURBO GEN. UNIT	54,084	2.96	2012	80-R2,			1,601
324. ACC. EL. EQUIP.	44,883	2.94	2012	90-R2,			1,320
325. MISC PWR PLANT EQUIP	9,809	2.92	2012	80R2.5			286
TOTAL	330,871	2.94					9,741
TOTAL NUCLEAR PROD PLANT	683,431	2.95					20,182

PHILADELPHIA ELECTRIC COMPANY - ELECTRIC OPERATIONS

CALCULATED DEPRECIATION ACCRUAL BY ACCOUNTS
FOR PLANT IN SERVICE AT MAR 31 1980
(THOUSAND $)

	ORIGINAL COST	LIFE SPAN			AVERAGE AGE		
	DEPRECIABLE	RATE %	TERM DATE	INTERIM CURVE	LIFE & CURVE	RATE %	ANNUAL ACCURAL
HYDRAULIC PRODUCTION PLANT							
331. STRUC AND IMPROV	14,270				87-R1,	1.15	164
332. TURBO GEN. UNIT	34,279				100-R2,	1.00	343
333. WTR. WHEELS TURBS GENS	21,802				50-R2,	2.00	436
334. ACC. EL. EQUIP.	7,535				50-R2,	2.00	151
335. MISC PWR PLANT EQUIP	3,430				45-R1,	2.22	76
336. ROADS RR'S BRIDGES	998				60-R2,	1.67	17
TOTAL	82,314					1.44	1,187
OTHER PRODUCTION PLANT - CROYDON							
341. STRUC AND IMPROV	6,448	4.02	1999	100-R3,			259
342. FUEL HLDRS PRODUC ACC	9,484	4.02	1999	100-R3,			381
344. GENERATORS	45,446	4.08	1999	80-R2,			1,854
345. ACC. EL. EQUIP.	1,249	4.07	1999	90-R2,			51
346. MISC PWR PLANT EQUIP	754	4.05	1999	80R2.5			31
TOTAL	63,381	4.06					2,576
OTHER PRODUCTION PLANT - OTHER							
341. STRUC AND IMPROV	1,449	4.01	(A)	100-R3,			58
342. FUEL HLDRS PRODUC ACC	3,298	4.02	(A)	100-R3,			132
343. PRIME MOVERS	3,554	4.10	(A)	80-R2			145
344. GENERATORS	56,447	4.14	(A)	80-R2,			2,335
345. ACC. EL. EQUIP.	10,070	4.11	(A)	90-R2,			413
346. MISC PWR PLANT EQUIP	194	5.29	(A)	80R2.5			10
TOTAL	75,012	4.12					3,093
TOTAL PRODUCTION PLANT	138,393	4.10					5,669

PHILADELPHIA ELECTRIC COMPANY - ELECTRIC OPERATIONS

CALCULATED DEPRECIATION ACCRUAL BY ACCOUNTS
FOR PLANT IN SERVICE AT MAR 31 1980
(THOUSAND $)

	ORIGINAL COST DEPRECIABLE	LIFE SPAN RATE %	LIFE SPAN TERN DATE	LIFE SPAN INTERIM CURVE	AVERAGE AGE LIFE & CURVE	AVERAGE AGE RATE %	ANNUAL ACCURAL
TRANSMISSION PLANT							
352. STRUC AND IMPROV	12,175				50-R4,	2.00	244
353. STATION EQUIPMENT.	160,907				40-R3	2.50	4,023
353.1 STAT EQUIP SALEM 1	0						0
354. TOWERS AND FIXTURES	144,818				50-S1,	2.00	2,896
355. POLES AND FIXTURES	577				25-L2,	4.00	23
356. OVHD COND AND DEVICES	63,182				40-S1,	2.50	1,580
357. UNDERGROUND CONDUIT	2,747				50-R4,	2.00	55
358. UNGRD COND & DEVICES	33,928				40-R4,	2.50	848
359. ROADS AND TRAILS	1,705				50-S1,	2.00	34
TOTAL	420,039					2.31	9,703
DISTRIBUTION PLANT							
361. STRUC AND IMPROV	27,872				55-R3,	1.82	507
362. STATION EQUIPMENT.	253,064				40-R2,	2.50	6,327
364. POLES TOWERS AND FIX	105,171				36-R1,	2.78	2,924
365. OVHD COND AND DEVICES	167,763				31-S0,	3.23	5,419
366. UNDERGROUND CONDUIT	129,274				50-R4,	2.00	2,585
367. UNGRD COND & DEVICES	182,903				40-R1,	2.50	4,573
368. LINE TRANSF & INST	120,527				27-L.5	3.70	4,460
369.1 SERVICES - AERIAL	25,953				25-L3,	4.00	1,038
369.2 SERVICES - UNDGRD	35,977				40-L0,	2.50	899
370. METERS	64,256				50-S6,	2.00	2,104
371. INST ON CUST PREM	317				25-O3,	4.00	13
373. STR LGHT SIG SYS							
373.0 LUMINAIRES	13,325				15-L0,	6.67	889
373.1 AERIAL CONDUCTORS	442				7-L0,	14.29	63
373.2 UNGRD CONDUCTORS	5,842				25-L.5	4.00	234
373.3 P O L CONDUCTORS	2,056				10-R1.5	10.00	206
TOTAL	1,134,742					2.84	32,241
GENERAL PLANT							
390. STRUC AND IMPROV	12,488				35-R3,	2.86	357
393. STORES EQUIPMENT.	448				23-L2,	4.35	19
394. TOOLS SHOP & GARG EQ	3,247				43-R2,	2.33	76
395.1 LAB EQUIP - TESTING	3,776				45-L1,	2.22	84
395.2 LAB EQUIP METER	507				35-R2,	2.86	14
395.3 LAB EQUIP CHEM	285				42-R3,	2.38	7
397. COMMUNICATION EQUIP	530				15-L1,	6.67	35
398. MISC EQUIP	761				23-S1,	4.35	33
TOTAL	22,042					2.84	625
	3,422,783					3.02	103,420

Philadelphia Electric Company - Electric Operations

CALCULATED DEPRECIATION ACCRUALS BY ACCOUNTS
FOR PLANT IN SERVICE AT MARCH 31, 1980
(Thousand $)

	Original Cost			Life Span			Average Life		
	Total	Non-Depreciable	Depreciable	Rate %	Term Date	Interim Curve	Life & Curve	Rate %	Annual Accrual
Subtotal Electric Plant (C-16)	$3,422,783	-	$3,422,783						$103,420
Add:									
Non-Depreciable Accounts									
302. Franchises & Consents (Intangible)	163	163	-						
310. Land & Land Rights (Steam Prod.)	7,624	7,624	-						
320. Land & Land Rights (Nuclear Prod.)	338	338	-						
330. Land & Land Rights (Hydraulic Prod.)	1,401	1,401	-						
340. Land & Land Rights (Croydon)	451	451	-						
340. Land & Land Rights (Other Prod.)	397	397	-						
350. Land & Land Rights (Transmission)	39,065	39,065	-						
360. Land & Land Rights (Distribution)	18,691	18,691	-						
389. Land & Land Rights (General)	1,987	1,987	-						
Total Non-Depreciable	$70,117	$70,117	-						
Old Production Plant									
311. Structures & Improvements	$6,618	$6,618	-						
312. Boiler Plant Equipment	240	240	-						
314. Turbogenerator Unit	1,099	1,099	-						
315. Accessory Electrical Equip.	724	724	-						
316. Misc. Power Plant Equipment	321	321	-						
Total Old Production Plant	$9,002	$9,002	-						
Anti-Trust Price Adjustment	(6,041)	(6,041)	-						(641)
Deduct: Mothballed Plant Included in Above									
Barbadoes Units #3 & #4									
311. Structures and Improvements	$9,379	-	$9,379						$231
312. Boiler Plant Equipment	10,196	-	10,196						303
314. Turbogenerator units	4,800	-	4,800						128
315. Accessory Elec. Equipment	1,910	-	1,910						62
316. Misc. Power Plant Equipment	706		706						21
Total Units #3 & #4	$26,991		$26,991						$745
Richmond Unit #12									
311. Structures and Improvements	$5,584	-	$5,584						$125
312. Boiler Plant Equip.	2,465	-	2,465						99
314. Turbogenerator Units	2,954		2,954						82
315. Accessory Elec. Equip.	2,068		2,068						69
316. Misc. Power Plt. Equip.	299	-	299						10
Total Unit #12	$13,370		$13,370						$385
Total Electric Utility Plant for Ratemaking	$3,455,500	$73,078	$3,382,422						$101,649
Adjustments to Arrive at Plant per Books									
Add:									
Eddystone #3 - 50% Common Facilities									
311. Structures & Improvements	$19,963	-	$19,963						
312. Boiler Plant Equipment	9,558	-	9,558						
314. Turbogenerator Units	4,059	-	4,059						
315. Accessory Electrical Equip.	1,683	-	1,683						
316. Misc. Power Plant Equipment	977	-	977						
Total 50% of Common Facilities	$36,240	-	$36,240						
Mothballed Plant									
Barbadoes Units #3 & #4	26,991	-	26,991						
Richmond Unit #12	13,370	-	13,370						
Total Steam Production	$76,601	-	$76,601						

Philadelphia Electric Company - Electric Operations

CALCULATED DEPRECIATION ACCRUALS BY ACCOUNTS
FOR PLANT IN SERVICE AT MARCH 31, 1980
(Thousand $)

	Original Cost		
	Total	Non-Depreciable	Depreciable
Add:			
Salem Unit #2 (Excl. Common Facilities)			
Nuclear Production Plant			
321. Structures & Improvements	$51,744	-	$51,744
322. Reactor Plant Equipment	141,932	-	141,932
323. Turbogenerator Units	44,249	-	44,249
324. Accessory Electric Equipment	44,663	-	44,663
325. Misc. Power Plant Equipment	5,052	-	5,052
Total Nuclear Production	$287,640	-	$287,640
Transmission Plant			
353. Station Equipment	2,062	-	2,062
Total Transmission	$2,062	-	$2,062
Total Salem #2 Excl. Common Facilities	$289,702	-	$289,702
Salem Unit #2 Common Facilities			
321. Structures & Improvements	$24,955	-	$24,955
322. Reactor Plant Equipment	32,246	-	32,246
323. Turbogenerator Units	13,952	-	13,952
324. Accessory Electric Equipment	11,652	-	11,652
325. Misc. Power Plant Equipment	2,476	-	2,476
Total Nuclear Production	$85,281	-	$85,281
Transmission			
353. Station Equipment	1,043	-	1,043
Total Transmission Plant	$1,043	-	$1,043
Total Common Facilities Associated With Salem Unit #2	$86,324 *	-	$86,324 *
Total Salem Unit #2	$376,026	-	$376,026
Distribution Plant			
25 Hertz Facilities for Amtrak			
Somerset Converter Substation			
360. Land and Land Rights	$9	$9	-
361. Structures & Improvements	147	147	-
362. Station Equipment	566	566	-
Total Somerset Substation	$722	$722	-
Richmond Converter Substation			
360. Land and Land Rights	$24	$24	-
361. Structures & Improvements	72	72	-
362. Station Equipment	2,012	2,012	-
366. Underground conduit	5	5	-
367. Underground conductors & devices	4	4	-
Total Richmond Substation	$2,117	$2,117	-
Lamokin Converter Substation			
360. Land and Land Rights	$15	$15	-
361. Structures & Improvements	174	174	-
362. Station Equipment	1,205	1,205	-
366. Underground conduit	2	2	-
367. Underground conductors and devices	3	3	-
Total Lamokin Substation	$1,399	$1,399	-
Total Distribution Plant	$4,238	$4,238	-
Subtotal Electric Plant	$3,912,365	$77,316	$3,835,049
Less:			
Steam Production Plant			
Eddystone #4 - 50% Common Facilities			
and Additional Allowances AFUDC			
311. Structures and Improvements	$22,571	-	$22,571
312. Boiler plant equipment	10,807	-	10,807
314. Turbogenerator units	4,589	-	4,589
315. Accessory Electric equipment	1,903	-	1,903
316. Misc. Power Plant Equipment	1,105	-	1,105
Total 50% Common Facilities	$40,975	-	$40,975
Less:			
Nuclear Production Plant Peach Bottom			
Units #2 and #3 Additional Allowed AFUDC			
321. Structures and Improvements	1,468	-	1,468
Total Nuclear Production	$1,468	-	$1,468
Total Electric Plant Per Books	$3,869,922	$77,316	$3,792,606

*Does not include adjustment of approximately $14,000 for additional AFUDC Associated with Common Facilities for the period 6/79 to 10/79.

