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<u>NUMBER</u>	<u>FOR IDENTIFICATION</u>	<u>IN EVIDENCE</u>
<u>City of Scranton</u>		
1 (In-Depth Inspection Report for Railroad Bridge Over Traffic Route 690, Borough of Moscow)	222	225

P R O C E E D I N G S

1
2 ADMINISTRATIVE LAW JUDGE RICHARD LOVENWIRTH: Good
3 morning. We will now commence a further hearing concerning
4 the matter of the Moscow Borough Council versus City of
5 Scranton, Lackawanna County and Pennsylvania Department of
6 Transportation. This matter has been docketed by the
7 Commission at C-861119.

8 A very brief history of these proceedings follows.

9 On December 9th, 1986 Moscow Borough Council filed a complaint
10 against City of Scranton, Lackawanna County and Pennsylvania
11 Department of Transportation, wherein it alleges that the
12 condition of the railroad bridge over State Highway Route 35005,
13 being Traffic Route 690. located in the Borough of Moscow,
14 Lackawanna County, the tracks of which are owned by the City
15 of Scranton and have trains operated over them by Steamtown
16 USA Foundation, is in a deteriorated state.

17 No answers were filed by the respondents. An evidentiary
18 hearing was conducted on May 14th, 1987. Thereafter, the
19 recommended decision of Administrative Law Judge Morris
20 Mindlin dated September 8th, 1987 was adopted by the
21 Commission on October 22nd, 1987, and that decision set forth
22 that the City of Scranton at its initial cost and expense
23 conduct a preliminary technical study of the subject bridge,
24 and within six months from the service date of the Commission's
25 order the said study shall be filed with the Commission, and

1 copies of same be forwarded to all parties.

2 Thereafter, a petition was filed by the City of Scranton
3 for an extension of time, which said petition for an extension
4 of time was granted.

5 The purpose of today's hearing is to hear from the
6 various parties concerning the preliminary plan that was filed
7 by the City of Scranton to determine whether it should be
8 adopted and, if not, whether it or a modified plan should be
9 prepared in detail, and at whose expense, and to further
10 ascertain interim maintenance responsibilities.

11 I have before me an appearance sheet which indicates
12 that the Commission's Law Bureau Staff is represented this
13 morning by Linda C. Smith, its attorney.

14 Good morning, Ms. Smith.

15 MS. SMITH: Good morning, Your Honor.

16 JUDGE LOVENWIRTH: The appearance sheet indicates that
17 PennDOT is represented this morning by its attorney, Christel
18 L. Ertel.

19 Good morning, Ms. Ertel.

20 MS. ERTEL: Good morning, Your Honor.

21 JUDGE LOVENWIRTH: The appearance sheet further indicates
22 that Moscow Borough is represented this morning by its
23 attorney, James L. Walker.

24 Good morning, Mr. Walker.

25 MR. WALKER: Good morning, Your Honor.

1 JUDGE LOVENWIRTH: And that Lackawanna County is
2 represented this morning by its attorney, Thomas P. Cummings.

3 Good morning, Mr. Cummings.

4 MR. CUMMINGS: Good morning, Your Honor.

5 JUDGE LOVENWIRTH: Is there anybody here from the City
6 of Scranton?

7 MR. WALKER: Your Honor, no one is here from the City
8 of Scranton at the present time, but I have been informed that
9 they have been represented by Attorney Carlene Gallo, who is
10 scheduled to be here this morning, Your Honor, as of our last
11 conversation.

12 JUDGE LOVENWIRTH: The record will reflect it is now
13 10:08, and we will recess until 10:15, after which time we
14 will just have to proceed with whoever is here. The record
15 will reflect, however, that the City of Scranton received
16 notice of the hearing and, indeed, on the 22nd of March, 1989
17 this Presiding Judge had a telephone conversation with Carlene
18 Gallo, attorney for the City of Scranton, at which time she
19 asked for a continuance, and I advised her on the telephone
20 that her request for a continuance would be denied. The
21 record will reflect that the reason for the request for
22 continuance was that she said she thought she had struck a
23 settlement in this case with Moscow Borough, and I advised
24 her that that's fine, she can present it at the hearing and
25 I would take it under consideration, but that a mere settlement

1 of this matter involving the safety of the public would not
2 close the record, especially since it was a settlement which,
3 according to her, was not one wherein PennDOT or the Commis-
4 sion's Trial Staff or Lackawanna County concurred.

5 So we will be at recess for another -- just one moment
6 before we recess.

7 We will at this time reopen the record. It wasn't
8 necessary to take a recess.

9 Ms. Gallo, please sign the appearance sheet.

10 (Counsel Gallo complies.)

11 JUDGE LOVENWIRTH: All right, all the parties, I believe,
12 are present through counsel. Accordingly, we are ready to
13 proceed unless there is something preliminarily.

14 Ms. Smith, do you have any preliminary matters?

15 MS. SMITH: Your Honor, it is my understanding that
16 Steamtown is now out of business. However, if they are not
17 out of business, I would ask that they be made a party to this
18 action also.

19 JUDGE LOVENWIRTH: I can't do it from the bench, Ms.
20 Smith. I think maybe that would have been an appropriate
21 topic for a written motion, to which they could respond. They
22 are not here to respond right now. I don't know whether they
23 are out of business or not; I only know what I read in the
24 newspapers, and, according to what I read in the newspapers,
25 which really doesn't matter -- I'm not trying to encumber the

1 record with hearsay stuff, but from what I read in the news-
2 papers, they are not out of business. In fact, they just
3 received a sizeable sum of money from Lackawanna County or
4 the City of Scranton -- I forget which -- which they turned
5 over to the National Park Service, so they are doing business
6 right now, I think.

7 That being as it may, if you think that that should be
8 done and if you further think that this Commission has
9 jurisdiction over Steamtown, then I think you ought to file
10 a motion and let them respond to it.

11 MS. SMITH: Thank you, Your Honor.

12 JUDGE LOVENWIRTH: Is there anything else preliminarily,
13 Ms. Smith?

14 MS. SMITH: No, Your Honor.

15 JUDGE LOVENWIRTH: Ms. Ertel?

16 MS. ERTEL: Nothing preliminarily, Your Honor.

17 JUDGE LOVENWIRTH: Mr. Walker?

18 MR. WALKER: Your Honor, I would just at this time
19 indicate for the record that it is my understanding that
20 Steamtown has been served notice of the continued proceedings
21 date today.

22 JUDGE LOVENWIRTH: Yes, but they haven't been served
23 with notice that they are a party to this matter. A complaint
24 was never filed against Steamtown.

25 MR. WALKER: That's correct, Your Honor, but they were

1 present at the last time the proceedings were scheduled on
2 a voluntary basis, and they came in through the City of
3 Scranton at that time, Your Honor. And I just would like the
4 record to reflect that they were served with notice of the
5 continued hearing date today.

6 JUDGE LOVENWIRTH: That's fine. Thank you.

7 MR. WALKER: Your Honor, additionally in reference to
8 what the Court has referred to, or what the Commission has
9 referred to previously, there were settlement negotiations
10 initiated by the City of Scranton, along with the National
11 Park Service, who is the equitable owner under an agreement
12 of sale of the subject track and bridge; and those negotiations
13 conducted by Attorney Gallo and by representatives of the
14 National Park Service and by myself on behalf of Moscow
15 Borough with one of the Moscow Borough Council members present,
16 it was my understanding that Ms. Gallo would present those
17 matters today to the Court and to the Commission.

18 JUDGE LOVENWIRTH: Very good.

19 All right, anything else preliminarily, Mr. Walker?

20 MR. WALKER: Nothing further preliminarily.

21 JUDGE LOVENWIRTH: Very good.

22 Mr. Cummings, do you have anything?

23 MR. CUMMINGS: Nothing, Your Honor, thank you.

24 JUDGE LOVENWIRTH: Ms. Gallo, do you have anything
25 preliminarily?

1 MS. GALLO: No, Your Honor.

2 JUDGE LOVENWIRTH: All right. That being the case, I
3 guess we ought to open the record at this time for purposes
4 of the reception of evidence.

5 Ms. Gallo, do you want to call a witness?

6 MS. GALLO: Your Honor, I was wondering if maybe we
7 could discuss with the PUC the preliminary negotiations that
8 have been held between Moscow Borough and the City of Scranton.

9 JUDGE LOVENWIRTH: You can't discuss it with me, Ms.
10 Gallo. What you can do is you can present to me a settlement
11 agreement for approval or disapproval. That you can do.
12 When you say "present to the PUC" who do you mean? Did you
13 mean present to me or did you mean present to a member of their
14 Law Bureau Staff?

15 MS. GALLO: Your Honor, whichever you would deem
16 appropriate. I would submit it to you. However, we don't
17 have a settlement negotiation agreement drawn up yet at this
18 point.

19 JUDGE LOVENWIRTH: Not only do you not have an agreement
20 drawn up yet, but you don't have an agreement. According to
21 Mr. Walker, Moscow Borough hadn't approved of any agreement.
22 There have been some discussions with him and a Council
23 member. That doesn't mean anything. Once Council member
24 can't bind the Borough. So you are a long way off from an
25 agreement, aren't you?

1 MS. GALLO: Yes.

2 JUDGE LOVENWIRTH: I mean at least two meetings off,
3 one meeting of the Moscow Borough and one meeting of the
4 City Council for the City of Scranton; isn't that correct?

5 MS. GALLO: Well, I'm not sure that the City of Scranton
6 City Council would have to approve this type of agreement.

7 JUDGE LOVENWIRTH: That might very well be.

8 MR. WALKER: Your Honor, we have for the benefit of the
9 record -- if I may interrupt, we have an agreement in principle
10 reached with the National Park Service and the City of Scranton.
11 It was my understanding that that would be presented by Ms.
12 Gallo today. Therefore, we didn't prepare anything formally
13 in writing to present to the Public Utility Commission.

14 JUDGE LOVENWIRTH: All right. In addition to doing that,
15 Ms. Gallo, do you have somebody here to testify as to these
16 plans, or what else have you?

17 MS. GALLO: Well, Your Honor, we have the engineer here
18 who did the study for CECO.

19 JUDGE LOVENWIRTH: Why don't you do this; why don't you
20 tell us what the agreement is that is about to be struck, in
21 your opinion? And why don't you also put on your witnesses?
22 In case we reject your agreement, we can listen to the testimony
23 of your engineer. Is that satisfactory?

24 MS. GALLO: Yes, it is.

25 Your Honor, the way it stands right now is as Attorney

1 Walker presented. The National Park Service is under an
2 agreement of sale with the City of Scranton. We are going
3 to turn over the track and the bridges to the National Park
4 Service. However, that has not happened yet. The title search
5 has been done. There are a number of encumbrances that the
6 National Park Service wishes us to clear up before we can turn
7 over the tracks.

8 We had meetings with Attorney Walker and the President
9 of the Council with John Latschar of the National Park
10 Service.

11 JUDGE LOVENWIRTH: With who?

12 MS. GALLO: John Latschar, L-a-t-s-c-h-a-r.

13 He indicated to Moscow Borough that the National Park
14 Service would not run trains over this excursion until the
15 bridges were repaired, and he indicated that studies would
16 be done by the Federal Highway Administration, according to
17 national standards, to determine what repairs would have to
18 be made.

19 The City of Scranton has no intention of running any
20 trains over the tracks. We don't have any trains, and we
21 don't have any intentions of allowing any trains to run over
22 the tracks at this time.

23 That was going to be the extent of our agreement.

24 JUDGE LOVENWIRTH: Supposing the Federal Highway
25 Department says nothing has to be done. Would that satisfy

1 the Borough of Moscow, Mr. Walker?

2 MR. WALKER: Your Honor, it's our understanding that
3 the Federal Highway Administration would do testing in
4 compliance with the recommendations and suggestions of Mr.
5 Osborne, the professional engineer who has prepared the CECO
6 Associates, Incorporated report, which has been presented to
7 the Commission, and in compliance with AASHTO standards, and
8 that at the conclusion thereof if the AASHTO standards
9 and the recommendations of Mr. Osborne and the Federal Highway
10 Administration testing procedures indicated that no further
11 work need be done on the bridge, then we would live with that
12 recommendation. But it is our position that, based upon the
13 report of Mr. Osborne, and based upon the prior testimony of
14 our engineer, Mr. Surace, that there will be further work which
15 will be required to be done.

16 The independent testing was required by this Commission.
17 We have that back in our possession, and we agree with most
18 of the conclusions and recommendations set forth by Mr.
19 Osborne, Your Honor.

20 JUDGE LOVENWIRTH: Mr. Osborne works for who, the City
21 of Scranton?

22 MR. WALKER: He is an independent engineer hired by
23 the City of Scranton.

24 JUDGE LOVENWIRTH: That's what I meant.

25 MR. WALKER: Yes.

1 JUDGE LOVENWIRTH: Supposing the Federal Highway
2 Department doesn't agree with that. Does your agreement set
3 forth who is going to assume maintenance for the structure
4 in the meantime, Ms. Gallo?

5 MS. GALLO: Well, Your Honor, there was a preliminary
6 agreement drafted and sent to the National Park Service about
7 maintenance. However, that hasn't been signed by the Park
8 Service; it is still at their solicitor's office. But under
9 that agreement, they would take responsibility for the
10 maintenance.