Philadelphia Electric Company - Electric Operations
RICHMOND UNIT #12 AND
BARBADOES UNITS #3 & #4 - AMORTIZATION
(Thousand $)

In 1979, the Company will retire those generating units designated Richmond 12 and Barbadoes 3 and 4. These facilities, which are currently classified as "mothballed", are being retired because current service requirement projections indicate that the capacity from these uneconomical units will not be required in the early and mid-1980's as was previously believed.

As per the Commission order at RID 438, these units were removed from the Company's rate base and depreciation was discontinued. The amortization of the unrecovered cost, based on the theoretical reserve at 12/31/77 (RID 438 test year), as developed below is required to achieve full and equitable recovery of the original cost associated with these units.

	Barbadoes Units #3&#4	Richmond Unit #12	Total
Original Cost*	$26,991	$13,370	$40,361
Associated Reserve 12/31/77	18,602	10,015	28,617
Unrecovered Cost	$8,389	$3,355	$11,744
Annual Amortization (5 years)			2,349
Decrease in income for return			$2,349

*Based on Plant at 3/31/79

PHILADELPHIA ELECTRIC COMPANY - COMMON

CALCULATED DEPRECIATION ACCRUAL BY ACCOUNTS
FOR PLANT IN SERVICE AT MAR 31 1980
(THOUSAND $)

		ORIGINAL COST	LIFE SPAN			AVERAGE AGE		
		DEPRECIABLE	RATE %	TERM DATE	INTERIM CURVE	LIFE & CURVE	RATE %	ANNUAL ACCURAL
GENERAL PLANT								
390.	STRUCTS AND IMPROV							
390.0	BRICK BUILDINGS	19,858				30-R1,	3.33	661
390.1	CONCRETE BULIDINGS	28,264				30-R1,	3.33	941
390.2	STEEL FRAM BUILDS	26,239				30-R1,	3.33	874
391.	OFF FURN AND EQUIP	8,147				30-L0,	3.33	271
392.	TRANS EQUIPMENT	21,695				11-L1,	9.09	1,972
393.	STORES EQUIPMENT	677				30-L2,	3.33	23
394.	TOOLS SHOP & GAR EQ	4,674				30-S0,	3.33	156
396.	PWR OPERATED EQUIP	1,955				10L1.5	10.00	195
397.	COMMUNICATION EQUIP	20				15-L1,	6.67	1
398.	MISCELLANEOUS EQUIP	1,701				20-L2,	5.00	85
	TOTAL	113,230					4.57	5,179
		113,230					4.57	5,179

Philadelphia Electric Company - Electric Operations

CALCULATED DEPRECIATION ACCRUALS BY ACCOUNTS
FOR PLANT IN SERVICE AT MARCH 31, 1980
(Thousand $)

	Original Cost			Life Span			Average Life		
	Total	Non-Depreciable	Depreciable	Rate %	Term Date	Interim Curve	Life & Curve	Rate %	Annual Accrual
Subtotal Common Plant	$113,230		$113,230					4.57	$5,179
Non-Depreciable Accounts									
301. Organization (Intangible)	677	677	-						
389. Land & Land Rights (General)	2,020	2,020	-						
Total Non-Depreciable	$2,697	$2,697	-						
Total Common Plant	$115,927	$2,697	$113,230						$5,179
Less: Transportation Cleared to Operating Expense									
392. Transportation	$21,695	-	$21,695				$11L_1$	9.09%	$1,972
394.3 Garage Equipment	802	-	802				$30S_0$	3.33	27
396.1 Vehicles	1,903	-	1,903				$10L_{1.5}$	10.00	190
Total Transportation	$24,400	-	$24,400						$2,189
Total Common Less Transportation	$91,527	$2,697	$88,830						$2,990
Allocation of Common Less Transportation									
Electric 85.718			$76,143						$2,563
Gas 12.869			11,432						385
Steam 1.413			1,255						42
100.000%			$88,830					3.37	$2,990

(A)

Philadelphia Electric Company - Electric Operations

PRODUCTION PLANT
LIFE SPAN DATA

Station		Term Year
Steam Production		
Chester		1982
Richmond #9		1985
Cromby		1990
Delaware		1988
Eddystone 1&2		1990
Schuylkill		1992
Southwark		1988
Keystone		1998
Conemaugh		2006
Other Production (Excl. Croydon)		
Station	**Unit**	
Barbadoes	6&7	1986
Southwark	3,4,5&6	1992
Eddystone	10,20,30,40	1994
Cromby	Diesel	1992
Chester	Diesel	1992
Delaware	Diesel	1992
Richmond	Diesel	1992
Barbadoes	Diesel	1992
Southwark	Diesel	1992
Schuylkill	Diesel	1992
Delaware	9,10,11, & 12	1994
Schuylkill	10	1994
Chester	7,8,9	1994
Keystone	Diesel	1993
Falls	1,2,&3	1995
Moser	1,2,&3	1995
Conemaugh	Diesel	1995
Barbadoes	5	1995
Richmond	73,74,81,91,92	1997
Portable Equipment		1996
Plymouth Meeting	9 & 15	1996
Salem	C.T.	1996

Philadelphia Electric Company - Electric Operations

NON-REVENUE PRODUCING CONSTRUCTION WORK IN PROGRESS

The Company's claim for non-revenue producing construction work in progress for the test year ended March 31, 1980 is the same as that developed on pages C-22 and C-22a of Company Exhibit DPS-1. This claim is held constant for the future test year since it is estimated that the non-revenue producing CWIP will be approximately the same for both years.

		Trended O.C.	
	OC	1 Yr.	3 Yr.
Non-Revenue Construction Work in Progress	$1,371	$1,371	$1,371
Less: Associated Retirements	144	307	304
Total (To A-2)	$1,227	$1,064	$1,067

Philadelphia Electric Company - Electric Operations
Land Held for Future Use (Account 105)
As of March 31, 1980
(Thousand $)

Location of Property	Date Originally Included in Plant Accounts	Date Construction Expected to Start	Balance
Production			
Land for Future Generation Stations			
Fulton Site, Lancaster Co., PA	1972	1988	$357
Total Production			$357
Transmission			
Land for Future Substations and Lines			
Cromby - N. Wales Line	1961	1982	$65
220 kV Line New Hope-Buckingham	1969	1983	173
Cromby - Plymouth Meeting Line	1966	1982	72
200 kV R/W Adj. to Waneeta Sub.	1973	1983	137
500 kV Line Bradford - Newlinville	1972	1988	1,253
Limerick Substation Site	1972	1982	15
Land for Expansion of Pres. Sta. & Lines			
Barbadoes - Cromby Line	1971	1982	43
Peach Bottom - Newlinville Line	1972	1988	161
Peach Bottom - Whitpain Line	1972	1985	892
Total Transmission			$2,811
Distribution			
Land for Future Substations			
Hays Substation	1961	1982	4
Woodside Substation	1957	1982	7
High Substation	1975	1984	13
Phillips Substation	1963	1984	3

Philadelphia Electric Company - Electric Operations
Land Held for Future Use (Account 105)
As of March 31, 1980
(Thousand $)

Location of Property (cont'd)	Date Originally Included in Plant Accounts	Date Construction Expected to Start	Balance
Land for Expansion of Pres. Stations			
Willis Substation	1974	1982	2
Hagys Substation	1974	1984	3
Bacton Substation	1974	1982	1
Salford Substation	1974	1984	4
Acorn Substation	1974	1982	2
Oaks Substation 33-4 kV	1974	1982	1
Moser Substation	1974	1987	1
Oaks Substation 33 kV	1974	1987	4
Matthews Substation	1974	1982	5
Creek Substation	1974	1983	2
Bootjack Substation	1957	1984	3
Landenberg Substation	1974	1983	4
Diltown Substation	1974	1981	11
Faggs Substation	1974	1983	1
Boyd Substation	1974	1982	2
Highland Substation	1974	1981	4
Byers Substation	1974	1981	10
Ship Substation	1974	1982	1
Page Substation	1974	1982	4
Pocopson Substation	1974	1981	4
Crest Substation	1974	1981	1
Tanguy Substation	1974	1984	5
Pennsbury Substation	1974	1981	9
Montgomery Substation	1968	1981	3
Folly Substation	1974	1981	1
Kellers Substation	1974	1983	3
Aque Substation	1974	1981	1
Wright Substation	1974	1983	2
Piper Substation 1974	1974	1981	2
Turk Substation	1974	1982	6
Canal Substation	1974	1981	5
Woodburne Substation	1974	1984	52
Broadale Substation	1974	1981	21
Worth Substation	1973	1984	1
Rickerts Substation	1974	1981	15
Total Distribution			$223
Total Land Held for Future Use			$3,034

Philadelphia Electric Company - Electric Operations
MATERIALS AND SUPPLIES
March 31, 1980
(Thousand $)

The adjustment to rate base for materials and supplies is shown below. Regarding electric fuel inventory, the quantities of fuel expressed in either tons of coal or barrels of oil are the design averages for the twelve months ending March 31, 1980. The unit price for Philadelphia area coal is the mid-point of the $40/ton to $45 ton range expected to be incurred during the twelve months ending March 1980 for coal with a maximum sulfur content of 2%. The unit prices for coal at Keystone and Conemaugh are those budgeted to be burned during the month of March 1980. The unit prices of No. 6 oil and No. 2 oil are the current delivered prices as of July 1979.

Materials and supplies figures shown are amounts estimated to be on hand as of March 31, 1980.

Electric Fuel Inventory			
Coal			
Philadelphia Area	335,000 tons @ $42.50/ton =	$14,200	
Keystone	168,000 tons @ $28.21/ton =	4,700	
Conemaugh	166,000 tons @ $36.96/ton =	6,100	
Total Coal Inventory			$25,000
Oil			
No. 6	1,200,000 bbls @ $22.00/bbl =	$26,400	
No. 2	500,000 bbls @ $26.00/bbl =	13,000	
Total Oil Inventory			$39,400
Plant Materials and Supplies			
Electric operating (Account 154-1)			
Total	$27,000		
Less: Commission adjustment @ RID 438	5,000		
			$22,000
Tools and related equipment			
Electric		600	
Allocated share of common and safety $1,120 x 85.718% (a)		960	
Total			$1,560
Stores Expense Undistributed			
Allocated portion $500 x 85.718% (a)			429
Total Electric Materials and Supplies			$88,389

(a) page B-17

Philadelphia Electric Company - Electric Operations

CASH WORKING CAPITAL
March 31, 1980
(Thousand $)

Operating & Maintenance Expense

Proforma operating and maintenance expense(a)	$771,721
Average lag in days between receipt of revenues and payment of operating expenses (b)	34
Average daily O&M $771,721 ÷ 365	$2,114
Requirement $2,114 x 34 days	$71,876

Taxes and Prepayments

The 3/31/80 balances for taxes accrued, collections payable, taxes prepaid and other prepayments are estimated to be 6% greater than the corresponding actual balances as of 3/31/79. Therefore, the 13-month average balances for those accounts will be 6% greater than the corresponding amounts shown on page C-25 of Exhibit DPS-1.

Thirteen Month Average Balances

	Taxes Accrued	Collections Payable	Taxes Prepaid	Other Prepayments	Net
	(1)	(2)	(3)	(4)	(5)=(1)+(2)-(3)-(4)
Total Company					
3/31/79 (c)	$44,900	$5,300	$19,700	$2,300	$28,200
3/31/80 (d)	$47,600	$5,600	$20,900	$2,400	$29,900
Allocation to Electric Operations					
% (e)	100.1	85.718	96.7	85.718	-
$	$47,600	$4,800	$20,200	$2,100	$30,100

Bank Balances

The thirteen month average bank balances for the period ending March 31, 1980 are not estimated to be increased over the $12,300 average for the thirteen months ended March 31, 1979. Electric Operations portion of that total is 85.718% of $12,300 or $10,500.

Total Cash Working Capital

$71,876 - $30,100 + $10,500 =	$52,276

(a) Test year Oper. & Maintenance Expense	$765,385
Proforma Expense Adjustments (D-3, D-5, D-11, D-12, D-13, D-17)	6,336
Proforma Oper. & Maintenance Expense	$771,721

(b) Ref. Page C-25a of Exhibit DPS-1
(c) Ref. Page C-25 of Exhibit DPS-1
(d) Balances for 3/31/79 increased approximately 6%
(e) Ref. Page C-25 of Exhibit DPS-1

Philadelphia Electric Company - Electric Operations

ELIMINATION OF STATE TAXES AND RELATED STAC REVENUE
12 Months Ending March 31, 1980
(Thousand $)

Certain State Taxes are recovered by the State Tax Adjustment Clause (STAC) in the Company's tariff. The following adjustment removes the effect of higher state taxes enacted since 1969 and remove related STAC revenues.

State Taxes to be Removed		
Realty	$6,875 (a)	
Gross Receipts Tax	29,396 (b)	
Capital Stock Tax	5,872 (c)	
Corporate Net Income Tax	3,768 (d)	
Total		$45,911
Related STAC Revenue to be Removed		
Actual STAC	48,754	
Portion not removed	2,843	
Portion removed		45,911
Effect on income available for return		$0

(a) Actual Realty Tax from B-14

(b) Actual Gross Receipts Tax from B-14	53,404
Less: 4.5% GRT on STAC rev. of $48,754	2,194
Less: 4.5% GRT on PAC rev of $49,902	2,246
Remainder: 4.5% GRT on other revenue	$48,964
Portions of GRT related to 1970 tax rate increase	
Full GRT on STAC rev	$2,194
Excess GRT on other revenue	
$48,964 x (2.5% incr - 4.5% total)	27,202
Total	$29,396
(c) Actual Capital Stock Tax (CST) from B-14	$14,680
Portion of CST related to 1970 tax rate increase	
$14,680 x (0.4% incr - 1.0% total)	5,872
(d) Actual Corporate Net Income Tax (CNI) from B-14	$15,779
Plus: CNI portion of deferred taxes A/C liberalized depreciation on plant	(1,237)
CNI portion of deferred taxes on deferred fuel expense	(245)
Total	$14,297
Portion of CNI related to pre-1970 tax rates	
Actual test year taxable income for CNI	$158,220
Less: STAC revenue	48,754
Less: Excess depreciation	702
Plus: Realty Tax	6,875
Plus: STAC - related Gross Receipts Tax	29,396
Plus: STAC - related Capital Stock	5,872
Pre-1970 taxable income for CNI	$150,907
Pre-1970 CNI tax @ 6.977%	$10,529
Portion of CNI related to 1970 tax rate increase ($14,297 - $10,529)	$3,768

Philadelphia Electric Company - Electric Operations

FULL YEAR EFFECT OF PRESENT BASE RATES
12 Months Ending March 31, 1980

Not Applicable

Philadelphia Electric Company - Electric Operations

SUMMARY OF ANNUALIZATION OF REVENUES, EXPENSES & TAXES
FOR CUSTOMERS ADDED AND INCREASED USAGE
12 Months Ended March 1980
(Thousand $)

	Total
Increase in Base Revenue (D-3a)	$6,765
Less: Gross Receipts Tax @ 2.0%	135
Increase in Revenue After Gross Receipts Tax	$6,630
Less: Increase in Operating Expenses 191,051,430 kWh (D-3a) x 1.3478¢/kWh (a)	2,575
Increase in Taxable Income	$4,055
Less: Income Taxes @ 49.768%	2,018
Increase in Income for Return	$2,037

(a) Cost of energy recovered in base rates. No claim is being made for incremental O & M associated with the increased sales.

Philadelphia Electric Company - Electric Operations

GROWTH IN USAGE OF EXISTING CUSTOMERS
AND ANNUALIZATION OF NEW CUSTOMER USAGE (a)
12 Months Ended March 31, 1980
(Thousand $)

Growth in Usage of Existing Customers And Additional Revenue	Residential	House Heating	Small Comm. & Industrial	Large Commercial & Industrial: 20 Largest Customers	Large Commercial & Industrial: All Other	Total
Annual Growth in kWh, 3-Yr. Average (D-3b)	(31)	(645)	261	6,516,900	10,700	
1/2 of Annual Growth in kWh	(16)	(323)	131	3,258,450	5,350	
No. of Custs. Beginning of Test Year (D-3b)	1,207,200	41,100	114,035	20	5,708	
Increase Usage	(19,315,200)	(13,275,300)	14,938,585	65,169,000	30,357,800	78,054,885
Revenue, cents per kWh (b)	5.35¢	3.76¢	5.81¢	2.84¢	3.44¢	
Increased Revenue, Thousand $	($1,033)	($499)	$868	$1,851	$1,044	$2,231
Annualization of New Customer Usage and Additional Revenue						
Customers Added During Year (D-3b)	6,096	5,800	385	0	27	
1/2 of Customers Added During Year	3,048	2,900	193	0	14	
Average Use Per Customer in kWh (D-3b)	5,683	21,867	24,819	-	1,962,171	
Increased Sales in kWh	17,321,784	63,414,300	4,790,067		27,470,394	112,996,545
Revenue, Cents per kWh (b)	5.35¢	3.76¢	5.81¢		3.44¢	
Increased Revenue, Thousand $	$927	$2,384	$278	-	$945	$4,534
Total Additional Revenue	($106)	$1,885	$1,146	$1,851	$1,989	$6,765

a. Residential is total of Rates R and WH. House Heating is Rate RH. Small Commercial and Industrial is total of Rates GLP and GS. Large Commercial and Industrial is total of Rates PD and HT.

b. Revenue in cents per kWh is the average unit base revenue at Tariff No. 25 (page A-5, col. 6/col. 1).

Philadelphia Electric Company - Electric Operations

DEVELOPMENT OF AVERAGE ANNUAL GROWTH IN KWH PER CUSTOMER

	12 Months Ended March 1977	12 Months Ended March 1980	3-Yr. Avg.
Residential			
mWh Sales	6,840,959	6,860,710	
Number of Customers			
Beginning of Period	1,184,218	1,207,200	
End of Period	1,195,559	1,213,296	
Monthly Average	1,188,428	1,207,253	
kWh per Average Customer	5,777	5,683	
Growth in kWh per Average Customer		(94)	(31)
House Heating			
mWh Sales	675,589	960,540	
Number of Customers			
Beginning of Period	26,413	41,100	
End of Period	30,565	46,900	
Monthly Average	28,384	43,926	
kWh per Average Customer	23,802	21,867	
Growth in kWh per Average Customer		(1,935)	(645)
Small Commercial & Industrial			
mWh Sales	2,715,462	2,835,120	
Number of Customers			
Beginning of Period	112,708	114,035	
End of Period	113,325	114,420	
Monthly Average	112,980	114,233	
kWh per Average Customer	24,035	24,819	
Growth in kWh per Average Customer		784	261

Philadelphia Electric Company - Electric Operations

DEVELOPMENT OF AVERAGE ANNUAL GROWTH IN KWH PER CUSTOMER

	12 Months Ended March 1977	12 Months Ended March 1980	3-Yr. Avg.
20 Largest Customers			
mWh Sales	4,615,277	5,006,294	
Number of Customers			
Beginning of Period	20	20	
End of Period	20	20	
Monthly Average	20	20	
kWh per Average Customer	230,763,900	250,314,700	
Growth in kWh per Average Cust.		19,550,800	6,516,900
Large Commercial & Industrial Other Than 20 Largest			
mWh Sales	10,885,600	11,229,506	
Number of Customers			
Beginning of Period	5,634	5,708	
End of Period	5,645	5,735	
Monthly Average	5,640	5,723	
kWh per Average Customer	1,930,071	1,962,171	
Growth in kWh per Average Customer		32,100	10,700

Philadelphia Electric Company - Electric Operations
ELIMINATION OF ENERGY CLAUSE REVENUE AND
RELATED FUEL EXPENSE
12 MONTHS ENDED MARCH 31, 1980
(Thousand $)

A portion of energy expenses are recovered through the operation of the Electric Energy Clause (EC). The following adjustment removes the effects of all energy costs not reflected in base rates and all associated revenues(a).

Energy Clause Revenues to be removed		
Total Energy Clause Revenue (A-5)		$49,902
Energy Expenses to be removed		
Test Year Energy Expense (D-4a)	$398,830	
Less: Test Year Energy Expense Deferred (D-4a)	(15,655)	
Net Energy Expense	$414,485	
Energy Expense Recovered in Base Rates:		
Test Year Sales x Base Cost		
27,217,014 mWh x 1.3478¢/kWh	$366,829	
Expense Covered by EC to be removed		$47,656
Gross Receipts Tax to be removed		
GRT on Fuel Adjustment Revenue @ 4.5%		2,246
Total expenses to be removed		$49,902
Increase in Taxable Income		$0
Income Taxes @ 49.768%		0
Increase in Income for Return		$0

(a) Both revenue and expense include the effects of the generation from Salem Unit No. 2. Since Revenue and Expense are adjusted to reflect only the cost of energy recovered in base rates, it is unnecessary to remove the fuel expense associated with Salem Unit No. 2 or make any associated revenue adjustment. Operating expenses not covered by the Energy Adjustment Clause which are incurred as a result of Salem No. 2 operation are removed from expense on page D-13 of this exhibit.

~~D-4a~~

Philadelphia Electric Company - Electric Operations
DEVELOPMENT OF RECOVERABLE ENERGY COSTS AND
ENERGY COSTS DEFERRED
12 Months Ended March 31, 1980
(Thousand $)

	Total Applicable Energy Costs (1)	Allocation Factor (2)	Allocated Energy Cost (3)	Recovered in Base Rates (4)	Recoverable (5)=(3)-(4)	FA Revenue (6)	FA Revenue Excl. GRT (7)=(6)x.955	Deferred (8)=(5)-(7)
April 1979	$32,607	.9759	$31,821	$28,295	$3,526	$3,573	$3,412	$114
May	31,191	.9760	30,443	27,544	2,899	2,406	2,298	601
June	38,164	.9764	37,264	29,441	7,823	1,830	1,748	6,075
July	36,980	.9770	36,129	32,287	3,842	1,589	1,517	2,325
August	43,643	.9778	42,674	32,458	10,216	3,941	3,764	6,452
September	36,170	.9784	35,389	31,415	3,974	3,674	3,509	465
October	29,381	.9786	28,752	29,628	(876)	5,820	5,558	(6,434)
November	28,317	.9786	27,711	28,182	(471)	6,565	6,269	(6,740)
December	32,110	.9781	31,407	31,141	266	5,256	5,019	(4,753)
January 1980	36,040	.9772	35,220	33,955	1,265	5,368	5,126	(3,861)
February	34,595	.9772	33,808	31,653	2,155	5,005	4,780	(2,625)
March	28,869	.9772	28,212	30,830	(2,618)	4,875	4,656	(7,274)
Total	$408,067		$398,830	$366,829	$32,001	$49,902	$47,656	($15,655)

Philadelphia Electric Company - Electric Operations

INCREASES IN WAGES AND BENEFITS REFLECTING
3/31/80 RATES
($1,000)

This adjustment develops the increases in wage and benefits expenses effective August 1, 1979 not yet fully reflected in the budgeted 12 months ended March 31, 1980.