11 JUDGE LOVENWIRTH: But supposing they don't; supposing
12 they don't take responsibility for maintenance, or supposing
13 they assume responsibility but they don't live up to it.
14 Does this Commission have jurisdiction over the National Park
15 Service, Ms. Gallo? Have you researched that?

16 MS. GALLO: No, I haven't, Your Honor.

17 MR. WALKER: It is my understanding that the Commission
18 would not have jurisdiction over the National Park Service,
19 Your Honor.

20 JUDGE LOVENWIRTH: I don't know whether we do or not,
21 but there is a question in my mind as to whether we do. And
22 what happens to the safety of the public?

23 MR. WALKER: Your Honor, may I digress for a moment and
24 respond to your question regarding the Federal Highway
25 Administration?

1 JUDGE LOVENWIRTH: You may.

2 MR. WALKER: Your Honor, we would request as part of
3 any agreement that the proceedings before this Public Utility
4 Commission not be dismissed at this time, of course, and we
5 would request that any findings of the Federal Highway
6 Administration would be reviewed by our professional engineer
7 and evaluated by our professional engineer, and I don't think
8 that that would be too burdensome in terms of time. As long
9 as there is an agreement that the City of Scranton and/or the
10 National Park Service will not run any trains over this trackage,
11 then I think the immediate protection of the public is served.
12 There has been some cosmetic work done to the face of the bridge
13 and there is no longer any chipping or concrete falling off
14 the bridge. That was one of our primary concerns, and that's
15 been taken care of by Steamtown on a voluntary basis subse-
16 quent to the last proceedings.

17 JUDGE LOVENWIRTH: If there are no trains running over
18 the bridge, why don't we just abolish the crossing?

19 MR. WALKER: I'm sorry, Your Honor.

20 JUDGE LOVENWIRTH: Why don't we just abolish the crossing
21 then if there are not going to be any trains running over the
22 bridge?

23 MR. WALKER: Because in the future the National Park
24 Service does intend to run excursions over this bridge. The
25 National Park Service, Your Honor, would also agree to any

1 maintenance which was required to be done in the meantime.
2 It's my understanding from my research that the National Park
3 Service would not fall under the jurisdiction of the Public
4 Utility Commission. Therefore, the agreement would also
5 include a clause whereby Moscow Borough, as the complainant
6 in this matter, would be able to come back before the PUC if
7 in fact the agreement were breached in any respect or if in
8 fact it was imminent that trains would run over that track.

9 JUDGE LOVENWIRTH: By that time the City of Scranton
10 will say: we want to be dismissed as a party; we have no
11 interest in it. We don't own the track; it's not within the
12 confines of the City of Scranton. The motorists who live in
13 the City of Scranton aren't benefited by this railroad crossing,
14 or, if they are, only incidentally.

15 MR. WALKER: Your Honor, you --

16 JUDGE LOVENWIRTH: And they have a good argument. I
17 like the idea better that we assign to I don't know who, to
18 PennDOT or to the City of Scranton or the Borough of Moscow
19 or whoever the maintenance responsibility, if nothing else.
20 And then if the National Park Service is going to take it over,
21 then they will inherit whatever has been assigned to the City
22 of Scranton.

23 MS. GALLO: Your Honor, the National Park Service has
24 told us that that's an encumbrance they can't accept.

25 JUDGE LOVENWIRTH: Well, why can't they accept it if

1 they are interested in the safety of the public?

2 MS. GALLO: Their solicitors told them that they do not
3 want to be submitted to the jurisdiction of the PUC.

4 MR. WALKER: On a volunteer basis, Your Honor. The
5 agreement which I had referred to would only be until such
6 time as the transfer was made.

7 JUDGE LOVENWIRTH: What are your thoughts concerning
8 these topics, Ms. Smith?

9 MS. SMITH: your Honor, I think that the structure is
10 not in good enough condition that this Commission can take
11 a chance on allowing it to remain in place without being
12 assured that there is a responsible party who would be
13 answerable to the Commission in the future. Unless a brand
14 new bridge is built and there are assurances from the
15 various parties, I don't see how we can work with what has
16 been presented so far. There hasn't even been a load testing
17 analysis or load bearing capacity test done on the structure,
18 so we don't even really know at this point in time whether
19 it is possible to repair the bridge to carry the excursion
20 trains.

21 JUDGE LOVENWIRTH: What are your thoughts concerning
22 this topic or these topics, Ms. Ertel?

23 MS. ERTEL: Your Honor, as to specifics regarding the
24 recommendations of the Federal Highway Administration, the
25 Department could not speak on behalf of those standards, and

1 can't elaborate any further as to that aspect. But this is
2 a railway bridge which has been in the past under the juris-
3 diction of the City of Scranton, and, of course, the Department
4 is concerned about the public safety issues in that a State
5 Highway runs underneath this railroad bridge. I would say
6 that the Department would certainly be concerned about the
7 maintenance responsibility of the railroad overpass at this
8 location.

9 MR. WALKER: Your Honor, if I may interject, load
10 testing and load bearing analysis would be the type of testing
11 which would be done by the National Park Service pursuant to
12 the proposed agreement which they had set forth with the City
13 of Scranton.

14 JUDGE LOVENWIRTH: What are your thoughts concerning
15 this matter, Mr. Cummings?

16 MR. CUMMINGS: Your Honor, the County of Lackawanna
17 would endorse and join in the conclusions, opinions and
18 agreements of the Borough of Moscow.

19 JUDGE LOVENWIRTH: I don't know anything about the
20 structural capacity of this bridge. I don't know what that
21 report from the City of Scranton says. I don't know whether
22 we're dealing with a dangerous structure or whether we're not
23 dealing with a dangerous structure. I haven't heard anything
24 about it. Therefore, I'm not going to suspend the reception
25 of evidence. I want to hear what the author of the report

1 has to say and what is set forth in the report.

2 The only thing I do know is that there is a railroad
3 crossing in the Borough of Moscow which has been proven to
4 be in need of some rehabilitation, that need having been
5 manifested by the Commission's order of October 22nd, 1987.
6 That's all I know right now, and I'm not going to jeopardize
7 the safety of the public by just dismissing this action.

8 I want to hear what the engineer's report is, and I
9 also want to hear testimony as to interim maintenance
10 responsibilities. That is my feeling on the topic. I think
11 that when you have struck an agreement that you can reduce
12 to writing, and I will be able to scrutinize and compare it
13 with the record we have on the condition of the bridge and
14 on the need for bridge rehabilitation, then I'll more
15 intelligently be able to address that agreement. I'm not
16 going to address it now. I don't even know if it's going to
17 be acceptable to the Borough of Moscow.

18 MR. WALKER: That's correct, Your Honor.

19 JUDGE LOVENWIRTH: I don't know. You don't know either.
20 Isn't that correct, Mr. Walker?

21 MR. WALKER: That's correct, Your Honor; and, additionally,
22 I would just set forth to the Court that we never indicated,
23 and we would want the record to reflect that we never
24 requested that this matter be dismissed.

25 JUDGE LOVENWIRTH: That's right, but what you have

1 requested is that we just close the file for the time being
2 and continue this matter indefinitely, and by the time you
3 may be interested in reopening the matter or the Borough of
4 Moscow may be interested in reopening the matter, there may
5 not be any operating railroad over there over which we have
6 any jurisdiction.

7 MR. WALKER: We just wanted the record to reflect that,
8 Your Honor.

9 JUDGE LOVENWIRTH: All right, thank you.

10 Do you want to call a witness then, Ms. Gallo? Do you
11 want to call your engineer please, Ms. Gallo?

12 MS. GALLO: Yes, I would call to the stand Mr. David
13 Osborne.

14 JUDGE LOVENWIRTH: Good morning, Mr. Osborne.

15 MR. OSBORNE: Good morning, Your Honor.

16 JUDGE LOVENWIRTH: It's nice to have you with us, sir.
17 Please place your right hand on the Bible.

18 Whereupon,

19 DAVID J. OSBORNE
20 having been duly sworn, testified as follows:

21 JUDGE LOVENWIRTH: You may be seated.

22 Ms. Gallo?

23 DIRECT EXAMINATION

24 BY MS. GALLO:

25 Q Would you state your name again for the record?

1 A David J. Osborne.

2 Q And would you please state your business address?

3 A CECO Associates, Post Office Box 995, Scranton, PA.

4 JUDGE LOVENWIRTH: Is that O-s-b-o-r-n-e?

5 THE WITNESS: Yes.

6 BY MS. GALLO:

7 Q Mr. Osborne, what is your occupation?

8 A Professional engineer.

9 Q Would you state your educational background for us
10 please?

11 A I have a Bachelor's of Science Degree from Penn
12 State University.

13 Q And, Mr. Osborne, how did you become involved in
14 this matter?

15 A The City of Scranton contracted with our firm, CECO
16 Associates, to do an inspection of the Moscow bridge.

17 JUDGE LOVENWIRTH: How do you spell CECO Associates?

18 THE WITNESS: C-E-C-O.

19 BY MS. GALLO:

20 Q Now, Mr. Osborne, are you a professional engineer?

21 A Yes, registered in the State of Pennsylvania.

22 Q And for how long have you been a professional
23 engineer?

24 A About seven years.

25 MS. GALLO: At this time I would ask that Mr. Osborne

1 be classified as an expert witness?

2 JUDGE LOVENWIRTH: Does anybody object to this witness
3 being qualified as an expert, thereby rendering and capable of
4 offering opinions on matters within the sphere of his expertise?

5 MS. SMITH: No objection.

6 MS. ERTEL: No objection.

7 JUDGE LOVENWIRTH: All right, there being no objection,
8 then this witness is so qualified.

9 BY MS. GALLO:

10 Q Mr. Osborne, have you had an opportunity to examine
11 the railroad bridge over Traffic Route 690 in the Borough of
12 Moscow?

13 A Yes.

14 MS. GALLO: May I approach the witness?

15 JUDGE LOVENWIRTH: Yes, you may.

16 BY MS. GALLO:

17 Q Mr. Osborne, I'm showing you a document. Can you
18 explain that for the Court?

19 A This is the in-depth inspection report that we
20 prepared for the Moscow bridge over Traffic Route 690 for the
21 City of Scranton.

22 JUDGE LOVENWIRTH: Are you going to offer that as an
23 exhibit?

24 MS. GALLO: Yes, I am, Your Honor.

25 JUDGE LOVENWIRTH: You need two for the court reporter

1 and one for me. Do you have enough copies for that?

2 MS. GALLO: I believe I do.

3 JUDGE LOVENWIRTH: We will go off the record for a
4 moment.

5 (Discussion off the record.)

6 JUDGE LOVENWIRTH: Back on the record.

7 Do you want this marked as an exhibit, Ms. Gallo?

8 MS. GALLO: Yes, I do, Your Honor.

9 JUDGE LOVENWIRTH: Would you please mark it Scranton
10 No. 1, Ms. Glass?

11 (Whereupon, the document was
12 marked as City of Scranton Exhibit
13 No. 1 for identification.)

14 JUDGE LOVENWIRTH: You may proceed, Ms. Gallo.

15 BY MS. GALLO:

16 Q Mr. Osborne, would you please explain to the
17 Commission how you performed this study?

18 A The inspection was done according to, as we
19 indicated in our inspection procedures, the AASHTO Maintenance
20 Manual for inspection of bridges.

21 Q When you were asked to do the study were you provided
22 with the PUC order that had been entered?

23 A Yes.

24 Q And the questions and requests for findings?

25 A Yes.

Q And did you do your study with that in mind?

1 A Yes.

2 Q Can you explain to the Commission exactly what
3 procedures you took?

4 A The inspection was a visual field inspection of the
5 entire bridge. The entire substructure units were sounded,
6 and recorded as to what areas were spalled and deteriorated
7 or not deteriorated. There was also additional concrete
8 coring done of the deck and the substructure units to determine
9 the strength of the concrete within the structure, itself.

10 Q What were your findings after doing these tests?

11 A Our findings as far as the structure was concerned
12 were that it was in a somewhat deteriorated condition. The
13 substructure units had been recently repaired. Some of the
14 repairs were deteriorated again. There was some new
15 deterioration areas found within the piers and the abutments.
16 It was not in any immediate danger of collapse at that time.
17 The concrete cores that we had taken were somewhat inconclusive
18 in that two of the cores were not able to be tested for
19 concrete strength because they crumbled upon their recovery.
20 We could not get enough recovery from the cores to test them.
21 However, two of the cores were able to be tested, and the
22 concrete strength was noted in the report; I think it was
23 around 4,100 PSI. Those cores also indicated that there was
24 rounded aggregate rather than angular or coarse aggregate,
25 which would normally be in concrete. At that point in time

1 even with the existing plans that we had, we felt that we
2 could not do any type of structural analysis of the structure
3 because we had inconclusive results from the concrete test.
4 At that point in time was when we recommended that if the
5 structure were to be used again for train traffic, that
6 additional load bearing tests be performed to determine its
7 load bearing capacity.

8 Also because of its nature, being a concrete structure,
9 it is somewhat difficult to do a structural analysis. If it
10 were a steel structure we could determine the age of the steel
11 and the composition of the steel perhaps to perform a
12 structural analysis.