Wages - Total Company

December 1979-Regular Payroll (as budgeted)	$17,780
Paid days - December 1979	21
Average payroll per paid day, budgeted	$846.7
Average payroll per paid day, revised $846.7 x 1.022 (a)	$865.3
Annualized regular payroll $865.3 x 261 paid days/year	$225,843
Less: 12 months regular payroll, as budgeted (b)	220,064
Increased regular payroll expense	$5,779
Plus: Overtime @ 11.4% (c)	659
Increase in total payroll expense	$6,438

Pensions and Benefits - Total Company

Annual increase (effective 8/1/79)	$2,135
Less: portion of increased pensions and benefits included in budget	1,140
Increase in pensions and benefits	$995

Total increase in wages, pensions and benefits

Total, PE Company ($6,438 + 995)	$7,433
Total, allocated to Electric Operations $7,433 x 62.3% (d)	4,631
Decrease in income taxes @ 49.768%	2,305
Decrease in income for return	$2,326

(a) Budget included a 5% wage increase while actual 8/1/79 increase will be 7.2%
(b) See Appendix 1
(c) See Appendix 2
(d) Ref: page D-5 of Exhibit DPS-1.

Philadelphia Electric Company - Electric Operations

ADJUST BOOK DEPRECIATION ACCRUAL TO CALCULATED
ACCRUAL RATE FOR YEAR-END PLANT AS OF MARCH 31, 1980
(Thousand $)

	Cost of Plant	S/L Accrual Rate	S/L Accrual Amount	
Total Depreciable Plant for Ratemaking Purposes (C-17)	$3,382,422	3.01%	$101,649	
Mothballed Plant Amortization (C-18a)			2,349	
Allocated Common Plant, Excluding Transportation (C-20)	76,143	3.37	2,563	
Calculated Depreciation Accrual			$106,561	
Plus: Experienced Salvage Expense			$2,463	(1)
5-Year Amortization of P.B. #1			232	(2)
Total Calculated Depreciation incl. Salvage Expense & P.B. #1 Amortization			$109,256	
Book Depreciation Accrual and Amortization (B-9) $112,491 less $615 nuclear decommissioning expense (3)			111,876	
Decrease in Depreciation Accrual			$2,620	
Increase in Income for Return			$2,620	

(1) Development of experienced net salvage expense for five years ended March 31, 1980

	Net Salvage Electric	Common
1975 - Last 9 months	($613)	105
1976	(2,805)	176
1977	(2,784)	(420)
1978	(2,991)	(534)
1979	(2,485)	647
1980 - First 3 months	(744)	152
Five Year Average excluding Common	($2,484)	25
Electric's Share of Common @ 85.718	21	
Total	($2,463)	

Experienced Salvage Expense

(2) Reference: RID 129

(3) Budgeted decommissioning expense, which was booked as a depreciation accrual for the first 3 months of 1980, is adjusted on page D-16.

Philadelphia Electric Company
INCREASE IN INCOME TAX BY COMPUTING
TAX DEPRECIATION ON YEAR END BASE
AS OF MARCH 31, 1980
(Thousand $)

Tax Depreciation year ended 3/31/80				
Electric (D-7a)				$146,063
Common (D-7a)				
Allocated To:				
Electric	85.718%	2,893		2,893
Gas	12.869	434		
Steam	1.413	48		
Total	100.000%	3,375		
Electric including allocated common				$148,956
Less: Amortization of Anti-trust Settlement for Tax Purposes				402
Total Allowable Tax Depreciation & Amortization on year-end Basis at 3/31/80				$149,358
Less: Tax Depreciation accrued per books for 12 months ending 3/31/80 including allocated Common				
Book Depreciation (B-9) $112,900 less $615 nuclear decommissioning[a]			$112,285	
Amortization of Anti-Trust (B-9)			(641)	
Add: Transportation Depreciation Charged to Clearing				
Electric	85.718%	1,860	1,860	
Gas	12.869	279		
Steam	1.413	31		
Total	100.000%	2,170		
Excess of Tax over Book Depreciation			$67,404	
Total Accrued Tax Depreciation for 12 Months Ended 3/31/80				$180,908
Total Decrease in Tax Depreciation				$31,550
Increase in Income Tax @ 49.768%				$15,702
Decrease in Income for Return				$15,702

(a) Budgeted decommissioning expense, which was booked as a depreciation accrual for the first 3 months of 1980, is adjusted on page D-16.

Philadelphia Electric Company - Electric Operations

DEPRECIABLE TAX BASES AND RESULTING DEPRECIATION
AS OF MARCH 31, 1980
(Thousand $)

Electric	Depreciation Base For Taxes (a)	Depreciation Rate For Taxes (b)	Tax Depreciation (c)
S/L Plant Installed Prior to 1954	$343,088	.12%	$403
Liberalized Plant Installed 1954-1969	343,016	6.82	23,399
Liberalized Plant Installed 1970	68,256	9.16	6,252
Liberalized Plant Installed 1971	66,019	12.08	7,975
Liberalized Plant Installed 1972	40,057	10.89	4,361
Liberalized Plant Installed 1973	68,455	10.70	7,326
Liberalized Plant Installed 1974	259,864	13.55	35,214
Liberalized Plant Installed 1975	63,320	9.77	6,187
Liberalized Plant Installed 1976	114,041	9.99	11,398
Liberalized Plant Installed 1977	207,889 (d)	12.78	26,565
Liberalized Plant Installed 1978	54,347	9.14	4,968
Liberalized Plant Installed 1979	114,909	9.10	10,459
Liberalized Plant Installed 1980	17,282	9.00	1,556
Total	$1,760,543		$146,063
Tax Depreciation - Common			
S/L Plant Installed Prior to 1954	$7,162	1.61%	$115
Liberalized Plant Installed 1954 to 1969	7,788	4.67	364
Liberalized Plant Installed 1970	1,461	6.09	89
Liberalized Plant Installed 1971	410	8.29	34
Liberalized Plant Installed 1972	32,247	4.44	1,433
Liberalized Plant Installed 1973	1,434	7.53	108
Liberalized Plant Installed 1974	690	12.90	89
Liberalized Plant Installed 1975	652	19.17	125
Liberalized Plant Installed 1976	734	41.69	306
Liberalized Plant Installed 1977	966	9.94	96
Liberalized Plant Installed 1978	1,564	20.33	318
Liberalized Plant Installed 1979	2,322	10.64	247
Liberalized Plant Installed 1980	391	13.04	51
Total	$57,821		$3,375

(a) Plant in Service at 3/31/80 less tax reserves as of 4/1/80.

(b) Depreciation rates are composites based on plant life estimates which are prescribed by U.S. Treasury Guideline Regulation as modified by ADR Rates incorporated in the 1971 Revenue Act.

(c) Liberalized Tax Depreciation has been computed under the declining balance method, switched to either straight line or sum-of-the-years method as appropriate.

(d) Includes $161,441 of net depreciable cost of Salem Unit 1, placed in service for tax purposes in December, 1976; but, not until June, 1977 for book purposes (date of commercial operation). Includes $2,666 of net depreciable cost of Keeney-Salem 500 kV transmission line, placed in service for tax purpose in February, 1972; but not until December, 1977 was the line energized.

Philadelphia Electric Company - Electric Operations
NORMALIZATION OF TAX DEFERRALS ON YEAR-END PLANT
AND ELIMINATION OF TAX DEFERRALS FROM 1970 TAX
LEGISLATION REFLECTED ON D-1
(Thousand $)

Plant		
Excess Depreciation (a) (D-8a)		$50,194
Common Allocated to Electric (b)		230
Total		$50,424
Tax Deferral on 3/31/80 Plant @ 49.768%		$25,095
Tax Deferral on Plant Per Books	$31,709 (c)	
Less: Deferred Tax Removed through STAC A/C Excess Depreciation on Plant (D-1)	(1,237)	
Net Per Books		$32,946
Change in Tax Deferral on Plant		$7,851
Fuel		
Fuel Expense Deferred 12 Months ended 3/31/80		($15,655)
Tax Deferral on fuel @ 49.768%		(7,791)
Tax Deferral on Fuel per books	($8,036)(c)	
Less: Deferred tax removed through STAC A/C Deferred	(245)	
Net per books		(7,791)
Change in tax deferred on fuel		0
Increase in Income for Return		$7,851

(a) The amounts reflected represent normalization of tax deferrals, generated by the use of liberalized tax depreciation for plant additions increasing capacity and installed after 1969, plus the deferral resulting from use of the Class Life System (ADR) of the Revenue Act of 1971. Pursuant to the Pa.P.U.C. Order dated 8/17/73 at RID 29, these figures exclude depreciation on plant replacing capacity.

(b) Allocation of Common:

	Percent (B-18)	Depreciation Subject to Normalization
Electric	85.718	230
Gas	12.869	34
Steam	1.413	4
Total	100.000%	268 (D-8a)

(c) Total provision for deferred income taxes as shown on B-9 is comprised as follows:

Portion a/c deferred fuel cost	($8,036)
Portion a/c excess depreciation on plant	31,709
Portion a/c polution control facilities	490
Portion a/c nuclear plant decommissioning	(318)
Portion a/c/ nuclear fuel storage	(2,441)
Portion a/c retroactive rate increase	(26,221)
Total Deferred Income Taxes	($4,817)

Philadelphia Electric Company
TAX DEPRECIATION SUBJECT TO NORMALIZATION
NEW CAPACITY ONLY AS OF MARCH 31, 1980
(Thousand $)

	Depreciation Base			Depreciation Rate		Depreciation		
	For S/L Base	Tax Reserve	For Liberalized Base	Liberalized	S/L	Liberalized	S/L	Excess
Electric Plant								
1970	$129,200	$66,639	$62,561	9.39%	3.39%	$5,873	$4,381	$1,492
1971	141,317	82,216	59,101	12.51	3.39	7,392	4,786	2,606
1972	70,375	37,027	33,348	11.39	3.33	3,799	2,343	1,456
1973	110,698	53,078	57,620	11.12	3.40	6,408	3,760	2,648
1974	497,889	250,050	247,839	13.73	4.25	34,035	21,146	12,889
1975	76,064	27,580	48,484	10.17	3.46	4,931	2,630	2,301
1976	158,826	47,695	111,131	10.04	3.55	11,155	5,633	5,522
1977	285,987	83,299	202,688	12.89	4.68	26,132	13,372	12,760
1978	55,707	8,376	47,331	9.22	3.60	4,362	2,008	2,354
1979	109,986	7,451	102,535	9.15	3.69	9,386	4,054	5,332
1980	15,662	178	15,484	9.07	3.64	1,404	570	834
Total	$1,651,711	$663,589	$988,122			$114,877	$64,683	$50,194
Common Plant								
1970	3,372	2,036	1,336	6.14%	1.81%	82	61	21
1971	2,643	2,473	170	12.35	.79	21	21	-
1972	39,875	12,578	27,297	4.45	2.25	1,216	896	320
1973	4,002	2,754	1,248	7.13	1.87	89	75	14
1974	1,185	832	353	9.92	3.63	35	43	(8)
1975	1,808	1,524	284	14.79	4.15	42	75	(33)
1976	3,235	2,836	399	58.40	12.24	233	396	(163)
1977	1,245	515	730	8.77	5.62	64	70	(6)
1978	1,076	212	864	10.30	5.58	89	60	29
1979	2,013	137	1,876	8.64	4.17	162	84	78
1980	291	4	287	10.10	4.47	29	13	16
Total	$60,745	$25,901	$34,844			$2,062	$1,794	$268

Philadelphia Electric Company - Electric Operations

ADJUSTMENT OF INCOME TAXES TO REFLECT
PRO FORMA INTEREST CHARGES BASED ON
YEAR-END PLANT AND EMBEDDED COST OF DEBT

As permitted by the Pa. P.U.C. order dated August 17, 1973, the Company adopted Income Tax Allocation effective October 1, 1973, under which electric operating income is credited with the tax savings on interest charges associated with debt issued to finance plant actually in service.

This adjustment is necessary to reflect the pro forma interest charges on the level of plant in service as of March 31, 1980 and the 8.31% embedded cost of debt at 3/31/80 (Page B-19).

	(Thousand $)
Actual Test Year Interest Charges Allocated to Electric in Developing Operating Taxes (B-15)	$119,958
Pro Forma Interest Charges Allocable to Electric Based on Year-End Plant in Service	
Original Cost Measure of Value at 3/31/80 (A-2)	2,501,021
Financed by Debt	
Percent	52.1%
Amount	$1,303,032
Pro Forma Interest Charges Allocable to Electric for developing operating taxes (Embedded Debt Cost of 8.31%)	$108,282
Decrease in Interest Charges Allocated to Electric Operations ($119,958 - $108,282)	$11,676
Increase in Income Taxes @ 49.768%	$5,811
Decrease in Income for Return	$5,811

Philadelphia Electric Company - Electric Operations

ANNUALIZATION OF REVENUES SUBJECT TO
FERC JURISDICTION
12 Months Ending March 31, 1980

Not Applicable

Philadelphia Electric Company - Electric Operations

ADJUSTMENT TO ELIMINATE THE OPERATION AND MAINTENANCE EXPENSES
ASSOCIATED WITH RICHMOND UNIT #12
AND BARBADOES UNITS #3 and #4 INCLUDED IN THE
TEST YEAR O&M FIGURES
($1,000's)

In 1979, the Company will retire those generating units designated Richmond 12 and Barbadoes 3 and 4. These facilities, which are currently classified as "mothballed", are being retired because current service requirement projections indicate that the capacity from these units will not be required in the early and mid-1980's as was previously believed.

The purpose of this adjustment is to eliminate from the test year the booked operation and maintenance expenditures associated with these units.

Operating cost 4/1/79-3/31/80	$480
Maintenance Cost 4/1/79-3/31/80	165
Total O&M included in test year	$645
Less: Income Tax @ 49.768%	321
Increase in Income for Return	$324

Philadelphia Electric Company - Electric Operations
MISCELLANEOUS EXPENSES, AMORTIZATION AND ADJUSTMENT
PROVIDED FOR IN PRIOR RATE PROCEEDINGS
AT MARCH 31, 1980

In prior proceedings the Commission, for ratemaking purposes, provided for the amortization or adjustment of certain types of expenses. An adjustment of book expense to reflect these provisions is developed below:

	$1,000's		
	Booked In Test Year (1)	Ratemaking Provision per PUC Order (2)	Adjustment (3)=(2)-(1)
Change in Operating & Maintenance Expense			
1. Amortize $2,055,000 of Storm Damage over 10 years (Re: RID 29)	-	206	206
2. Amortization of Rate Case Expenses Associated with RID 129 and RID 295 As Allowed at RID 438	-	194	194
Amortization of Rate Case Expenses Associated with RID 438	536	170 (a)	(366)
Sub-Total - Change in O&M			34
Change in Income Taxes			
Decrease in income taxes a/c O&M expenses @ 49.768%			(17)
Amortization of $3,537 of Federal income tax deficiency charge over 5 years (Re: RID 438)			884
Net Change in Income Taxes			$867
Total decrease in Income for Return			$901

(a) Total cost associated with RID 438 ($850,000) amortized over 5 years.

Philadelphia Electric Company - Electric Operations
ADJUSTMENT TO ELIMINATE THE OPERATION
AND MAINTENANCE EXPENSES (EXCLUDING FUEL) AND ITC EFFECTS
ASSOCIATED WITH SALEM UNIT #2
INCLUDED IN THE TEST YEAR ENDING MARCH 31, 1980

The Company has contracted to sell the output from its Salem Nuclear Station Unit #2 to Jersey Central Power and Light Company. As a result of this energy sale, the company has eliminated the cost of this unit from its rate base claim. Salem Unit #2 was budgeted to begin commercial operations on 10/1/79. This adjustment eliminates all operating and maintenance expenses (excluding fuel) associated with Salem Unit #2 from the Company's operating statement for the period October 1, 1979 to March 31, 1980. All fuel expenses above the base cost of fuel are eliminated on page D-3 of this exhibit. Additionally, this adjustment eliminates the effects on income of the Investment Tax Credit associated with Salem Unit #2.

1. O&M Expenses	
Operating Cost for Salem Unit #2 10/79 - 3/80	2,010
Maintenance Cost for Salem Unit #2 10/79 - 3/80	1,757
Total O&M Associated with salem Unit #2 Included in Test Year O&M	$3,767
Less: Income Tax @ 49.768%	1,875
Increase in Income for Return	$1,892
2. Investment Tax Credit	
Decrease in Current Year's Amortization	$700 (a)
Decrease in Income for Return	700
3. Total Increase in Income for Return $1,892 less $700	$1,192

(a) Represents Salem Unit #2 portion of Total PE Electric Company's amortization of $4,791 (B-14)

Philadelphia Electric Company - Electric Operations

FULL YEAR EFFECT OF 46%
FEDERAL INCOME TAX RATE
12 Months Ending March 31, 1980

Not Applicable

Philadelphia Electric Company - Electric Operations
FEDERAL OLD AGE BENEFITS
FOR THE YEAR ENDED 3/31/80
(Thousand $)

Effective 1/1/80 the wage base subject to federal old age benefits tax was increased to $25,900 from $22,900 while the rate of tax remained at 6.13%.

Developed below is the increase in expense on account of the above increase.

Total Company

4/1/79 to 3/31/80	$13,788 (a)
4/1/79 to 3/31/80	12,526 (b)
Increase	$1,261

Allocation to Electric Operations

$1,261 x 62.3% (c)	$786
Decrease in income taxes @ 49.768%	391
Decrease in income for return	$395

(a) Full year effect of increase in base
(b) Estimated 9 months at old base; 3 months at new base
(c) Based on 12 months ended March 31, 1979 (Ref: Page D-5 of Exhibit DPS-1)

Philadelphia Electric Company - Electric Operations

DECOMMISSIONING COST ADJUSTMENT FOR
PEACH BOTTOM NO. 2 & 3 AND SALEM NO. 1
($1,000's of 1980 Dollars)

This adjustment provides for the decommissioning expense in the year 2008 of three nuclear units - Peach Bottom Units No. 2 and 3 and Salem Unit No. 1. The adjustment in 1980 dollars is based on PE's share of the decommissioning cost for the three units which amounts to $100,765. The annual amount to be collected from customers is an amortization of the $100,765 decommissioning cost over the 28-year period 1980 through 2008. A detailed description of the estimated decommissioning cost is provided in Statement 12, The Direct Testimony of W. B. McLeod.

PE Share of Decommissioning Cost	$100,765
Annual Accrual for Decommissioning ($100,765 ÷ 28 years)	$3,599
Less: Budgeted Accrual for Decommissioning	615
Increase in Accrual for Decommissioning	$2,984
Change in Deferred Income Taxes @ 49.768%	(1,485) (a)
Decrease in Income for Return	$1,499

(a) Although decommissioning expenses are not currently deductible for tax purposes, the Company will accrue deferred tax credits associated with the decommissioning expenses.

Philadelphia Electric Company - Electric Operations

SPENT FUEL DISPOSAL COST ADJUSTMENT
FOR PEACH BOTTOM NO. 2 & 3 AND SALEM NO. 1
($1,000 of 1980 Dollars)

This adjustment provides for the cost of disposing spent fuel due to be discharged from Peach Bottom No. 2 & No. 3 and Salem No. 1 beginning in 1985. This adjustment (in 1980 dollars) is based on PE's share of the spent fuel disposal costs for the three units which amounts to $230,677. A detailed description of these costs is provided in Statement 12, The Direct Testimony of W. B. McLeod.

PE Share of Spent Fuel Disposal Costs	$230,677	
Annual Accrual for Spent Fuel Disposal ($230,677 ÷ 28 years)	$8,238	
Less: Budgeted Accrual for Spent Fuel Disposal	4,730	
Increase in Accrual for Spent Fuel Disposal	$3,508	
Change in Deferred Income Taxes at 49.768%	(1,746)	(a)
Decrease in Income For Return	$1,762	

(a) Although spent fuel disposal costs are not currently deductible for tax purposes, the Company will accrue deferred tax credits associated with the spent fuel disposal costs.

Philadelphia Electric Company - Electric Operations

NORMALIZATION OF INCOME TAXES ASSOCIATED
WITH ADR REPAIR ALLOWANCE
12 MONTHS ENDING MARCH 1980

Pursuant to the PUC Order at RID 438 the Company adopted the ADR Repair Allowance in its 1978 Federal Income Tax Return. The Company is now accruing and flowing through the tax deferrals resulting from this election. For the test year ending March 1980 the tax flow through amounts to $2,548(a).

This adjustment normalizes the reduction in income taxes associated with the estimated allowable ADR Repair Allowance for the twelve month ending March 1980 over a 30-year period. The effects on income for return of the tax amortization and resulting deferrals are detailed below:

Increase in income taxes (with normalization)	$2,548
Amortization over 30 years	85 (a)
Increase in Income Taxes Deferred	$2,463
Decrease in Income for Return	$2,463

(a) ADR Repair Allowance (Reference page B-15) = $5,120
Effective Tax Rate = 49.768%
Tax Flow Through = $2,548

Philadelphia Electric Company

ESTIMATED PAYROLL DATA
FISCAL YEAR ENDED MARCH 31, 1980
(Thousand $)

Month	Total Payroll	Less Overtime	Regular Payroll
April - 1979	$18,382	$1,842	$16,540
May	20,219	2,011	18,208
June	18,577	1,842	16,735
July	19,453	1,778	17,675
August	21,395	2,049	19,346
September	19,090	2,263	16,827
October	22,008	2,624	19,384
November	20,892	2,183	18,709
December	19,857	2,077	17,780
Jan-March 1980	65,586	6,726	58,860
Total	$245,459	$25,395	$220,064

Philadelphia Electric Company

ESTIMATED PAYROLL DATA
BUDGET YEAR 1979
(Thousand $)

Month	Total Payroll	Less Overtime	Regular Payroll	Overtime as % of PE Regular Payroll
Jan - 1979	$19,939	$2,010	$17,929	11.2%
Feb	17,427	1,706	15,721	10.9
Mar	19,042	1,846	17,196	10.7
Apr	18,382	1,842	16,540	11.1
May	20,219	2,011	18,208	11.0
June	18,577	1,842	16,735	11.0
July	19,453	1,778	17,675	10.1
Aug	21,395	2,049	19,346	10.9
Sept	19,090	2,263	16,827	13.4
Oct	22,008	2,624	19,384	13.5
Nov	20,892	2,183	18,709	11.7
Dec	19,857	2,077	17,780	11.7
Total	$236,281	$24,231	$212,050	11.4%