13 Typically, a concrete structure is not analyzed, but
14 it is inspected on a regular basis for distress, and if any
15 distress is found then, perhaps something like this, then a
16 load bearing or load analysis test would be performed on it
17 so that we could determine an exact load rating capacity for
18 it.

19 Q Mr. Osborne, in your opinion, your professional
20 opinion, if there are no trains running over this bridge,
21 does this bridge present a danger of collapse?

22 A No. With no trains traveling over it, under its
23 own dead load the structure is in no danger of collapsing at
24 this point in time.

25 MS. GALLO: I have no further questions for this witness.

1 JUDGE LOVENWIRTH: The record will indicate that the
2 report that the witness alluded to has been marked as Scranton
3 Exhibit No. 1. Do you want that exhibit moved into the record,
4 Ms. Gallo?

5 MS. GALLO: Yes, I so move, Your Honor.

6 JUDGE LOVENWIRTH: Subject to cross-examination, is there
7 any objection?

8 MS. SMITH: No, Your Honor.

9 MS. ERTEL: The Department has no objection.

10 MR. WALKER: No, Your Honor.

11 JUDGE LOVENWIRTH: There being no objection, Exhibit
12 Scranton No. 1 is made a part of the record.

13 (Whereupon, the document marked as
14 City of Scranton Exhibit No. 1
was received in evidence.)

15 JUDGE LOVENWIRTH: Ms. Smith, do you want to cross-
16 examine the witness?

17 MS. SMITH: Your Honor, if I could, I would like to defer
18 until after the other attorneys have had the opportunity to
19 cross-examine.

20 JUDGE LOVENWIRTH: Is that what you want to do?

21 MS. SMITH: Yes.

22 JUDGE LOVENWIRTH: All right, Ms. Ertel, do you want
23 to cross-examine?

24 MS. ERTEL: Could I just have one moment, Your Honor,
25 please?

1 JUDGE LOVENWIRTH: Yes.

2 MS. ERTEL: Thank you.

3 (Pause.)

4 MS. ERTEL: I do have one question of Attorney Gallo.

5 Is there going to be another witness provided on behalf
6 of the City?

7 MS. GALLO: Yes.

8 MS. ERTEL: Then I have no questions for this witness.
9 Thank you.

10 JUDGE LOVENWIRTH: Mr. Walker?

11 MR. WALKER: Yes, Your Honor. I have several questions.

12 CROSS-EXAMINATION

13 BY MR. WALKER:

14 Q Mr. Osborne, you have indicated in your report and
15 in testimony that the cores were somewhat inconclusive and
16 that they crumbled upon recovery. Is that a fair characteriza-
17 tion of your testimony?

18 A Yes.

19 Q Can you tell us what you mean by "crumbled upon
20 recovery"?

21 A They crumbled to the point where we could not get
22 enough core length, according to ASTM standards, to test it
23 properly so that we could get a true compressor strength test
24 done for us.

25 Q And of what significance is the fact that these

1 concrete cores crumbled upon recovery; of what significance
2 to you?

3 A It was really just insignificant. When I say
4 "crumbled" they crumbled from the fact that they separated
5 from the aggregate, and it's just an indication of the type
6 of concrete that was used in the structure, itself.

7 Q Does it have significance in terms of your opinion
8 as to the structural integrity of the bridge?

9 A No. Because of our other visual inspection of the
10 structure, the substructure units and of the precast deck slabs
11 that were used for the superstructure, and there was no
12 visible evidence of any distress in those members.

13 Q And you have indicated in your report that there
14 were two samples which were tested?

15 A Yes.

16 Q And I think your report indicates on page 3 at the
17 bottom in the last paragraph under the caption "Structural
18 Analysis Summary" that the average compressive strength was
19 4,182 PSI?

20 A Yes.

21 Q And you indicated in the next sentence, did you not,
22 that considering the age of the structure that the compressive
23 strength of the concrete was expected to be much higher than
24 that?

25 A Based on the age of the structure and previous

1 inspections that we have done and concrete tests that we have
2 done on older structures, structures of this age, concrete
3 has a tendency to continually strengthen. We have had
4 strengths of concrete much higher than that. The 4,100 PSI
5 is not of any concern. It's a sound concrete at 4,100 PSI.

6 Q Mr. Osborne, what would you expect the PSI to be;
7 what were your expectations upon running the test?

8 A I thought they would be in the neighborhood of 6,000
9 PSI.

10 Q And is the fact that they were 4,182 PSI, does that
11 cause some concern to you, as an engineer inspecting the bridge?

12 A No.

13 Q You indicated upon the questioning of Ms. Gallo that
14 if trains did in fact run across the bridge, that you would
15 recommend a further structural analysis be done?

16 A Yes.

17 Q What type of structural analysis and under what
18 standards?

19 A The structural analysis that we recommend would be
20 a load testing of the structure, where the structure was
21 physically set up with strain gauges and what-not and so forth
22 by an independent testing company that does specific load
23 testing for structures of this nature, and at that point in
24 time the structure would be loaded and we could determine then
25 what the load carrying capacity of the bridge was.

1 Q All of that type of structural analysis and testing,
2 is it all geared to the determination of the load carrying
3 capacity?

4 A Correct.

5 Q Could you tell us what you mean by "load carrying
6 capacity" of a structure?

7 A It would determine the actual -- in train loading
8 and vehicle loading it would be an H or an H-S loading, and
9 cars and tractor-trailer type loadings. In train loadings
10 there are various different train loadings, Cooper loadings,
11 E-10 and AAR loadings; they are all referenced in the ARA
12 Manual, which is the American Association of Railroad
13 Engineers. There would also be various ways in addition to
14 just its basic load carrying capacities, in that the track could
15 be posted for speed restrictions, at which time the impact
16 load is reduced substantially, where other loads could be
17 carried across the structure. So there -- I couldn't
18 specifically say what type of trains would go across it. It
19 could be certain weights of trains with speed restrictions
20 on the tracks too, that could go across it.

21 Q Would the structural analysis which would be geared
22 toward load carrying capacity, would that be able to -- that
23 type of testing, would that be able to indicate to you what
24 types of trains and what loads and speeds of trains would not
25 be allowed to cross that bridge?

1 A Yes.

2 Q And would that type of structural analysis and
3 testing indicate to you the types of different loadings, the
4 ARA standard loadings that would be allowed to cross that
5 bridge?

6 A Yes.

7 Q Now, the report had also indicated that if rail
8 traffic were to be anticipated that it would be recommended
9 that additional testing would be done. Is there any other
10 type of testing that you meant or that you were referring to
11 when you prepared your conclusions and recommendations?

12 A No.

13 Q So is it safe to assume that it would be only the
14 load bearing, load analysis, load carrying capacity type
15 testing?

16 A Yes.

17 Q And your conclusions and recommendations indicate
18 that there is no immediate danger to the traveling public
19 since no rail traffic is currently scheduled to use the bridge,
20 and that's on page 4 of your report.

21 A Uh-huh.

22 Q And is that your opinion, that there is no
23 immediate danger to the traveling public?

24 A Right.

25 Q You indicated, Mr. Osborne, that when you had

1 inspected the bridge that you found a somewhat deteriorated
2 condition, and you found evidence of some maintenance of the
3 piers and abutments, but that there was more deterioration
4 occurring on the same piers and abutments -- reoccurring; is
5 that correct?

6 A Right.

7 Q Given the deterioration of the piers and abutments,
8 and even the deterioration on those piers and abutments which
9 had been repaired previously, is it still your opinion that
10 there is no danger to the immediate public?

11 A There is no immediate danger to the public with the
12 structure, itself, collapsing. There is a possibility, as
13 I note, that over the freeze/thaw cycles that there could
14 possibly be some additional spalling, some pop-outs, some
15 small concrete from the substructure that would, in fact,
16 fall onto traffic on Route 690.

17 Q And that would be the traffic traveling underneath
18 the bridge?

19 A Underneath the structure, yes.

20 Q And that, of course, would pose some of the danger
21 to the traveling public?

22 A Right.

23 Q But when you indicated that there is no posing of
24 an immediate danger, that would be because rail traffic
25 across the bridge would not cause the bridge to collapse?

1 A Correct. In my opinion, the structure with no
2 traffic across it won't collapse under its own dead load. With
3 no rail traffic across the structure there would be no impact
4 loading on the structure causing the additional possibilities
5 of some further deteriorated concrete falling off or popping
6 off.

7 Q And, in fact, Mr. Osborne, you indicated that the
8 entire substructure is severely deteriorated and in need of
9 extensive repairs and maintenance to maintain the overall
10 structural integrity?

11 A Correct.

12 Q What do you mean that that type of maintenance and
13 repair is necessary to maintain it's overall structural
14 integrity; could you explain what you mean by that?

15 A The existing abutments and pier of the structure --
16 the existing abutments are unreinforced gravity type abutments.
17 The additional deterioration and the additional loss of the
18 concrete is just that much less gravity type abutment that
19 remains in place. Likewise, with the pier, the pier stems
20 are unreinforced, the pier cap is reinforced, and the pier
21 footing is reinforced. We are losing cross-section; the
22 structure is losing cross-sectional area by this deterioration
23 and by this spalling. To maintain its structural integrity,
24 we would need to put the structure back in its original
25 condition.

1 Q Would it be fair to say that the longer that these
2 types of conditions are allowed to last, the greater the
3 potential for structural damage to the bridge; would that be
4 fair to say?

5 A That's correct.

6 Q And do you have an opinion, based upon your
7 investigation and your inspection and your analysis and testing
8 as to the cause of the deterioration of the piers and abutments?

9 JUDGE LOVENWIRTH: Cost?

10 MR. WALKER: Cause, Your Honor. I'm sorry.

11 JUDGE LOVENWIRTH: The cause.

12 THE WITNESS: In our opinion the cause of the deteriora-
13 tion of the substructure units is from the salt conditions
14 that are used on the traffic route, the salt splashing onto
15 the abutments, and its effect on the concrete, coupled with
16 the fact that the cores that were taken provided us with the
17 type of aggregate which is rounded and not prone to hold
18 concrete in place better.

19 BY MR. WALKER:

20 Q And the salt which you had referred to, where would
21 that have its origin? Did your investigation reveal that?

22 A The salt basically came from the Traffic Route 690.

23 MR. WALKER: May I have one moment, Your Honor, to confer
24 with our engineer?

25 JUDGE LOVENWIRTH: Yes.

1 (Pause.)

2 BY MR. WALKER:

3 Q Were you able to determine, Mr. Osborne, the
4 percentage or amount of chlorides contained in the cores that
5 you had taken for recovery purposes for testing?

6 A I would have to check the testing results, but I'm
7 not positive if we did a chloride ion content test on the
8 cores.

9 Q What would that indicate to you, that type of testing,
10 chloride type testing that you referred to; of what signifi-
11 cance would it have to you, Mr. Osborne?

12 A It would indicate the amount of salt content, the
13 depth of deterioration to the substructure units, the
14 penetration and depth of penetration of the salt content into
15 the substructure units. It could be done from those concrete
16 cores.

17 Q You had indicated, Mr. Osborne, in your report on
18 page 4 that load testing would be the most accurate determina-
19 tion of the structure's capacity?

20 A Correct.

21 Q Would there be other types of testing which would
22 give us an idea and give us a measure as to the structural
23 capacity and integrity of the bridge?

24 A Not to my knowledge, no.

25 Q So the load testing would be not only the most

1 accurate, but basically the only good reliable -- from an
2 engineering standpoint, good reliable type of testing which
3 could be done?

4 A To determine the numerical number or a numerical
5 load rating capacity of the structure, yes. If the structure
6 were to be inspected on a regular basis just to inspect for
7 signs of visual structural distress, based on the traffic that
8 was traveling across the bridge, that would be the only
9 other method used.

10 Q And that type of testing would have to be done
11 prior to the resumption of rail traffic over the bridge?

12 A Correct, and that's not really -- it's not really
13 a test. It's an assumption that would be made that the
14 structure was capable of carrying traffic and then traffic
15 would be resumed, and then the structure would be inspected
16 on a regular basis to in fact determine if any distress is
17 noticeable, or monitored on a regular basis.

18 Q So that, as I understand it, the assumption would
19 be made as a result of the testing and analysis?

20 A No. If the testing and analysis were performed,
21 we would then at that point in time have an accurate load
22 carrying capacity that the structure could either be posted
23 or signed for.

24 Q But you would recommend that that load testing
25 analysis should be performed prior to permitting resumption

1 of rail traffic?

2 A Correct.

3 JUDGE LOVENWIRTH: You said "Correct"?

4 MR. WALKER: Excuse me, Your Honor.

5 JUDGE LOVENWIRTH: I wanted to make sure I heard the
6 witness. He answered "Correct."

7 THE WITNESS: Yes.

8 BY MR. WALKER:

9 Q You had also recommended, Mr. Osborne, that a
10 substructure rehabilitation plan be developed and implemented
11 to preserve the remaining portions of the substructure if the
12 structure is to remain. Can you indicate to this Commission
13 what you mean by that finding?

14 A What we were recommending was that the existing sub-
15 structural units, as we have inspected them and sounded them
16 and we actually have physical areas that have to be repaired,
17 that a repair plan be developed for those substructure units
18 and put out for bid or whatever, and that the units be
19 repaired either with a pressure mortar surface repair for some
20 of the areas that are not deteriorated that extensively, and
21 that in other areas maybe a Class AA cement concrete repair
22 with some reinforcing in it.

23 Q But that type of plan, in your opinion, is necessary
24 at this time?

25 A Yes.

1 Q And, finally, you had indicated in your conclusions
2 that the results of the load testing analysis, which should
3 be performed in the future, would determine the economic
4 viability of rehabilitation versus replacement of the structure.

5 A Right.

6 Q And that's, of course, one of your findings and
7 conclusions.

8 A Correct. What I meant by that statement was that
9 if the load testing were performed and it was found that the
10 superstructure was not capable of carrying the train traffic
11 that is proposed for the structure, then to do the repair work
12 to the substructure would be uneconomical at this point in
13 time. If the structure is going to be used, then completely
14 replace the substructure and superstructure.

15 Q And do you have an opinion or a conclusion as to
16 the estimate or a cost estimate for the load testing analysis
17 which would be needed in this case to ensure, from an
18 engineering standpoint, the safety of the public?

19 A Yes, I would say that the load testing analysis would
20 probably run somewhere between -- in the neighborhood of
21 \$20,000 to \$25,000.

22 JUDGE LOVENWIRTH: Who told you not to do it in
23 conjunction with your August, 1988 report?

24 THE WITNESS: Who told us not to do it?

25 JUDGE LOVENWIRTH: Yes, who told you not to spend this

1 money for a structural analysis and load testing?

2 THE WITNESS: The load testing was never part of our
3 original contract with the City.

4 JUDGE LOVENWIRTH: So the City told you not to do it;
5 is that correct?

6 THE WITNESS: Correct.

7 JUDGE LOVENWIRTH: The reason I asked is because the
8 Commission's order, which is dated October 22nd, 1987,
9 specifically states in paragraph 2(f) that, "The study and
10 report shall include the appropriate safety factors and
11 limits for the intended use of the said bridge, including the
12 type and volume of train traffic and loading."

13 And in paragraph 2(b) it says, "The study and report
14 shall include the existing and continuing structural integrity
15 of the focal bridge."

16 You didn't do that, did you?

17 THE WITNESS: No.

18 JUDGE LOVENWIRTH: And that's because the contract that
19 you entered into with the City of Scranton didn't require you
20 to do that; isn't that correct?

21 THE WITNESS: Well, that was part of the contract. The
22 order was attached to it.

23 JUDGE LOVENWIRTH: And you said you were going to do
24 the things that were set forth in the order?

25 THE WITNESS: Yes.

1 JUDGE LOVENWIRTH: But you didn't.

2 THE WITNESS: We did not perform the load testing
3 analysis, no.

4 JUDGE LOVENWIRTH: And why not?

5 THE WITNESS: Because of the additional cost required
6 for the load testing analysis.

7 JUDGE LOVENWIRTH: Who told you not to incur that cost,
8 if anyone?

9 THE WITNESS: I don't think anyone did.

10 MR. WALKER: May I continue, Your Honor?

11 JUDGE LOVENWIRTH: Yes.

12 BY MR. WALKER:

13 Q Did any representatives of the City of Scranton
14 Engineering Department review with you the specific type of
15 testing which they wanted done pursuant to this PUC order
16 which was entered?

17 A No, no specific type.

18 Q No specific type testing?

19 A No.

20 Q Now, Mr. Osborne, you indicated that there are
21 various independent companies who perform these types of work?

22 A Yes.

23 Q And that type of work we were referring to was the
24 load carrying capacity analysis type of work?

25 A Correct.

1 Q Does your company do that?

2 A No.

3 Q Do you have referral companies which you use who
4 do that kind of work?

5 A We have one company that we have used in the past.

6 Q Are they a local company?

7 A No.

8 Q Where are they from?

9 A From Illinois.

10 Q What's the name of that firm?

11 A I have a name in the file. The Construction
12 Technology Laboratory I believe is the name of the company.

13 Q Do you know, Mr. Osborne, whether or not the
14 Federal Highway Administration does this type of testing and
15 analysis?

16 A I don't think they do.

17 Q Do they use independent companies also?

18 A Yes.

19 Q Similar to CECO?

20 A Yes.

21 MR. WALKER: I have nothing further, Your Honor.

22 JUDGE LOVENWIRTH: Off the record.

23 (Discussion off the record.)

24 JUDGE LOVENWIRTH: We can be back on the record.

25 I have a note here that the building is being inspected

1 because of a bomb threat, so we will take a 15 minute recess.

2 (Recess.)

3 JUDGE LOVENWIRTH: We are back on the record.

4 Whenever you are ready we can continue, Mr. Walker.

5 MR. WALKER: We have no further questions of Mr.

6 Osborne at this time, Your Honor.

7 JUDGE LOVENWIRTH: Very good.

8 Mr. Cummings?

9 MR. CUMMINGS: No questions, Your Honor.

10 JUDGE LOVENWIRTH: Ms. Smith?

11 MS. SMITH: Thank you, Your Honor.

12 CROSS-EXAMINATION

13 BY MS. SMITH:

14 Q Mr. Osborne, could you please tell us how old this
15 bridge is?

16 A It was built in 1911, I believe.

17 Q And what would the life expectancy of a structure
18 like this, built at that time, be?

19 A Between 60 to 75 years.

20 Q You discuss in your report some of the repairs that
21 were made by Steamtown to the concrete. You said something
22 about there being a problem with the bonding of those repairs
23 to the main part of the structure, which was repaired. Could
24 you explain what that problem is and how long you anticipate
25 those repairs to last?

1 A What we found is when we sounded the existing
2 substructure units and even sounded some of the repairs was
3 that some of the repair areas sounded hollow; in other words,
4 the bond between the repair and the substructure was not
5 there anymore and it was just a cosmetic type repair. An
6 anticipated life of those repairs -- three years before they
7 would start to extensively deteriorate and become removed from
8 the existing structure.

9 Q What would be the difference between the type of
10 repair done by Steamtown and the type of repairs that you
11 would anticipate would be needed for this structure that
12 would, presumably, last longer than three years?

13 A The repairs that we would recommend are, one, if
14 pressure mortar surface repairs were done similar to what
15 Steamtown had done, that the structure be thoroughly inspected
16 before the new pressure mortar was applied, and that we were
17 in fact down to the sound concrete. Perhaps the repairs that
18 were done in some of those areas weren't down to sound concrete.
19 In certain areas, if the thickness of the pressure mortar
20 repair became too excessive, if the repairs needed to be, say,
21 three or four inches thick, in fact in that case the existing
22 substructure should be dowelled into and a reinforcing --
23 temperature reinforcing mesh be placed in the repair areas
24 prior to the placement of new pressure mortar surface repair
25 or just the plain cement concrete repair if it could be formed.

1 Q You talked a little bit about your core samples.
2 Could you just, for our own edification, tell us what the
3 size of those core samples are?

4 A I believe they are four-inch diameter core samples
5 -- six-inch diameter core samples.

6 Q And from what locations on the bridge were the
7 samples taken?

8 A There were two taken down through the deck through
9 the ballasted area of the superstructure, and there were two
10 taken in the substructure units. I believe they show up in
11 the photographs even where we had marked one into the pier
12 and one into the abutment areas.

13 Q Which of those core samples were the ones that
14 crumbled?

15 A One of each. One of the substructure units and one
16 of the superstructure units.

17 Q Is there a drainage problem on this bridge?

18 A Above on the track area or below at Traffic Route
19 690?

20 Q In both locations.

21 A Above there was evidence of seepage between the
22 precast deck joints. There is approximately two to three
23 feet, I believe, of ballast up in the area which would hold
24 some moisture, and it must drain down through the super-
25 structure. The superstructure is obviously not waterproof.

1 In the Traffic Route 690 area we did not notice any drainage
2 problems.

3 Q Up on the area of the track where the ballast is,
4 would there be salts there?

5 A Not that I -- I'd seen no reason for it --

6 Q That would only be down on the highway?

7 A That would only be down on the highway area where
8 salts would be used for the Traffic Route 690.

9 Q Is it your recommendation then that this bridge
10 structure would also need some kind of a drainage system put
11 in to get that water off of the deck?

12 A No. The problem -- not the drainage problem but
13 the salt problem could be addressed after the repairs are made
14 by some protective coating for reinforced concrete surfaces
15 that is referred to as a PennDOT Standard Item. It protects
16 and seals the surfaces from salt penetrations once the
17 repairs are made.

18 Q What about the water that collects on top of the
19 bridge?

20 A The water that collects on top of the bridge, if
21 extensive repairs were to be done a waterproofing membrane
22 would probably be recommended on the ballasted area of the
23 bridge, that the tracks be removed and a waterproofing
24 membrane be placed across the top of the existing super-
25 structure if it were to stay in place to prevent that

1 seepage down through the deck joints and into the existing
2 superstructure of the bridge, itself.

3 Q When you were contracted with to provide this
4 inspection report, was it the understanding of the City of
5 Scranton or your understanding that a load test should be done?

6 A No.

7 Q The City of Scranton was aware that you would not
8 be performing a load test?

9 A Yes.

10 JUDGE LOVENWIRTH: How do you know that? Did you
11 discuss it with them, with somebody?

12 THE WITNESS: Load testing was not ever discussed. It
13 was never discussed.

14 JUDGE LOVENWIRTH: Yes, but wasn't a copy of the
15 Commission's order of October 22nd, 1987 made part of the
16 contract?

17 THE WITNESS: Yes.

18 JUDGE LOVENWIRTH: And weren't you instructed by the
19 terms of the contract to do everything required by that order?

20 THE WITNESS: Yes.

21 JUDGE LOVENWIRTH: But you didn't, not because one of
22 the City officials told you not to, but because you just
23 didn't; is that correct?

24 THE WITNESS: Yes.

25 JUDGE LOVENWIRTH: All right.

1 MS. SMITH: I have no further questions at this time,
2 Your Honor.

3 JUDGE LOVENWIRTH: All right, Ms. Ertel, did you indicate
4 to me during the break that you had changed your mind and
5 you would like to ask a couple of questions?

6 MS. ERTEL: Yes, thank you, Your Honor.

7 CROSS-EXAMINATION

8 BY MS. ERTEL:

9 Q Mr. Osborne, I believe it was your testimony that
10 there was significant spalling on the superstructure of this
11 bridge at the deck portion and on the substructure under the
12 deck; is that correct?

13 A That is correct.

14 Q And isn't it true that that would be caused by
15 water; in other words, water cascading over the concrete and
16 into those areas over a period of time?

17 MR. WALKER: I'll object to the form of the question,
18 Your Honor. If the question is "Could that be one of the
19 causes," that could be answered by Mr. Osborne. If the
20 question is if that is "the cause" then there has to be some
21 foundation set for the question.

22 JUDGE LOVENWIRTH: What standing do you have to object?
23 It's not your witness. I overrule the objection. I mean any
24 answer to that question, it seems to me, couldn't be
25 contrary to the interests of Moscow Borough, so I --

1 MR. WALKER: Maybe I should just ask for a clarifica-
2 tion, and I should have posed it as such.

3 JUDGE LOVENWIRTH: All right, fine.

4 Do you want to rephrase your question?

5 MS. ERTEL: Certainly, Your Honor.

6 BY MS. ERTEL:

7 Q Mr. Osborne, is your testimony that there was
8 significant spalling on the superstructure and the under
9 portion of the deck on the substructure of this crossing?

10 A Yes, it was.

11 Q And also would it be true that water could cause
12 that spalling over a period of time cascading over the
13 concrete and the freezing and thawing cycles?

14 A Yes, the freeze/thaw cycle of the water -- concrete
15 is not an impermeable type material, so it would absorb some
16 water, and through freeze/thaw cycles the moisture in the
17 concrete as it froze would expand and pop and would cause the
18 concrete to spall, yes.

19 Q And it was also your testimony that there was no
20 waterproofing on the deck area?

21 A There was no waterproofing indicated on the original
22 drawings that we had. We did excavate through the ballast
23 material in one area and there was no waterproofing membrane
24 visible in that one area, but that was only one small area
25 where we were able to check.

1 Q Also is it your understanding that there were
2 falling concrete problems at one time before the cosmetic
3 repairs were made to the structure?

4 A I don't --

5 Q In other words, part of the deterioration resulted
6 in concrete falling from the structure onto the roadway below?

7 A Yes.

8 Q Would salt have caused falling concrete such as that?

9 A Salt would add to the problem in the deteriorated
10 areas. It would deteriorate in some of the areas that were
11 reinforced. It would deteriorate the reinforcing to a point
12 where it would rust and expand and cause pop-outs.

13 Q But wasn't it your testimony that there was no salt
14 used by the railroad?

15 A I would not anticipate that the railroad would use
16 any salt.

17 Q So, therefore, can salt be the responsible element
18 for concrete pieces falling from a deteriorated state of the
19 superstructure and the underside of the deck onto the roadway?