R-79060865
Phila Elec Co DP-3
Hbg. 10-24-79
James C. Haas

PHILADELPHIA ELECTRIC COMPANY
ELECTRIC OPERATIONS
R-79060865

ACTUAL EXPERIENCE IN THE FUTURE TEST YEAR

QUARTER ENDED JUNE 30, 1979

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Philadelphia Electric Company - Electric Operations
STATEMENT OF ELECTRIC OPERATING INCOME
(Thousand $)

		3 Months Ending 6/30/79		
		Budget	Actual	Over/(Under) Budget
OPERATING REVENUE				
	Sales of Electricity:			
440	Residential	$93,156	$91,381	($1,775)
442	Small Commercial & Industrial	41,936	42,006	70
	Large Commercial & Industrial	132,970	133,187	217
444	Public Street and Highway Lighting	3,776	3,834	58
445	Other Sales to Public Authorities	2,090	2,054	(36)
446	Sales to Railroads and Railways	6,988	6,741	(247)
447	Sales for Resale	4,259	4,312	53
448	Interdepartmental Sales	487	481	(6)
	Total Sales of Electricity	$285,662	$283,996	($1,666)
	Other Operating Revenues:			
450	Forfeited Discounts	1,097	1,102	5
451	Miscellaneous Service Revenues	29	28	(1)
453	Sale of Water & Water Power	-	-	-
454	Rent from Electric Property	645	686	41
455	Interdepartmental Rents	409	409	-
456	Other Electric Revenues	829	220	(609)
	Total Other Operating Revenues	$3,009	$2,445	($564)
	Total Electric Operating Revenues	$288,671	286,441	($2,230)

Philadelphia Electric Company - Electric Operations
OPERATING EXPENSES
(Thousand $)

		3 Months Ending 6/30/79		
		Budget	Actual	Over/(Under) Budget
I.	POWER PRODUCTION EXPENSES			
	STEAM POWER GENERATION			
	OPERATION			
500	Operation Supervision	$1,534	$1,500	(34)
501	Fuel	71,345	60,325	(11,020)
502	Steam Expenses	2,587	2,358	(229)
504	Steam Transferred - Credit	(5,576)	(6,223)	(647)
505	Electric Expenses	1,404	1,345	(59)
506	Miscellaneous Steam Power Expenses	1,849	1,949	100
507	Rents	8	6	(2)
	Total Operation	$73,151	$61,260	($11,891)
	MAINTENANCE			
510	Maintenance Supervision and Engineering	712	757	45
511	Maintenance of Structures	921	513	(408)
512	Maintenance of Boiler Plant	5,936	5,331	(605)
513	Maintenance of Electric Plant	1,557	2,795	1,238
514	Maintenance of Miscellaneous Steam Plant	336	392	56
	Total Maintenance	$9,462	$9,788	$326
	Total Power Production Expenses-Steam Power	$82,613	$71,048	($11,565)
	NUCLEAR POWER GENERATION			
	OPERATION			
517	Operation Supervision and Engineering	540	635	95
518	Fuel	5,591	5,525	(66)
519	Coolants and Water	124	124	-
520	Steam Expenses	2,368	2,137	(231)
523	Electric Expenses	189	142	(47)
524	Miscellaneous Nuclear Power Expenses	2,428	2,750	322
525	Rents	2	12	10
	Total Operation	$11,242	$11,325	$83
	MAINTENANCE			
528	Maintenance Supervision and Engineering	956	964	8
529	Maintenance of Structures	149	289	140
530	Maintenance of Reactor Plant Equipment	1,804	1,462	(342)
531	Maintenance of Electric Plant	1,097	1,161	64
532	Maintenance of Miscellaneous Nuclear Plant	330	530	200
	Total Maintenance	$4,336	$4,406	$70
	Total Power Production Expenses-Nuclear Power	$15,578	$15,731	$153

(a) Includes $4,730 associated with spent nuclear fuel disposal expense which was budgeted for the first 3 months of 1980.

Philadelphia Electric Company - Electric Operations
OPERATING EXPENSES
(Thousand $)

		3 Months Ending 6/30/79		
		Budget	Actual	Over/(Under) Budget
	HYDRAULIC POWER GENERATION			
OPERATION				
535	Operation Supervision and Engineering	70	60	(10)
536	Water and Power	110	-	(110)
537	Hydraulic Expenses	127	127	-
538	Electric Expenses	36	29	(7)
539	Miscellaneous Hydraulic Power Generation Expenses	55	49	(6)
	Total Operation	$398	$265	($133)
MAINTENANCE				
541	Maintenance Supervision and Engineering	53	53	-
542	Maintenance of Structures	62	18	(44)
543	Maintenance of Reservoirs, Dams & Waterways	52	16	(36)
544	Maintenance of Electric Plant	273	191	(82)
545	Maintenance of Miscellaneous Hydraulic Plant	23	18	(5)
	Total Maintenance	$463	$296	($167)
	Total Power Production Expenses-Hydraulic Power	$861	$561	($300)
	OTHER POWER GENERATION			
OPERATION				
546	Operation Supervision and Engineering	203	198	(5)
547	Fuel	5,780	3,377	(2,403)
548	Generation Expenses	162	141	(21)
549	Miscellaneous Other Power Generation Expenses	212	211	(1)
550	Rents	667	667	-
	Total Operation	7,024	4,594	(2,430)
MAINTENANCE				
551	Maintenance Supervision and Engineering	60	60	-
552	Maintenance of Structures	40	41	1
553	Maintenance of Generating and Electric Plant	1,101	811	(290)
554	Maintenance of Miscellaneous Other Power	16	13	(3)
	Total Maintenance	1,217	925	(292)
	Total Power Production Expenses - Other Power	$8,241	$5,519	(2,722)
	OTHER POWER SUPPLY EXPENSES			
555	Purchased Power			
	Purchased	2,671	2,429	(242)
	Interchange			
	Economy Power	26,157	60,480	34,323
	Capacity	-	-	-
556	System Control and Load Dispatching	648	618	(30)
557	Other Expenses	(6,442)	(26,037)	(19,595)
	Total Other Power Supply Expenses	23,034	37,490	14,456
	Total Power Production Expenses	$130,327	$130,349	$22

Philadelphia Electric Company - Electric Operations
OPERATING EXPENSES
(Thousand $)

		3 Months Ending 6/30/79		
		Budget	Actual	Over/(Under) Budget
	TRANSMISSION EXPENSES			
OPERATION				
560	Operation Supervision and Engineering	$346	$331	($15)
561	Load Dispatching	154	159	5
562	Station Expenses	335	310	(25)
563	Overhead Line Expenses	46	61	15
564	Underground Line Expenses	38	46	8
566	Miscellaneous Transmission Expenses	219	280	61
567	Rents	1,897	1,545	(352)
	Total Operation	$3,035	$2,732	($303)
MAINTENANCE				
568	Maintenance Supervision and Engineering	155	170	15
569	Maintenance of Structures	106	74	(32)
570	Maintenance of Station Equipment	897	879	(18)
571	Maintenance of Overhead Lines	754	487	(267)
572	Maintenance of Underground Lines	147	115	(32)
573	Maintenance of Miscellaneous Transmission Plant	-	13	13
	Total Maintenance	$2,059	$1,738	($321)
	Total Transmission Expenses	$5,094	$4,470	($624)
	DISTRIBUTION EXPENSES			
OPERATION				
580	Operation Supervision and Engineering	$1,092	$1,113	$21
581	Load Dispatching	229	237	8
582	Station Expenses	898	753	(145)
583	Overhead Line Expenses	675	691	16
584	Underground Line Expenses	241	249	8
585	Street Lighting and Signal System Expenses	144	88	(56)
586	Meter Expenses	626	697	71
587	Customer Installation Expenses	741	722	(19)
588	Miscellaneous Distribution Expenses	1,765	1,646	(119)
589	Rents	191	190	(1)
	Total Operation	$6,602	$6,386	($216)
MAINTENANCE				
590	Maintenance Supervision and Engineering	773	814	41
591	Maintenance of Structures	132	150	18
592	Maintenance of Station Equipment	1,333	658	(675)
593	Maintenance of Overhead Lines	3,289	3,416	127
594	Maintenance of Underground Lines	1,244	1,394	150
595	Maintenance of Line Transformers	135	171	36
596	Maintenance of Street Lighting and Signal System	221	215	(6)
597	Maintenance of Meters	299	323	24
598	Maintenance of Miscellaneous Distribution Plant	172	171	(1)
	Total Maintenance	$7,598	$7,312	($286)
	Total Distribution Expenses	$14,200	$13,698	($502)

Philadelphia Electric Company - Electric Operations
OPERATING EXPENSES
(Thousand $)

		3 Months Ending 6/30/79		
		Budget	Actual	Over/(Under) Budget
	IV CUSTOMER ACCOUNTS EXPENSES			
OPERATION				
901	Supervision	323	267	(56)
902	Meter Reading Expenses	1,685	1,682	(3)
903	Customer Records and Collection	6,591	6,211	(380)
904	Uncollectible Accounts	2,035	1,614	(421)
905	Miscellaneous Customer Accounts Expenses	260	239	(21)
	Total Customer Accounts Expenses	$10,894	$10,013	($881)
	V CUSTOMER SERVICE & INFORMATIONAL EXPENSES			
OPERATION				
907	Supervision	40	31	(9)
908	Customer Assistance Expenses	310	281	(29)
909	Informational & Instructional Advertising Expenses	359	319	(40)
910	Misc. Cust. Serv. & Information Expenses	45	43	(2)
	Total Cust. Serv. & Information Expenses	$754	$674	($80)
	VI SALES EXPENSES			
OPERATION				
911	Supervision	21	20	(1)
912	Demonstrating and Selling Expenses	57	58	1
913	Advertising Expenses	19	13	(6)
914	Miscellaneous Sales Expenses	14	3	(11)
	Total Sales Expenses	$111	$94	($17)
	VII ADMINISTRATIVE AND GENERAL EXPENSES			
OPERATION				
920	Administrative and General Salaries	3,252	3,323	71
921	Office Supplies and Expenses	1,752	1,982	230
923	Outside Services Employed	662	645	(17)
924	Property Insurance	825	700	(125)
925	Injuries and Damages	976	1,384	408
926	Employee Pensions and Benefits	7,563	6,953	(610)
928	Regulatory Commission Expenses	193	397	204
929	Duplicate Charges - Credit	(270)	(242)	28
930	General Advertising and Miscellaneous	1,202	1,220	18
	Total Operation	$16,155	$16,362	$207
MAINTENANCE				
932	Maintenance of General Plant	96	113	17
	Total Administrative and General Expenses	$16,251	$16,475	$224
	VIII TOTAL OPERATION AND MAINTENANCE EXP. (B-9)	$177,631	$175,773	($1,858)
	IX DEPRECIATION AND AMORTIZATION			
942	Depreciation (B-9)	$26,458	$26,505	$47
943	Amortization of Other Electric Plant	(160)	(161)	(1)
944	Amortization of Property Losses	232	232	-
	Total Depreciation and Amortization	$26,530	$26,576	$46

(a) Includes $615 booked in first 3 months of 1980 to reflect cost of nuclear decommissioning.