20 A From the superstructure?

21 Q Right.

22 A Yes, salt spray is possible from Traffic Route 690
23 to the superstructure.

24 Q Have you performed an ion content test to sub-
25 stantiate that?

1 A No.

2 Q Have you performed any test that could substantiate
3 your testimony?

4 A We have only performed compressive strength tests
5 to the concrete portion.

6 Q And that has nothing to do with chloride ion?

7 A There was no chloride ion content test, to the best of
8 my knowledge, performed on the concrete portion.

9 MS. ERTEL: That's all I have, Your Honor.

10 JUDGE LOVENWIRTH: Mr. Osborne, I'm a little bit
11 confused about something. You indicated several times that
12 the freeze/thawing cycle of the water creates a danger of
13 concrete spalling or falling off and falling onto the roadway
14 beneath; isn't that correct?

15 THE WITNESS: Correct.

16 JUDGE LOVENWIRTH: All right. So the present condition
17 of the structure is dangerous to the public; isn't that
18 correct?

19 THE WITNESS: Correct.

20 JUDGE LOVENWIRTH: All right. Now, you indicated, I
21 think, that you don't know how much it would cost to repair
22 this condition.

23 THE WITNESS: No, sir.

24 JUDGE LOVENWIRTH: You don't know?

25 THE WITNESS: No.

1 JUDGE LOVENWIRTH: All right.

2 THE WITNESS: To do the repairs, you mean?

3 JUDGE LOVENWIRTH: Yes.

4 THE WITNESS: No, we did not do a cost estimate.

5 JUDGE LOVENWIRTH: You also indicated that before spend-
6 ing money to repair this dangerous condition you would think
7 it would be a good idea to find out whether or not the
8 load carrying properties of the bridge are such that it should
9 remain as a railroad crossing; isn't that what you said?

10 THE WITNESS: Correct.

11 JUDGE LOVENWIRTH: So are you then saying that the load
12 carrying capacity of the structure should be immediately
13 tested so that you know whether or not the cost of repairing
14 the presently known dangerous condition of the bridge is
15 justified?

16 THE WITNESS: What I'm saying is that for me to prepare
17 a cost estimate of repairs for the City of Scranton, as our
18 client, I would recommend that prior to that we determine if
19 in fact the structure is capable of staying in service.

20 JUDGE LOVENWIRTH: That's right. That's what I thought.
21 Therefore, because the structure is presently a danger, as
22 you have described it, the load carrying properties of the
23 structure should be tested immediately; isn't that correct?

24 THE WITNESS: If the structure were to remain in service
25 it should be tested to see what it can carry. Since no train

1 traffic is anticipated for the structure, I see no immediate
2 danger of the structure because of collapse from a live load
3 traveling across the structure. There is some immediate
4 cosmetic repairs, I'll call them, that need to be done to the
5 substructure or there is an immediate danger to the traveling
6 public underneath the structure from small concrete spalls
7 falling below.

8 JUDGE LOVENWIRTH: You premised your answer on the
9 assumption that there isn't any intention of anyone to use
10 it for train traffic?

11 THE WITNESS: Correct.

12 JUDGE LOVENWIRTH: Then shouldn't we abolish it
13 altogether? It doesn't have any other useful function.

14 THE WITNESS: That would be one of my recommendations
15 if no trains are to travel across the bridge.

16 JUDGE LOVENWIRTH: But if your premise is incorrect,
17 if in fact the City of Scranton, Steamtown or the National
18 Park Service sometime in the foreseeable future intends to
19 run excursions over the tracks -- let us premise your answer
20 with that. Shouldn't the load carrying properties of this
21 structure be immediately ascertained?

22 THE WITNESS: Yes.

23 JUDGE LOVENWIRTH: Let's say they want to do it five
24 years from now. Say, National Park Service five years from
25 now wants to run an excursion; let's just pretend that that

1 is a fact.

2 THE WITNESS: Yes.

3 JUDGE LOVENWIRTH: Let's assume that. That's my
4 hypothetical.

5 THE WITNESS: All right.

6 JUDGE LOVENWIRTH: Even though no train traffic is
7 anticipated for five years, hypothetically, shouldn't the load
8 carrying properties of this structure immediately be
9 ascertained so that the question of which repairs, if any,
10 should immediately be made to take care of the immediate
11 dangers of concrete falling off can be measured; isn't that
12 correct?

13 THE WITNESS: No. If I were asked by the City of
14 Scranton or by Moscow or by anyone to tell them what repairs
15 are needed to the structure right now, and it's hypothetical
16 that a train would travel across there in five years, suppose
17 the train doesn't travel across there in five years and I
18 recommend extensive repairs to the substructure, and in five
19 years there's no train traffic, they have then wasted the
20 money to do those repairs.

21 JUDGE LOVENWIRTH: So you instead recommend that no
22 load testing be made and that instead the present dangerous
23 condition of the bridge to the traffic below not be
24 remediated; is that your recommendation?

25 THE WITNESS: No, I would recommend that cosmetic repairs

1 be made to the substructure at this time to ensure that the
2 traveling public below is maintained.

3 JUDGE LOVENWIRTH: And how much will that cost; do you
4 have an estimate?

5 THE WITNESS: No, I don't have an estimate on that.
6 Again, an estimate of cosmetic type repairs versus an estimate
7 of overall structural integrity type repairs may be two
8 different things.

9 JUDGE LOVENWIRTH: Yes, but earlier you said you
10 wouldn't want them to spend the money for the cosmetic repairs
11 until they know whether it's cost-justified; isn't that what
12 you said?

13 THE WITNESS: Correct.

14 JUDGE LOVENWIRTH: So now you are saying that you have
15 changed your mind; you do think that the cosmetic repairs
16 should be made instantly?

17 THE WITNESS: If there is no anticipated train traffic,
18 yes.

19 JUDGE LOVENWIRTH: Whether there is anticipated or
20 there isn't anticipated traffic, there is a present danger
21 to the public; isn't that correct?

22 THE WITNESS: From some spalling concrete on the sub-
23 structure, yes.

24 JUDGE LOVENWIRTH: But you don't have any idea how much
25 that is going to cost?

1 THE WITNESS: No.

2 JUDGE LOVENWIRTH: All right.

3 Is there any redirect?

4 MS. GALLO: No, Your Honor.

5 JUDGE LOVENWIRTH: Is there anything else?

6 MR. WALKER: Nothing further, Your Honor. Thank you.

7 JUDGE LOVENWIRTH: Thank you very much, Mr. Osborne.

8 You may step down.

9 (Witness excused.)

10 JUDGE LOVENWIRTH: Do you want to call another witness,

11 Ms. Gallo?

12 MS. GALLO: Yes, I would call John Luciani to the stand.

13 JUDGE LOVENWIRTH: Good morning, Mr. Luciani.

14 MR. LUCIANI: Good morning, Judge.

15 JUDGE LOVENWIRTH: Do you want to spell your name for
16 the record please?

17 MR. LUCIANI: L-u-c-i-a-n-i.

18 JUDGE LOVENWIRTH: And what is your first name, Mr.

19 Luciani?

20 MR. LUCIANI: John.

21 JUDGE LOVENWIRTH: Please place your right hand on the
22 Bible.

23 Whereupon,

24 JOHN J. LUCIANI

25 having been duly sworn, testified as follows:

1 JUDGE LOVENWIRTH: You may be seated.

2 All right, Ms. Gallo.

3 DIRECT EXAMINATION

4 BY MS. GALLO:

5 Q Please state your name for the record.

6 A John J. Luciani.

7 Q And your business address?

8 A The rear of 800 Providence Road, Scranton, PA.

9 That's the DPW complex, Department of Public Works.

10 Q What is your occupation, Mr. Luciani?

11 A I am the City Engineer for the City of Scranton.

12 Q And how long have you been in that position?

13 A Three years.

14 Q Would you state your educational background for the
15 Commission?

16 A Yes. I have been involved with the concrete industry
17 for the past 15 years. I have a B.S. in Civil Engineering
18 from Drexel University. I have an M.B.A. in Finance and a
19 minor in Operations Research from the University of Scranton.
20 I'm a Registered Professional Engineer. I am an American
21 Concrete Institute Certified Technician and Examiner. I have
22 been the City Engineer for the City of Scranton for the past
23 three years. I have just recently attended the World of
24 Concrete where I attended seminars on concrete problems,
25 tilt-up construction, and concrete and steel wire reinforcement.

1 I used to work for Gifford-Hill American, which was one of
2 the largest precast, prestressed producers of concrete pipe
3 in the East. I was a management trainee for the Pennsylvania
4 Department of Transportation, and I also worked in a number
5 of test labs where I analyzed concrete strength tests
6 similar to what were done up on the Moscow bridge.

7 MS. GALLO: At this time I would offer John Luciani
8 as a qualified expert professional engineer.

9 JUDGE LOVENWIRTH: Any objections?

10 MS. SMITH: No, Your Honor.

11 JUDGE LOVENWIRTH: There being no objections, then you
12 may question Mr. Luciani in his capacity as an expert.

13 BY MS. GALLO:

14 Q Mr. Luciani, have you had an opportunity to review
15 the in-depth inspection report prepared for the City of Scranton
16 by CECO Associates?

17 A Yes, I have.

18 Q Can you state for the Commission any comments you
19 have on this report?

20 A I think that maybe one of the things that we should
21 really point out is something on the cores. There was a little
22 bit of comment made on the fact that two cores were not able
23 to be broken because they crumbled, and I think that we should
24 point out that concrete consists basically of four parts.
25 You have your cement, your water, your sand and, lastly, your

1 coarse aggregate, which in common terms is known as stone;
2 and that stone can vary in size. Sometimes it is as low as
3 a half inch in size, and sometimes in rather large bridge
4 structures like the one up in Moscow that stone could be
5 six or seven inches in size on occasion.

6 As pointed out by Mr. Osborne, a six-inch bit was used
7 to retrieve that core, and if you have a four or a six-inch
8 stone within the section that you are testing and you drill
9 through that section and try to remove it, because the stone
10 that is embedded in the structure is cutting through the whole
11 cross-section it is very likely that you won't be able to
12 retrieve that particular core, and that would give you the
13 impression that it would crumble in your hand.

14 So, therefore, the fact that two cores crumbled, without
15 knowing the water/cement ratio or all the other characteristics
16 involved with removing that core, we can't state that they
17 were failures.

18 The other thing I would like to point out is that Mr.
19 Osborne stated earlier that he anticipated the concrete to
20 be 6,000 pounds; based on his testing experience I'm sure
21 that's what he found in many bridges. However, I should point
22 out that in my family business, which is a ready-mix business,
23 we pour concrete for many of the large projects in the area.
24 Present projects include right now the baseball stadium at
25 Montage, the water filtration plant at Lake Scranton, the

1 water filtration plant up at Clarks Summit, the sewage
2 treatment plant in Clarks Summit, which will have an eight
3 million pound tank on top of it; and the concrete specified
4 for those projects is 4,000 PSI.

5 Mr. Osborne stated that he found the cores tested out
6 at 4,100 PSI, and what I'm trying to point out is that by
7 any stretch of the imagination 4,100 PSI is, in my opinion,
8 an acceptable strength to be found in that particular
9 structure.

10 I should also point out that in American Concrete
11 Institute design standards your design is based on 85 percent
12 of your design strength. Therefore, in many cases with 4,000
13 PSI your design strength is really based on 85 percent of that,
14 or around 3,400 PSI.

15 So that I think the two cores that they did pull, I
16 wouldn't put all my eggs in the basket, but I don't think
17 -- I wouldn't put all my eggs in one basket and say that, you
18 know, it is the best concrete in the world, but I would say
19 that it is certainly acceptable by present engineering
20 standards for construction.

21 Q Mr. Luciani, you had occasion to go up and inspect
22 the bridge, yourself; is that correct?

23 A Yes, I did.

24 Q When was that?

25 A In May of 1987 when we had our initial PUC hearing

1 Steamtown was required to do some repairs. At that point they
2 contacted me to assist in coordinating some of those repairs,
3 and I was present on the site when they did some of the
4 gunitting and some of the concrete that they poured at the
5 piers at the center of the bridge. So I did have a fairly
6 in-depth look at the entire structure.

7 Q And when you were there did you have a chance to
8 observe the damage done by the salt, as Mr. Osborne testified
9 to?

10 A Mr. Osborne was talking about some of the freestyle
11 spalling that occurred on the structure, and that is certainly
12 evident because of the water, but there definitely is some
13 salt that has caused some deterioration of the bridge. That
14 salt, of course -- its most probable source, of course, is
15 the maintenance crews for the Department of Transportation
16 attempting to keep the roads free of ice in the wintertime.

17 The reason why I say -- and they brought up where
18 exactly is that spalling. I have some pictures that I took
19 of the construction of the bridge -- or the repair of the
20 bridge that we had done, and at the base of the piers, which
21 is the most likely place that water would lie, is where a lot
22 of the deterioration has occurred on these piers.

23 To try to explain a little better about what actually
24 would occur there, Route 690 is at a higher elevation, which
25 runs parallel to the Steamtown bridge, and it is higher, and

1 the bridge dips down into like a little gully to pass under-
2 neath the structure. And it is probable that the melting snow
3 would carry the salt from in and around the area to the under-
4 side of that bridge where it could affect and did affect the
5 piers on the underside of the structure.

6 MS. GALLO: I have no further questions for this witness.

7 JUDGE LOVENWIRTH: Ms. Ertel, do you want to cross-
8 examine the witness?

9 MS. ERTEL: Yes, Your Honor.

10 CROSS-EXAMINATION

11 BY MS. ERTEL:

12 Q Mr. Luciani, with respect to your testimony regard-
13 ing the effect of salt on the structure, have you performed any
14 tests to determine the chloride ion content of various
15 portions of the structure?

16 A No, I haven't.

17 Q Is it your personal recommendation that a load
18 carrying capacity analysis be performed on this structure?

19 A Is it my personal recommendation?

20 MS. GALLO: Objection; this is beyond the scope of my
21 direct.

22 MS. ERTEL: Is this witness going to be the witness
23 answering the Questions and Procedures?

24 JUDGE LOVENWIRTH: First of all, I don't think it's
25 beyond the scope of the direct examination because this witness

1 -- and I know it's unusual and uncharacteristic, but you
2 presented two witnesses, expert witnesses, who have divergent
3 views on the quality of this structure. So I think that he's
4 open game for any question on the report.

5 But aside from that, you have been asked by the
6 Commission to develop the record in certain areas that so far
7 we haven't heard anything about, and if you are not going to
8 ask the witness the questions about them I'm going to permit
9 others to ask. I'll ask if they don't. So I'll overrule your
10 objection.

11 MS. GALLO: Thank you, Your Honor.

12 BY MS. ERTEL:

13 Q Would you please answer the question, Mr. Luciani?

14 A Would you repeat the question please?

15 MS. ERTEL: Could I have the stenographer read back the
16 question?

17 JUDGE LOVENWIRTH: Please do that for us, Ms. Glass.

18 (Whereupon, the reporter read from the record as
19 requested.)

20 BY MS. ERTEL:

21 Q Is it your opinion that a load carrying analysis
22 should be performed on this structure?

23 A If the bridge is intended to be used, I would have
24 to make a decision not only in the best interests of the
25 traveling public below because I'm a professional engineer,

1 but I also would have to make a decision based on the
2 financial status of the City of Scranton, which is my
3 principal employer, and that's the only area, I believe, that
4 my opinion should be different from any other professional
5 engineer. Based on the fact that we want to spend our money
6 in the best interests of the taxpayers, if the bridge is not
7 going to be used, I would suggest that we not load test the
8 bridge.

9 JUDGE LOVENWIRTH: Listen; when you are sitting here
10 as a witness, as an expert witness having been qualified as
11 such, then it doesn't matter who pays your salary. You give
12 an opinion as an engineer, period. It doesn't matter whether
13 you work for the City of Scranton or whether you work for
14 PennDOT.

15 Do you understand that, sir?

16 THE WITNESS: Yes, I do, Your Honor.

17 JUDGE LOVENWIRTH: All right.

18 THE WITNESS: But if the bridge is not to be used --

19 JUDGE LOVENWIRTH: Because if you say that, no, we
20 shouldn't have any load testing and then something happens,
21 they are going to sue you.

22 THE WITNESS: Yes, sir.

23 JUDGE LOVENWIRTH: You are an engineer.

24 BY MS. ERTEL:

25 Q In your professional opinion, is it your

1 recommendation, based on engineering principles, that a load
2 carrying analysis should be performed on this structure?

3 A I find that difficult to answer in that I don't know
4 if they are going to use that bridge in the near future.

5 Q Okay, then let me ask you --

6 A If they are going to use the bridge, I would say
7 yes; definitely a load carrying analysis should be done.

8 Q Let me ask you this question then. It was my
9 understanding, based on the position of the City of Scranton,
10 stated at the outset of this hearing -- were you present
11 during the entire hearing this morning?

12 A Yes, I was.

13 Q And did you hear testimony to the extent -- or a
14 statement to the extent that the National Park Service may
15 take over or is anticipating to take over this structure?

16 A Yes, I did.

17 Q And, therefore, would it be the intent, to your
18 understanding, that the National Park Service would operate
19 excursion trains over this structure?

20 A They have three bridges ahead of this structure
21 which are --

22 Q That's fine, but is it their intent to operate
23 excursion trains over this particular structure as well as
24 possibly others?

25 A Eventually over this particular structure?

1 Q Yes.

2 A Is it their intent?

3 Q Is that your understanding of the representations
4 that were made by the City of Scranton at this hearing today?

5 A I would say it is their intent, yes.

6 Q So based on the fact that there is a significant
7 possibility, or a possibility, that excursion trains will
8 be run on this structure, with that as your premise, would
9 it be your professional opinion that a load carrying analysis
10 be performed on this structure?

11 A Yes.

12 Q Who currently is responsible for the structure, in
13 your opinion?

14 I mean I've heard several parties brought up today, and
15 currently --

16 A I don't know. I think that decision might have to
17 be made by the Court, or our solicitor might have an opinion
18 on that. I don't know what the actual contractual agreement
19 between the City and the people we purchased the tracks from
20 actually says.

21 Q The current owner then is Steamtown at this point,
22 of the tracks; is that correct?

23 A I couldn't answer that.

24 Q Is the current owner the City of Scranton, to the
25 best of your knowledge?

1 A I don't know who -- I don't know the answer to that
2 also. I was directed by --

3 Q Has the City of Scranton performed maintenance on
4 the structure in the past?

5 A No. The City of Scranton? The actual work forces
6 that were used at the bridge were generated by Steamtown
7 actually, the people who really did some of the repair work
8 up there. I went up as -- was directed by some of the
9 officials of the City; they asked me to be present.

10 JUDGE LOVENWIRTH: Ms. Ertel, as far as I'm concerned,
11 in accordance with Finding of Fact No. 1 made by Judge Mindlin
12 in his recommended decision dated September 8th, 1987, which
13 was thereafter adopted on October 22nd, 1987 by the
14 Commission, as far as I'm concerned the City of Scranton owns
15 the bridge.

16 MS. ERTEL: Thank you, Your Honor. I was just trying
17 to ascertain the extent of the witness' knowledge about this.

18 JUDGE LOVENWIRTH: Very good.

19 MS. ERTEL: I have no further questions, with the hope
20 that the remaining Questions and Procedures that were set
21 forth by the Commission be asked by the representative from
22 the City of Scranton for their testimony today; and, if not,
23 I will ask those questions at a later time.

24 JUDGE LOVENWIRTH: Mr. Walker, do you want to cross-
25 examine?

1 MR. WALKER: I have just several questions, Your Honor,
2 but before I do, based upon some questions asked by counsel
3 for the Department of Transportation, the record again at this
4 proceeding today was opened up to questions which I felt
5 were resolved by Judge Mindlin in his findings of fact.

6 JUDGE LOVENWIRTH: Like which questions?

7 MR. WALKER: Well, questions as to responsibility and
8 questions as to ownership and those types of questions.

9 I would just ask the Court: if the findings of fact,
10 of course, are a part of this record, if it would be necessary
11 to delve into those areas at this time.

12 JUDGE LOVENWIRTH: The findings of fact have something
13 in common with the structure; they are concrete, as far as
14 I'm concerned, unless there has been a change. It could be
15 the City of Scranton sold the bridge to somebody, and that
16 would be a new fact, but otherwise --

17 MR. WALKER: Fine, Your Honor.

18 JUDGE LOVENWIRTH: It's now eight minutes before 12:00,
19 and I don't want to interrupt your cross-examination in the
20 middle. You said you had several questions. So why don't
21 we recess until 1:00.

22 (Whereupon, at 11:52 a.m. the hearing was adjourned,
23 to be reconvened at 1:00 p.m. this same day.)
24
25

1 AFTERNOON SESSION

2 (1:00 p.m.)

3 JUDGE LOVENWIRTH: We are back on the record.

4 All right, Mr. Walker.

5 MR. WALKER: Thank you, Your Honor.

6 Whereupon,

7 JOHN J. LUCIANI

8 having previously been duly sworn, testified further as
9 follows:

10 CROSS-EXAMINATION

11 BY MR. WALKER:

12 Q Mr. Luciani, just so that we have a clear record
13 in this particular case, you had testified in a prior proceed-
14 ings before the PUC in this matter as the City Engineer; is
15 that correct?

16 A Correct.

17 Q And at that time you had testified that you were
18 not a Registered Professional Engineer; however, in the
19 meantime you have become one?

20 A Yes.

21 Q Now you heard testimony from Mr. Osborne from CECCO
22 Associates regarding a report which he had submitted, which
23 was prepared on behalf of the City of Scranton pursuant to
24 a PUC order; is that correct?

25 A Right.

1 Q Now, can you tell us, Mr. Luciani, what, if anything,
2 you reviewed with Mr. Osborne or any other representative of
3 CECO Associates, Inc. prior to asking them to prepare this
4 test -- prepare this report, I should say.

5 A What discussions took place regarding it?

6 Q What discussions took place regarding the type of
7 testing to be done, the extent and nature of the testing, and
8 the cost of said testing?

9 A I know that originally the bid document was
10 prepared -- or the order came down from the PUC, I should say,
11 and we scrambled to get a consultant on board. At that time
12 I contacted the Mayor, along with our solicitor, and told them
13 of our plight, and it was the Mayor who contacted CECO
14 Associates and told them of our problem with the Moscow bridge,
15 and he is the one who asked CECO if they would be able to
16 submit a bid on the PUC order. That was where the directive
17 came from.

18 Then the other conversations that I had with CECO involved,
19 again, the core testing. I talked to one of the principals
20 of the firm, Angelo Rosati, about the cores that fell apart,
21 and I discussed with him my philosophy on why I felt the
22 cores fell apart, and then a few weeks later the engineer
23 report came out saying that the -- you know, that two were
24 retrieved and two fell apart, and that the compressor tests
25 were inconclusive. That was pretty much the extent of the

1 conversations.

2 Q In your capacity as the engineer for the City of
3 Scranton, pursuant to the PUC directive to have this particular
4 type of testing done, did you discuss with any members of CECO
5 Associates, Inc. the particular testing which was to be
6 required by you in your capacity as an engineer employing
7 CECO Associates, Inc.?

8 A I was asked in one conversation that I recall -- and
9 again it was probably a year ago. Andrew Rosati, one of the
10 partners of the firm, said: is there any way we can load
11 test the bridge? That was a question because applying load
12 is a very difficult thing.

13 Q Whose question was that? Was that yours or was that
14 Mr. Rosati's?

15 A That was Mr. Rosati's. And I said: it's possible
16 that we could get the Big Boy, which is the biggest engine
17 that Steamtown has, and do a deflection test with the Big Boy.
18 Unfortunately, the bridges before the Steamtown bridge, the
19 three bridges are not sufficiently strong enough to support
20 the Big Boy, and, unfortunately, unless we would go by rail
21 we can't get the Big Boy up to the Steamtown bridge. That
22 escalates the cost of load testing it astronomically, and I
23 think that that's one of the reasons why it was not done.

24 Q But you did affirmatively discuss with a member of
25 CECO Associates, Inc., acting as a representative of the City

1 of Scranton, as you were as the engineer, you did discuss with
2 them the requirement that load testing would have to be done?

3 A No, I know -- I should state that this conversation
4 took place at a Christmas social either for the Engineering
5 Society or for CECO or whoever, and we discussed one method
6 of load testing, and I don't know if it was something that
7 was ever pursued, that we'd look for an alternative way to
8 load test it, but that was one discussion that took place.

9 Q So is it your testimony that you never requested
10 CECO Associates, Inc. or any representatives thereof to load
11 test --

12 A Right, I personally never requested CECO to load
13 test the structure.

14 Q Did you ask any representatives of CECO Associates,
15 Inc. to do any other type of structural analysis or testing
16 in this particular case on this bridge that would be load
17 bearing, load analysis or anything like that?

18 A No. I never personally did.

19 Q And did you participate in the preparation of the
20 contract agreement with CECO Associates, Inc.?

21 A To a small part, yes.

22 Q Do you know whether or not the Mayor -- that would be
23 Mayor Wenzel, W-e-n-z-e-l?

24 A Yes.

25 Q Do you know whether or not the Mayor or any other

1 representatives of the City discussed and informed CECO
2 Associates, Inc. that load testing, load bearing or load
3 analysis or some other type of structural analysis testing
4 would be needed in this particular case and on this particular
5 bridge, pursuant to the PUC order?

6 A I don't know if anybody in the City Administration
7 gave that directive.

8 Q Mr. Luciani, did you have an opportunity to review
9 the PUC order which was in the nature of a recommended decision
10 containing findings of fact prior to talking with CECO
11 Associates, Inc. and prior to contracting with CECO Associates
12 to do this work?

13 A Yes, I did have a chance to review that.

14 Q And were you aware that the findings of fact and
15 the written decision required that that work be done, the load
16 testing type work, structural analysis, load bearing or load
17 analysis or something of that nature?

18 A I'm sorry; would you repeat the question?

19 Q Sure. Were you aware that the written decision and
20 findings of fact required structural analysis of some type,
21 whether it be load bearing, load analysis, load testing or
22 whatever phrase is used; were you aware that the recommendation
23 of the PUC and order of the PUC would require that that type
24 of testing be done?

25 A Yes, I was aware of that.

1 Q Now, you indicated upon earlier questioning that
2 you had an opportunity to review the report of Mr. Osborne,
3 who has testified here today.