Philadelphia Electric Company - Electric Operations
OPERATING EXPENSES
Twelve Months Ended March 31,
(Thousand $)

	3 Months Ending 6/30/79		
	Budget	Actual	Over/(Under) Budget
X TAXES			
TAXES OTHER THAN INCOME TAXES			
State and Local			
Capital Stock - Pennsylvania	3,644	3,645	1
Capital Stock - New Jersey	61	60	(1)
Gross Receipts	12,602	12,504	(98)
Real Estate - Local	239	238	(1)
Real Estate - State	1,721	1,492	(229)
Personal Property - New Jersey	31	30	(1)
Local Franchise	61	61	-
Public Utility Commission Expense	688	553	(135)
State Unemployment Compensation	87	155	68
Philadelphia Realty Occupancy	43	42	(1)
Miscellaneous State and Local	6	5	(1)
Total State and Local	$19,183	$18,785	($398)
Federal			
Telephone and Telegraph	-	6	6
Federal Unemployment Compensation	10	10	-
Federal Old Age Benefits	38	68	30
Total Federal	$2,382	$1,539	($843)
Total Taxes Other Than Income	$21,613	$20,408	($1,205)
INCOME TAXES			
State - Pennsylvania	988	1,710	722
State - Maryland	3	5	2
State - New Jersey	42	80	38
Federal	(663)	2,282	2,945
Local - Philadelphia	-	-	-
Total Income Taxes	$370	$4,077	$3,707
Provisions for Deferred Income Taxes	$9,797	$19,591	$9,794
Income Taxes Deferred in Prior Years - Credit	(462)	(13,198)	(12,736)
*Investment Tax Credit Adjustments	3,807	3,875	68
TOTAL ALL TAXES	$35,125	$34,753	($372)
XI GAIN OR LOSS FROM DISPOSITION OF UTILITY PLANT	-	-	-
XII TOTAL OPERATING EXPENSES (B-9)	$239,286	$237,102	($2,184)

* Investment tax credit of $45,806 less amortization of $4,791

Philadelphia Electric Company
ELECTRIC PLANT BUDGET AND ACTUAL ADDITIONS
APRIL TO JUNE 1979
(Thousand $)

	March 1979 Filing	3 Months Net Budget Additions	Total	March 1979 Filing	3 Months Actual Additions	Total	Over/(Under) Budget
Electric Plant in Service							
Intangible Plant	$163	-	$163	$163	-	$163	-
Steam Production Plant	$914,212	$9,791	$924,003	$914,212	$4,019	$918,231	($5,772)
Nuclear Production	741,922	4,707	746,629	741,922	6,472	748,394	1,765
Hydraulic Production	81,614	1,149	82,763	81,614	(1)	81,613	(1,150)
Other Production Plant	138,664	84	138,748	138,664	(4)	138,660	(88)
Total Production Plant	$1,876,412	$15,731	$1,892,143	$1,876,412	$10,486	$1,886,898	($5,245)
Transmission Plant	$459,346	$120	$459,466	$459,346	$146	$459,492	$26
Distribution Plant	$1,110,364	$16,430	$1,126,794	$1,110,364	$6,765	$1,117,129	($9,665)
General Plant	$16,602	$108	$16,710	$16,602	$205	$16,807	$97
Electric Plant in Service	$3,462,887	$32,389	$3,495,276	$3,462,887	$17,602	$3,480,489	($14,787)
Common Plant in Service							
Intangible Plant	$677	-	$677	$677	-	$677	-
General Plant	116,358	1,045	117,403	116,358	483	116,841	(562)
Total Common Plant	$117,035	$1,045	$118,080	$117,035	$483	$117,518	($562)

Phila. Elec Co
Statement No. 3
R-7906086 5
Hrg. 10-24-79

Before The Pennsylvania Public Utility Commission

RE: Philadelphia Electric Company

Electric Operations

Direct Testimony of Donald P. Scott

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COMMISSION

July 1979

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FOLDER

TESTIMONY OF DONALD P. SCOTT

Q. Please state your name and address for the record.

A. Donald P. Scott, 2301 Market Street, Philadelphia, Pennsylvania.

Q. By whom are you employed Mr. Scott and in what capacity?

A. I am Controller of the Philadelphia Electric Company.

Q. What is your educational background?

A. I was graduated in 1958 from the Pennsylvania State University with a Bachelor of Science in Business Administration, and I also have attended the University of Pennsylvania where I received a diploma from the Wharton Management Program.

Q. Can you tell us something of your experience with Philadelphia Electric Company?

A. I joined Philadelphia Electric Company in 1960 as a Junior Technical Assistant in the Financial division of the Finance and Accounting Department following two years of service in the United States Army. From 1960 until 1964, I worked in the areas of economic analysis, finance and investor relations. From 1964 to 1968, I worked in Taxes Division, Internal Auditing Division, Systems Division and two years in Rate Division. In 1968, I returned to Financial and was named Assistant Manager in 1971. In 1973, I was elected Assistant Treasurer of the Company and Manager of the Treasury Division with responsibility for cash management, banking relations, and stockholder accounting. In 1978, I was appointed Manager of the Financial Division and in September 1978 I was appointed to my present position.

Q. Have you been active in any professional organizations?

A. I am a member of the Application of Accounting Principles Committee of the Edison Electric Institute. This Committee has the responsibility of

keeping informed of the developments of accounting principles, conventions, and practices in the accounting profession and in regulatory accounting, and to prepare, for approval, proposed releases relating to the industry position on accounting principles.

Q. What are your responsibilities as Controller of Philadelphia Electric Company?

A. I report to the Vice President of Finance and Accounting Department. My responsibilities include maintaining and developing the Company's basic system of accounting and financial control; supervising the overall system of budgeting control, and the interpretation of financial results; preparation and presentation of earnings forecasts; and supervising the formulation of tax policies and the administration of tax accounting activities.

Q. Please describe the rate filing in Supplement No. 6 to Tariff Electric - Pa.PUC No. 25.

A. In support of Supplement No. 6 we have provided an accounting exhibit, designated Exhibit DPS-1, based on the historic test year ended March 31, 1979 which reflects data from the Company's actual books of account. In addition, we have provided Exhibit DPS-2 based on a future test year ended March 31, 1980. This data is drawn from the Company's 1979 budget and 1980 forecast. The Company's claim is based upon the future test year and reflects an increase to base revenues of $122,731,000 per year or a 9.8% increase in total operating revenues.

Q. What is the purpose of your testimony?

A. My testimony will describe and support the Company's original cost utility plant in service and its book operating revenue and expense levels including various accounting statements. I also will describe and support

the several adjustments to operating expenses which have been made to place the book levels upon a normalized test year basis. Finally, my testimony will explain and support the derivation of the amounts used for projecting the level of operation for the future test year ended March 31, 1980.

COUNSEL:

I ask that there be marked for identification as Exhibit DPS-1 a booklet of information filed with the Commission entitled Revenue, Expenses, Income and Measures of Value, Twelve Months ending March 31, 1979, and as Exhibit DPS-2 a booklet entitled Revenue, Expense, Income & Measures of Value, Twelve Months Ending March 31, 1980.

Q. Are you familiar with the information contained in Exhibit DPS-1 and DPS-2?

A. Yes, I am.

Q. Mr. Scott, will you be explaining all of the material which appears in these Exhibits?

A. No, I will not. I will be explaining all matters related to the Company's claimed electric and common plant in service, rate base deductions, the various accounting statements and statements related to plant balances and expense adjustments. As to certain plant and expense adjustments, I will explain the accounting of the adjustment while other witnesses address the adjustments technical subject matter. Certain portions of Exhibits DPS-1 and DPS-2 will be explained entirely by other witnesses. My testimony will concentrate on Exhibit DPS-2, but I will also explain any significant differences between the two Exhibits.

Q. In general terms, what are the contents of Exhibits DPS-1 and DPS-2?

A. Exhibits DPS-1 and DPS-2 contain a summary of financial data submitted to the Public Utility Commission in support of Supplement No. 6. The Exhibits contain four sections:

Section A has the Tables of Income Available for Return, Measures of Value, Adjustments to Ratemaking Basis and Revenue Increases by Tariff Subdivisions;

Section B contains basic accounting information from the Company records;

Section C contains data relating to the Measures of Value;

Section D shows details of adjustments to revenue and expenses.

Q. Please explain your development of the Company's current income for the test year ended March 31, 1980.

A. We have shown this on page A-1 of Exhibit DPS-2. As indicated on that page, our electric operating income for the March 31, 1980 test year after adjustments to a proforma rate-making basis is $200,121,000. This represents a rate of return of only 8.00% on the original cost element of $2,501,021,000.

Q. Please discuss the schedules shown in Exhibits DPS-1 and DPS-2 in sequence including any explanations you consider necessary.

A. Page A-1 presents the income available for return and the rate of return at the present and proposed rate levels. Actual (DPS-1) or budgeted (DPS-2) revenue, expenses, and income were taken directly from the Electric Operating Income Statement shown on Pages B-8 and B-9 of the respective Exhibits and were adjusted to derive the proforma income at present rates. The proforma income at present rates was then adjusted to reflect the higher rates of Supplement No. 6 to derive the operating income available for return with the proposed rates.

Page A-2 shows the measures of value of the electric plant in service at original cost, one-year trended cost, and three-year trended cost. The numbers used in development of the measures are referenced and will be explained more fully in the discussion of Sections B and C.

Page A-3 lists the eighteen adjustments that we have made to income for return. These adjustments decrease income by approximately $16.8 million net in the March 30, 1980 test year, and the details of each adjustment are included in Section D.

Page A-4 indicates the effects on income for return of Supplement No. 6.

Page A-5 shows the number of customers, kwh sales, revenue, and revenue increases and decreases by tariff subdivisions.

Q. Turning to Section B, please discuss its contents.

A. Section B information in Exhibit DPS-1 was taken directly from the Company's accounting books and records and in Exhibit DPS-2 from the Company's official budget for calendar year 1979 and forecast for calendar year 1980, in order to provide the basic financial information to support the request for a rate increase.

Q. How are the Company's accounting books and records maintained?

A. The Company's accounting records are maintained in accordance with the Pennsylvania Public Utility Commission Regulations, and in conformity with the Uniform System of Accounts prescribed for public utilities of Class A by both the Federal Energy Regulatory Commission and the Pennsylvania Public Utility Commission. The Company maintains a continuing property records system in conformity with the requirements of both Commissions' orders and systems of accounts.

Q. Are these accounts audited?

A. Yes. They are audited annually by an independent certified public accounting firm. In addition, in 1973 the Federal energy Regulatory Commission conducted a compliance audit through the end of 1972 to ascertain that the Company is keeping its accounts in conformity with the Uniform System of Accounts. The Pennsylvania Commission Staff

participated in the review of the findings of the FERC Staff audit. It also has made field examinations from time to time.

Q. Do the amounts shown in the plant accounts represent the original cost of the plant?

A. Yes. Determination of the original cost of the Company's electric plant was made in the 1940's for which approval orders were issued by both the Federal Energy Regulatory Commission and the Pennsylvania Commission, while subsequent plant additions, retirements and adjustments have been accounted for on an original cost basis.

Q. Is all of the physical plant represented by the dollars shown on Pages B-3 through B-6 in service?

A. Yes, except for construction work in progress of $1.3 billion which was not in service at the end of the test year, and the $15.1 million of plant held for future use.

Q. How do you determine that all property reflected in these accounts is used and useful?

A. We maintain a detailed system of capital authorizations, covering plant additions and retirements, under which any unit permanently taken out of service is recorded in the field, and that information is transmitted to the Plant Accounting Division where the necessary retirement accounting entry is made. Most retirements occur in connection with a capital improvement project, which supplants the units retired, so that the retirement work order is usually part of a construction authorization. Under our system, the maps and operating records maintained by the operating forces provide a running record of physical quantities and facilities in service, while the Plant Accounting Division maintains a cross check through their related financial records. We also have an

Internal Auditing Division which periodically reviews both plant accounting and operating records to see that these two are kept in step, and that any changes in property are properly reflected in the accounts.