4 A Uh-huh.

5 Q And you agree with the conclusions and recommendations
6 of Mr. Osborne?

7 A Yes, I do.

8 Q So you would agree with his opinion that the
9 structure needs further load testing before any type of train
10 could pass over the trackage?

11 A Yes.

12 Q That that would be necessary?

13 A Yes.

14 Q Would you agree that interim maintenance work must
15 be completed upon the bridge, as Mr. Osborne had indicated
16 in his testimony and in his report?

17 A Interim maintenance, interim between what?

18 JUDGE LOVENWIRTH: Between now and the time a piece of
19 concrete falls on somebody's head.

20 THE WITNESS: I would say yes, interim maintenance
21 should be performed before something could happen, yes.

22 BY MR. WALKER:

23 Q All right, would you agree with the findings in the
24 testimony of Mr. Osborne wherein he had indicated that if this
25 type of -- as he phrased it -- cosmetic maintenance was not

1 completed, that the structural integrity of the bridge would
2 be subject to further possible harm?

3 A Yes, I would agree that that is true, yes.

4 Q So would it be fair to say, Mr. Luciani, that if
5 this type of cosmetic maintenance or cosmetic repair-type work
6 is not done that the longer that goes on untreated, the
7 greater the chances are that some structural integrity
8 damage will be done to the bridge?

9 A That's a very common fact; I would say yes.

10 Q It's a common way to put it; it's not technical and
11 it's not engineering, but that could -- that will occur?

12 A In any case, whether it be your car or that bridge.

13 Q You had talked before at length about the cores which
14 Mr. Osborne had alluded to.

15 A Yes, sir.

16 Q And you had explained, both on direct examination
17 and when I asked you the initial question this afternoon,
18 that there was a reason why those two cores are not
19 significant, in your opinion.

20 A Yes.

21 Q And you testified, I believe, that just taking two
22 cores was not a traditional or accepted type of testing
23 procedure; is that what you indicated?

24 A No, I didn't state that.

25 Q Why don't you tell me what is significant about those

1 two core samples that you talked about.

2 A I was trying to point out that because those two
3 cores fell apart that does not mean that those cores aren't
4 structurally sufficient to carry that bridge or that the
5 concrete was bad in them. It might mean that the diameter
6 of the bit used to remove that core was such that it wasn't
7 large enough to allow those cores to remain intact. In other
8 words, my feeling is that if he had used a bit that was eight
9 inches in size or ten inches in size -- and now you're really
10 going up in the size of your drill -- but if we used a ten-
11 inch core bit, the probability that those cores would have
12 been successfully removed would have been much higher.

13 JUDGE LOVENWIRTH: Did you go up there with an eight
14 or ten-inch bit?

15 THE WITNESS: Pardon.

16 JUDGE LOVENWIRTH: Did you go up there with an eight
17 or ten-inch bit?

18 THE WITNESS: Actually -- no, I didn't, but actually
19 the ASTM standards call for your -- and ASTM is the American
20 Society for Testing Materials -- requires the bit size to be
21 a function of the maximum size of course aggregate. In simple
22 terms, if your stone in the bridge is four-inch stone, the
23 size of your bit would have to be somewhat larger than four
24 inches. And, unfortunately, CECO did not know which size stone
25 was used in the bridge, and I'm certain that's why they picked

1 a six-inch or an eight-inch bit that they did, which I believe
2 was a fair sized bit to start with.

3 JUDGE LOVENWIRTH: After reading the report, why didn't
4 you have somebody go up there with a ten-inch bit?

5 THE WITNESS: Because -- the reason why I didn't was
6 because they pulled two out with six-inch bits. I examined
7 the cores that they did -- they were in CECO's office one day,
8 and, you know, they had completed their field investigation,
9 and I just didn't, for whatever reasons.

10 BY MR. WALKER:

11 Q Are there any specific and particular reasons why
12 eight-inch bits or ten-inch bits weren't used thereafter?

13 A I think that the local testing laboratory that
14 pulls these bits, or cores, who I used to work for, did not
15 have a drill large enough to drive that bit into the concrete.

16 Q Are there any particular and specific reasons why
17 two additional bits or four additional bits -- or cores I
18 should say -- two additional cores or four additional cores
19 could not have been taken out after the two cores had crumbled?

20 A I think the primary reason was cost.

21 Q Cost?

22 A Yes.

23 Q So there was no reason why you couldn't take two
24 more cores out to sample those?

25 A There is no reason why you couldn't, but again cost

1 enters into it and the available adjoining bridges in the area.
2 Again, the principal lab that a lot of people used did not
3 have that sized drill available to them.

4 Q As a professional engineer --

5 JUDGE LOVENWIRTH: How do you know they didn't?

6 THE WITNESS: I used to work for them.

7 JUDGE LOVENWIRTH: Excuse me.

8 BY MR. WALKER:

9 Q As a professional engineer, Mr. Luciani, are you
10 telling us that the fact that these two cores crumbled could
11 not have any relationship to the status of the concrete in
12 that bridge?

13 A As a professional engineer, am I telling you that
14 the crumbling cores could not, impossible?

15 Q Could not in any possibility have any relationship
16 to the structural integrity of the bridge, the concrete within
17 the bridge, itself?

18 A I looked at the cores. I saw segments of large
19 stone, you know, intersecting the cross-section of that core;
20 and, in my opinion, I felt that the stone was too large to
21 allow that core to be extracted. Therefore, I concluded,
22 based on my visual observation, without doing a petrographic
23 examination, that the core failed or fell apart because
24 the stone was too large for the bit that was used.

25 Q Did you have any concern at all, as a professional

1 engineer, with an eye towards the structural integrity of this
2 bridge and the concrete within the bridge? Did this cause
3 you any concern at all that these two cores had crumbled?

4 A Let's talk about the concrete alone.

5 Q If you could, I would ask you to answer the question
6 first, and then you can explain your answer.

7 A I cannot really discuss the entire structural
8 portion of the bridge. I can only talk about the strength
9 of the concrete within the bridge. I think the analysis of
10 the entire structure was CECO's job, and I feel today that
11 my expertise falls within the concrete alone.

12 Q Okay, the concrete, itself, did the fact that two
13 cores of this concrete which were taken out of the bridge
14 had crumbled, did that give you any concern; did that cause
15 any concern to you, as a professional engineer, as to the
16 strength of the concrete within that bridge?

17 A Initially it did. On seeing the cores I was a little
18 more -- I was a little less concerned because of the cross-
19 section that I physically looked at.

20 Q Okay, and you did that with the naked eye?

21 A Yes, I did.

22 Q And you referred to a petrographic examination.

23 A Yes.

24 Q Could you explain what that is to us?

25 A A petrographic examination is done by certain experts

1 in the field, and what a petrographic examination will do is
2 it will determine the amount of water to cement ratio in that
3 particular kind of concrete, the type of cement, whether it
4 be 1, 2, 3, 4 or 5, the amount of coarse aggregate by
5 volume, the amount of organics, the amount of fine aggregate,
6 and the estimated strength of the cement, alone, in that
7 particular material. It will also tell you how many freeze/
8 thaw cycles, how much -- they could possibly even determine
9 what the air content of that concrete was; they can also tell
10 you how much chloride ion content there is in there, and they
11 can tell you if the contractor used calcium chloride in the
12 construction of that particular bridge.

13 Q Was that type testing done?

14 A No.

15 Q Would that type of testing be significant for the
16 determination before the Commission as to the structural
17 integrity of the bridge, especially after you have two cores
18 which had crumbled?

19 A Would it assist? It would assist in the structural
20 integrity of the bridge, just like breaking a core did.

21 Q Would petrographic examination, in your mind, be
22 more important after you have discovered two cores had fallen
23 apart after being extracted from the bridge?

24 A Would it be more important?

25 Q In your determination of whether or not that bridge

1 is --

2 A In my opinion --

3 Q -- structurally --

4 A In my opinion as an engineer, I would say that a
5 petrographic examination, although very expensive, is a very
6 conclusive analysis of the material within a bridge.

7 Q And the determination of the type of material within
8 the bridge has a lot to do with the structural integrity of
9 the bridge, doesn't it?

10 A That is correct, yes.

11 MR. WALKER: May I have a moment, Your Honor.

12 JUDGE LOVENWIRTH: Yes.

13 (Pause.)

14 BY MR. WALKER:

15 Q Mr. Luciani, you had testified that the fact that
16 Mr. Osborne found 4,182 PSI in these cores which were used
17 as samples was not a cause of concern to you?

18 A No, I think that's a pretty good strength, in my
19 opinion, of the concrete.

20 Q And Mr. Osborne had testified that he expected to
21 find 6,000.

22 A Uh-huh.

23 Q Can you tell us why your opinion would be different
24 from his; what factors would differentiate your opinion from
25 that of Mr. Osborne?

1 A Mr. Osborne, I'm certain he has vast experience in
2 testing a number of these structures, and his personal
3 experience is he's seen many bridges test as high as 6,000
4 and possibly even higher. I've seen and tested concrete
5 that was relatively new and poured recently and worked in a
6 laboratory where we tested these cylinders, and 4,000 is an
7 acceptable strength for many PennDOT bridge abutments. I
8 think their requirement for bridge abutments is 3,750 pounds
9 --

10 MS. ERTEL: Objection, Your Honor. This witness is not
11 a PennDOT employee.

12 JUDGE LOVENWIRTH: But he is a professional engineer.
13 Overruled.

14 THE WITNESS: And so, based on PennDOT standards, you
15 know, it classifies as at least a double A strength of
16 concrete for PennDOT, and that is usually used for a lot of
17 structures.

18 BY MR. WALKER:

19 Q Would you agree with Mr. Osborne's testimony that
20 the strength would increase with time?

21 A Yes, it does, up until a point, and then it doesn't
22 get any stronger.

23 Q How much would it increase in terms of percentage?

24 A Let's talk about Type 1 cement, which is the kind
25 of cement that was used in this bridge. In seven days from

1 when it was poured -- let's assume it had zero strength; to
2 the seventh day you might get a 65 percent increase in the
3 strength, and then at the 28th day, that's the benchmark;
4 that's 100 percent of its designed strength. And then what
5 it gains after that, we're not really concerned about.
6 All concrete testing is based -- for new construction, I should
7 say, is based on its 28-day strength, and that 28-day strength
8 is used in your design calculations and also in your -- it's
9 used in your design calculations and also it's the benchmark
10 for your acceptance of a certain structure.

11 Q And that's the 65 percent formula?

12 A No, the 28 days.

13 Q The 28 days is 65 percent?

14 A The 28 days, we call it 100 percent of its strength.

15 Q 100 percent of its strength.

16 A In other words, if the concrete is specified at
17 4,000 PSI for a certain project, okay --

18 Q Like your projects that you referred to?

19 A Like I referred to before.

20 Q Okay.

21 A At 28 days that cylinder must break at least at
22 4,000 pounds or above, 4,200, 4,500, etcetera.

23 Q Now, your testimony earlier had focused also upon
24 the salt which you had visually observed?

25 A Yes.

1 Q And you referred to Route 690.

2 A Yes, I believe that's the highway that parallels
3 the Steamtown tracks.

4 Q And do you know whether or not that Route 690 goes
5 under the bridge?

6 A No, it doesn't. Market Street, I believe, is the
7 street that goes under the bridge. I don't recall offhand.

8 Q You don't know what goes under the bridge and what
9 parallels it?

10 A I know it's Market Street; I believe that's also
11 a State Highway. It's 690 and then the other one is 378, I
12 believe.

13 Q Let me ask you this: could you tell us whether or
14 not you had an opportunity to look at the roadway, the pillars
15 on the roadway, and the abutments on the roadway or near the
16 roadway underneath the bridge?

17 A Yes, I did.

18 Q And is that the area you were referring to earlier
19 when you said you found evidence, visual evidence of salt?

20 A I would say that the bulk of the areas that were
21 affected by the salt were the sidewalk areas adjacent to the
22 abutments -- there is a sidewalk area there; that's spalled,
23 and I think a part of that is probably due to some of the salt
24 that might have accumulated under there. And also the piers
25 in the center of the bridge, and the curblin at the sidewalk

1 also is affected by the salt.

2 Q The piers and abutments which you were talking about,
3 they are found underneath the bridge; is that correct?

4 A That's correct.

5 Q Did you request any chloride ionization testing to
6 be done, if that's the correct phrase?

7 A No. No, I did not.

8 Q As a professional engineer, Mr. Luciani, would you
9 recommend a load carrying analysis for this bridge, as Mr.
10 Osborne has done?

11 A Yes, I would recommend it prior to running any
12 trains over it, absolutely. Under its own dead weight I don't
13 foresee a problem.

14 Q Can you tell us, Mr. Luciani, whether or not the
15 financial concerns of the City of Scranton played any role
16 in your determination as to what type of testing was to be
17 done by CECO Associates, Inc.?

18 A Did the financial --

19 Q Let me rephrase it.

20 A Okay.

21 Q Earlier upon some questions propounded to you by
22 counsel for the City of Scranton, you had indicated that you
23 have the best interests of the traveling public and the
24 financial concerns of the City of Scranton in mind in your
25 capacity as the City of Scranton engineer; is that correct?