Q. Would you please explain how the budgeting process is carried out by your Company?

A. Each year we prepare a monthly detailed budget for the succeeding calendar year as a tool for managing and conducting the operations of the Company. The budgeting process begins with the preparation of an instruction letter by my staff which sets forth guidelines concerning management decisions or expectations as to manpower, service dates of new units, retirements of old units and inflation factors. In preparation of the 1979 budget, a 6% inflation rate was used for adjusting historic expense levels where specific known price changes were not available. With this information, the various departmental divisions develop their separate segments of the budget, both as to operations and capital expenditures. Each department reviews its historic expense levels, any significant events which will alter those levels, known cost changes and the guidelines set forth in the instruction letter in the development of its separate segment.

After their completion, in the late fall, the departmental budgets are examined by my staff in the General Accounting Division in order to develop the over all company budget. Our group analyzes the significant items, discusses them with the various operating staff who developed the estimates, and revises the budget where appropriate or necessary. We then present the final budget to the Chairman of the Board and the President for their review and for submission to the board of directors for their final approval. The budgeting process is usually completed and approved in January.

Once established the budget is very rarely changed except for very significant events, such as a major rate increase being approved. The 1979 Budget and Forecast includes the effects of the Commission's final order at RID 438. As the year progresses we monitor actual results as compared to budget and develop an informal projection of the remainder of the year starting with the budget and adjusting for significant known changes. As a result of monitoring the results of 1979 to date, we find that the revenues and expenses included in the 1979 budget are not significantly different from actual experience.

Q. Is the same process used in developing the Company's forecast for the year following the budget year?

A. Yes, except that the forecast data is developed on an annual basis only. The instruction letter for the budget also sets forth the guidelines for the forecast. The inflation rate used in developing the 1980 forecast was 6.3%. Both this value and the 1979 inflation estimate of 6% are extremely conservative in light of current inflation rates.

Q. Please explain how the Company's 1979 budget and 1980 forecast data was employed to develop the basic accounting data used in the March 31, 1980 future test year as shown in Exhibit DPS-2.

A. In developing the "book" or "actual" revenue and expense data shown in Exhibit DPS-2, we employed data from the nine months of the Company's 1979 budget which fall within the March 31, 1980 future test year period. Revenues and Power Production expenses for the first three months of 1980 reflect specific sales and output projections based on seasonality of sales and available production units. For all other expenses, we have multiplied the 1980 forecast data by 25%. Resulting revenue and expense

values for the three months of 1980 were then added to the 1979 budget data to obtain the revenue and expense data which is termed "book" or "actual" data in the Exhibit.

In deriving the original cost measure of value for electric and common plant in service as of March 31, 1980, we have taken the December 31, 1979 budget balance for plant and analyzed the Forecast additions to determine what portion would be placed in service during the first three months of 1980. The book reserve on plant in service was determined in the same manner as that used for plant balances.

Q. Please continue the presentation of Section B with a page-by-page discussion of its contents.

A. Pages B-1 and B-2 of Exhibit DPS-2 present the expected balance sheet at March 31, 1980 for Philadelphia Electric Company. This balance sheet, as well as data shown on other operating statements in the B section, is obtained or derived from the Company's Budget and Forecast data. Pages B-1 and B-2 of Exhibit DPS-1 present a comparable balance sheet for the historic test year ended March 31, 1979 for Philadelphia Electric Company and System.

Pages B-3 through B-6 in each Exhibit show the original cost by plant accounts at test year end of the Company's electric plant and common utility plant, a portion of which is allocated to electric service by the allocation factor developed on Page B-17 which will be discussed later.

Page B-7 displays the book reserve for depreciation for the Company's electric plant and electric portion of common plant.

Page B-8 shows the consolidated income statement for the Company and its subsidiaries for the historic and future test years.

Page B-9 presents the operating income statement for the Company's electric operations.

Pages B-10 through B-14 show by primary accounts the expense items for electric operations for the historic and future test year periods.

Pages B-15 and B-16 show the computation of federal income tax and the development of electric operations share of the rate base adjustment for accumulated deferred taxes. Mr. Solecki is available to explain and support the Company's claimed income tax expense.

Page B-17 develops the factors for allocating common plant to electric operations. The allocation to electric, gas, and steam operations of the common plant in both DPS-1 and DPS-2 was made on the basis of the average of the percentage for each type of service of total plant investment, total revenue, and total customers at March 31, 1979.

Page B-18 shows the calculation of the effective income tax rate which will be explained by Mr. Solecki.

Page B-19 lists the long-term debt outstanding and develops the embedded cost of long-term debt which at March 31, 1980 is expected to be 8.31%.

Page B-20 lists the preferred stock outstanding and develops the embedded cost of preferred stock which at March 31, 1980 is expected to be 7.80%

Page B-21 develops the additional working capital associated with Salem Unit #1 nuclear fuel, which will be explained by Mr. Hill.

Q. Will you now turn to Section C, the next Section of your Exhibits DPS-1 and DPS-2, and explain what is covered there

A. This Section provides the detailed development of the major components that make up the measures of value shown on Page A-2.

Pages C-1 through C-4 contain a brief description of the method used to develop the trended original cost of the Company's property to provide measures of current value.

Pages C-5 through C-11 summarize by plant groupings the utility plant in service at each test year end, including the original cost and trended original cost as well as associated calculated depreciation reserves. Pages C-12 and 12a provide a description of annual and accrued depreciation and amortization calculations used in the determination of the measures of value. Mr. Waddington's testimony explains the basis of these calculations which are supported by the data on Pages C-13 through C-21.

Page C-22 develops the Company's claim for non-revenue producing construction work in progress. Page C-23 and 23a lists land held for future use. These schedules will be explained by Mr. Hill.

Page C-24 displays the Company's claim for electric operations material and supplies. The development of materials and supplies and the components included conform to those used and found acceptable in the Company's prior rate proceeding. This schedule will be further explained by Mr. Carroll and Mr. Hill.

Page C-25 details the levels and requirements for cash working capital at the historic and future test year ends. The Company's claim for cash working capital at March 31, 1980 totals $52.3 million, and is consistent with the methodology used in the Company's previous rate filings. Mr. Rimerman will testify on the details of this cash working capital claim.

Q. Will you explain Section D of Exhibits DPS-1 and DPS-2?

A. Section D contains the adjustments required to place the actual or budgeted operating revenues and expenses of the test year on a proper year-end ratemaking basis in conformance with prior Commission rulings. These detailed adjustments are summarized on Page A-3 of the Exhibits and then carried forward to Page A-1 to derive proforma operating income at

both present and proposed rates. The adjustments generally fall into three categories, i.e. adjustments to provide the full year effect of known changes in revenue or expense, to eliminate non-recurring items and other special adjustments.

Q. Please discuss the Section D schedules in sequence including any explanations you consider necessary.

A. The adjustment on Page D-1 eliminates the State taxes covered by the State Tax Adjustment Clause (STAC) and an amount of revenue equal to those taxes. There is no net effect on income available for return because equal dollars of revenue and taxes are removed. This adjustment is in accordance with the Commission's method reflected in its Order at RID 438.

Page D-2 of Exhibit DPS-1 reflects the full year effect of base rates for the present Tariff No. 25. Base rate revenue for the future test year ended March 31, 1980 already reflects the Tariff No. 25 level and therefore no adjustment to book revenue is required.

Page D-3 summarizes the estimated increase in annual revenues, expenses, income taxes and operating income to reflect annualization to the year-end level for (a) customers added during the year and (b) growth in usage of existing customers. A net increase of $6,765,000 in revenue is made in the March 31, 1980 test year as shown on Page D-3a.

Page D-4 shows the adjustment to eliminate Fuel Adjustment Clause and or Energy Clause revenue and related fuel expense. Mr. R. C. Williams will describe the adjustments on Pages D-2 through D-4 in greater detail.

Page D-5 shows the adjustment to wages and related employee benefits required to annualize increased wages and employee benefits effective August 1, 1979, and not yet fully reflected in either the budgeted 12 months ended March 31, 1980 or the actual 12 months ended March 31, 1979.

In the historic test year, the adjustment also reflects the wage and benefits increase granted on August 1, 1978. The total annual costs of these changes for combined operations are developed and the allocation to electric operations is shown on this page. The overtime percentage of 11.4% for the future test year and 12.1% for the historic test year applied to the increase in regular payroll costs is calculated by dividing overtime by the Company's regular payroll expense during the test year period.

Page D-6 adjusts the annual depreciation expense to a ratemaking basis reflecting the test year-end plant in service.

Page D-7 develops the reduction in income available for return due to the increase in taxes resulting from the computation of tax depreciation on the basis of year-end plant in service.

Page D-8 develops the increase in income available for return from normalization of tax deferrals on year-end plant and elimination of tax deferrals from 1970 tax legislation reflected on D-1.

Page D-9 shows the calculation of the adjustment to reflect Income Tax Allocation based on the proforma level of plant in service at the end of the test year. Mr. Solecki will discuss pages D-7 through D-9 in greater detail.

Page D-10 develops the full year effects for increases as filed with the Federal Energy Regulatory Commission. The future test year ended March 31, 1980 already reflects the full year effect of these increases.

Page D-11 shows the adjustment to eliminate the operation and maintenance expenses associated with Richmond Unit #12 and Barbadoes Units #3 and #4 included in the test year operating and maintenance figures. In 1979, the Company will retire these generating units. Mr. Carroll explains the derivation of the amount of the adjustment in greater detail.

Page D-12 shows the adjustment of book expenses to reflect the amortization of certain types of expenses provided for in prior rate proceedings. Amortizations include extraordinary storm damage allowed at RID 29, rate case expenses from prior cases RID 129 and RID 295 as allowed at RID 438, rate case expenses associated with RID 438 and amortization of Federal income tax deficiency charge as allowed at RID 438. Detail of rate case expenses is provided in response to Commission filing regulations (Question III-A-20).

Page D-13 shows the adjustment to eliminate the operation and maintenance expenses, excluding fuel, and the investment tax credit effects associated with Salem Unit #2. The Company has contracted to sell the output from this Unit to Jersey Central Power and Light Company. Since the Unit was budgeted to begin commercial operations on October 1, 1979, this adjustment eliminates the associated expenses from the Operating Statement for the period October 1, 1979 to March 31, 1980. All fuel expenses above the base cost of fuel are eliminated on page D-4 of the Exhibit. Mr. Carroll and Mr. Solecki will further discuss the derivation of the adjustment's amount.

All revenues, costs and income associated with the Salem #2 operation in connection with the sale of its output to Jersey Central Power and Light Company will be segregated in the books of the company. Public Service Electric and Gas Company of New Jersey will report all costs to us by units and we will include them on our books with separate designations for unit 1 and unit 2. This accounting will insure that none of the revenues or expenses of this operation will be included in operation for Pennsylvania rate making purposes and that none of the generation or fuel expense will be included in the calculation of the company's energy charge applicable to its Pennsylvania business. I am responsible for the development and implementation of this accounting procedure.

Page D-14 shows the adjustment to recognize the full year effect of the 46% Federal Income Tax Rate.

Page D-15 shows the adjustment to recognize changes in Federal Social Security tax laws. Mr. Solecki will further discuss pages D-14 and D-15.

Page D-16 shows the adjustment for the decommissioning expense for the three nuclear units - Peach Bottom Units No. 2 and 3 and Salem Unit No. 1.

Page D-17 shows the adjustment for the cost of disposing of spent fuel due to be discharged from Peach Bottom No. 2 and 3 and Salem No. 1 beginning in 1985. A detailed description of the costs shown on pages D-16 and D-17 is provided in Company Statements 12 and 12a.

Page D-18 shows the adjustment for normalization of income taxes associated with ADR Repair Allowance. Mr. Solecki is responsible for discussing this adjustment.

Q. Does this conclude your testimony?

A. Yes.