1 A Yes, that's true.

2 Q Now, when you contracted with CECO Associates, Inc.
3 for the work which they were supposed to do pursuant to the
4 order, did you have the financial concerns for the City of
5 Scranton as part of your basis for the type of work which was
6 requested of CECO Associates, Inc.?

7 A The Mayor actually let that -- or worked on that
8 contract in letting that contract, and, yes, he did have
9 financial concerns in the execution of that contract.

10 MR. WALKER: May I have a moment, Your Honor?

11 JUDGE LOVENWIRTH: Yes.

12 (Pause.)

13 MR. WALKER: I have just one final question, if I may,
14 Your Honor.

15 BY MR. WALKER:

16 Q Mr. Luciani, so that I understand it, you have no
17 objections to the conclusions and recommendations that Mr.
18 Osborne has submitted in his report, the report which is an
19 exhibit here today; is that correct?

20 A That's correct.

21 MR. WALKER: I have nothing further at this time, Your
22 Honor.

23 JUDGE LOVENWIRTH: Mr. Cummings?

24 MR. CUMMINGS: No questions, Your Honor.

25 JUDGE LOVENWIRTH: Is there any redirect?

1 MS. SMITH: Your Honor, I have some questions.

2 JUDGE LOVENWIRTH: I beg your pardon, Ms. Smith. Excuse
3 me.

4 Ms. Smith?

5 MS. SMITH: Thank you, Your Honor.

6 CROSS-EXAMINATION

7 BY MS. SMITH:

8 Q Mr. Luciani, you are here today to testify in your
9 capacity as the City Engineer; is that correct?

10 A That is correct.

11 Q Do you have any authority to testify on behalf of
12 the City, particularly to the questions that were promulgated
13 by the Commission Staff?

14 A Do I have any authority? Unfortunately, because
15 of the nature of our city, the only people who have authority
16 -- it's really a group type decision -- are the Council, the
17 Mayor, the City Controller and the City Solicitor and the City
18 Clerk really are the only ones authorized to make decisions
19 in the City of Scranton. Just getting the study done was a
20 very complex thing, and so I don't think there's any single
21 individual that we could bring into this room and say: do you
22 have the authority to answer the questions in this? Because
23 I have knowledge of the administration and the way that the
24 city works, I think I can possibly do my best to answer some
25 of the questions in this script. However, there is no single

1 individual unless we get City Council and the Mayor and the
2 whole parade that I've told you about in here to answer those
3 questions.

4 Q Okay, let's take each question one at a time, and
5 if you are unable to answer the question please just state
6 that you are unable to answer that question.

7 Could you please state what the City policy has been
8 regarding future inspections and maintenance of the subject
9 bridge?

10 A As indicated before, the National Park Service is
11 interested in taking over the structure. I think in a very
12 -- I am led to believe by the things going on in the City
13 right now that in a very short time the National Park will
14 take over that bridge, and in that capacity they will take
15 all responsibility for maintenance and inspection of that
16 structure.

17 Q Between now and the time that another entity would
18 take over the bridge, what is the City of Scranton planning
19 to do in regard to inspection of this bridge and the mainten-
20 ance of this bridge?

21 A I cannot answer that question because, again, the
22 Council, the Mayor and th other officials of the City would
23 have to determine if funds were available to do that kind of
24 maintenance and inspection. They would make that decision
25 jointly, and if it was available it would be done, but, again,

1 the Council and the Mayor make those decisions.

2 JUDGE LOVENWIRTH: I think we're going to make it easy
3 for them. I think we're going to do it for them.

4 BY MS. SMITH:

5 Q Would you recommend or does the City have any
6 recommendation that any restrictions be placed on the traffic
7 crossing over the bridge? Now we are speaking about rail
8 traffic.

9 A Yes, I would suggest that, as pointed out in the
10 report, rail traffic be eliminated on the overhead structure
11 until an in-depth study can be done to determine what the
12 actual load capacity of that structure would be.

13 Q So then you would be in agreement that the Commission
14 should issue an order prohibiting any rail traffic?

15 A Yes, I would have no problem with that.

16 Q I believe that No. 5 has been answered in that it
17 pertains to Steamtown and any other entities which may be
18 involved in this bridge in the future.

19 A All right.

20 JUDGE LOVENWIRTH: It's been answered by way of hearsay.
21 There isn't any operating railroad here to tell us what they
22 want to do with the bridge.

23 MS. SMITH: That is correct.

24 BY MS. SMITH:

25 Q Question No. 6, Mr. Luciani, asks if the City

1 can state whether it will agree to prepare detailed construc-
2 tion plans to rehabilitate the bridge if the Commission
3 determines that rehabilitation should be done. Is the City
4 in a position to do that; has that been discussed?

5 A No, we are not in the position. If it were to be
6 done it would have to be funded. It could not be done in-
7 house; we do not have the staff available to do that; and if
8 it were to be done, if it were to be subcontracted out it
9 would have to be funded, and at this point in time I would
10 say in this year's budget there is no allowance for repair
11 of the Moscow bridge.

12 Q What length of time would be involved in preparing
13 plans for rehabilitation of the structure?

14 A Based on other bridges done in the City, I would
15 say plans would take not more than one year to complete.

16 Q What about replacement of the structure; is the City
17 willing to prepare construction plans for replacement?

18 A Again, the answer I think is similar to the answer
19 I just gave; we can't do it in-house. It is not funded at
20 this point in time, and, you know, we would have to subcontract
21 that out, and we wouldn't be able to do it without opening
22 the budget, and we don't do that as a rule.

23 MS. ERTEL: Your Honor, at this time I am going to
24 object to this witness' references to funding availability.

25 JUDGE LOVENWIRTH: Sustained.

1 MS. ERTEL: Thank you, Your Honor.

2 JUDGE LOVENWIRTH: You will do it if you are ordered
3 to do it.

4 BY MS. SMITH:

5 Q Mr. Luciani, what length of time would be needed
6 to prepare plans for construction?

7 A For construction I would say --

8 Q Of replacement.

9 A For replacement, a year to a year and a half.

10 Q If the Commission determines that this crossing
11 should be abolished and the bridge removed, is the City
12 prepared to provide construction plans for the removal of the
13 bridge?

14 A Again, subcontracted out, the time frame would be
15 less than a year, six months to a year.

16 Q Mr. Luciani, do you know if this bridge is on the
17 Bridge Bill?

18 A Well, I believe it was recently placed on the Bridge
19 Bill. The problem is --

20 JUDGE LOVENWIRTH: Whose Bridge Bill?

21 THE WITNESS: The State of Pennsylvania and the Federal
22 Government have a bridge bill which allows 80 percent of the
23 funding to come from the Federal Government, 15 percent from
24 the State, and 5 percent by the sponsoring municipality.

25 I think there was a problem. One of the problems is

1 it is not a bridge that carries cars over a river, and there
2 was a problem with the definition or the use of those funds.
3 And I know within the next twelve years, which are already
4 programmed, from right now for the next twelve years the bridge
5 isn't within that source of funding. Approximately one month
6 ago myself, Representative Gaynor Cawley and John Latchar
7 from the National Park Service petitioned the Department of
8 Transportation to allow us to place that bridge on the Bridge
9 Bill, and that's being considered right now.

10 BY MS. SMITH:

11 Q Aside from the facts that you have just stated, have
12 there been any other attempts by the City of Scranton to
13 obtain funding for this bridge?

14 A Yes, there was. I think the National Park Service
15 has attempted to work with our State Senator and State
16 Representatives to get it on the Bridge Bill. Again, there
17 are some problems with the type of bridge that it is.

18 MS. SMITH: I have no further questions, Your Honor.

19 JUDGE LOVENWIRTH: Is there any redirect, Ms. Gallo?

20 MS. GALLO: No, Your Honor.

21 JUDGE LOVENWIRTH: All right, thank you very much, Mr.
22 Luciani. You may step down.

23 (Witness excused.)

24 JUDGE LOVENWIRTH: Do you have any additional witnesses,
25 Ms. Gallo?

1 MS. GALLO: No, Your Honor.

2 JUDGE LOVENWIRTH: Mr. Walker, do you want to call a
3 witness?

4 MR. WALKER: Thank you, Your Honor. Mr. Surace.

5 JUDGE LOVENWIRTH: Good afternoon, Mr. Surace.

6 Would you spell your name for us?

7 MR. SURACE: S-u-r-a-c-e.

8 JUDGE LOVENWIRTH: And what is your first name?

9 MR. SURACE: Dominic, D-o-m-i-n-i-c.

10 JUDGE LOVENWIRTH: Please place your right hand on the
11 Bible.

12 Whereupon,

13 DOMINIC SURACE

14 having been duly sworn, testified as follows:

15 JUDGE LOVENWIRTH: Please be seated.

16 Mr Walker.

17 MR. WALKER: Thank you, Your Honor.

18 Your Honor, Mr. Surace has already testified in these
19 proceedings and has already been qualified as an expert witness.

20 I would ask --

21 JUDGE LOVENWIRTH: It's not necessary to do it again.

22 MR. WALKER: Thank you, Your Honor, just so long as the
23 record is clear that he has been so qualified. Thank you.

24 DIRECT EXAMINATION

25 BY MR. WALKER:

Q Mr. Surace, as I had indicated, you testified

1 previously in these proceedings back in 1987 before the Public
2 Utility Commission; is that correct?

3 A That's correct.

4 Q And that concerned the Moscow Borough bridge and
5 the structural integrity of the bridge, among other problems
6 which existed with the bridge?

7 A Correct.

8 Q And by the way, Mr. Surace, you are a professional
9 engineer for both the Borough of Moscow and the County of
10 Lackawanna; is that correct?

11 A That's correct.

12 Q Now, Mr. Surace --

13 JUDGE LOVENWIRTH: Is your testimony today on behalf
14 of the Borough of Moscow or is it also, Mr. Cummings, on
15 behalf of Lackawanna County?

16 THE WITNESS: Both, Your Honor. I represent both; I
17 work for both the county and the municipality.

18 MR. CUMMINGS: The four questions posed to the County
19 of Lackawanna, being paragraphs 18, 19, 20 and 21, I believe
20 the County's statements and positions will mirror the Borough
21 of Moscow's and that the answers would be identical.

22 MR. WALKER: May I continue, Your Honor?

23 JUDGE LOVENWIRTH: Yes.

24 BY MR. WALKER:

25 Q Mr. Surace, did you have an opportunity to testify

1 before, prior to this?

2 A Yes, I did.

3 Q And could you just relate briefly for His Honor the
4 position which you took in regard to the bridge at that time?

5 A Well, basically at that particular time the record
6 shows that this report prepared by CECO Associates confirms
7 my concerns. I was concerned about the structural integrity
8 and the safe loading of that particular bridge. That was my
9 concern two years ago and that's my concern today.

10 Q Now, in that regard, Mr. Surace, did you have an
11 opportunity to review the report prepared by David Osborne
12 from CECO?

13 A I did.

14 Q And could you please at this time briefly comment
15 upon your analysis of the report as prepared by Mr. Osborne?

16 A In the conclusions and recommendations of the report
17 I agree with Item (a), "The structure is not in any danger
18 of collapsing under its own dead load, however, the spalled
19 concrete and small popouts could possibly fall from the
20 structure if impacted or during the freeze-thaw cycles, the
21 structure will undergo this coming winter." This is the winter,
22 I guess, that just passed.

23 Q Would that apply to any winter?

24 A That applies to all winters.

25 Q So you would agree with that conclusion made by Mr.

1 Osborne?

2 A I do.

3 Q And please proceed with your analysis of the rest
4 of the report.

5 JUDGE LOVENWIRTH: Before you go on, excuse me. Is that
6 danger now past now that we've had a thaw, or is that still
7 a danger?

8 THE WITNESS: It has me concerned. I would get to that
9 too because he does make his comment regarding the condition
10 of the deteriorated concrete.

11 JUDGE LOVENWIRTH: You will explain that to us later
12 on?

13 THE WITNESS: That's correct, Your Honor.

14 JUDGE LOVENWIRTH: Very good.

15 BY MR. WALKER:

16 Q Mr. Surace, the freeze/thaw cycles which the
17 Commission is referring to and which have been referred to
18 by Mr. Osborne, they occur yearly, do they not?

19 A That is correct.

20 Q And will this be --

21 A It's dependent upon the temperatures, the freeze/
22 thaw.

23 Q And would this be a continuing problem unless some
24 maintenance and repair is conducted on that bridge?

25 A To stop this -- the freeze/thaw cycles go on

1 irregardless of the condition of the bridge, but, depending
2 on the condition of the bridge, the deterioration of the
3 concrete, it has a significant impact on the bridge.

4 That's what Item (b) is alluding to.

5 Q Item (b) indicates that "The entire substructure
6 is severely deteriorated and in need of extensive repairs
7 to maintain its overall structural integrity."

8 A That's correct.

9 Q And do you agree with that conclusion made by Mr.
10 Osborne?

11 A That is evident and obvious as you look at the
12 structure in the field. The thing that has me concerned out
13 there too is alluded to here, and that is that there are
14 certain factors that are causing this deterioration. I feel
15 one is the freeze/thaw cycles, the age of the structure, but
16 a major concern after being in this business for all of the
17 years that I have -- it's been over 30 years. I have been
18 employed with the Pennsylvania Department of Transportation
19 as a design engineer, I've built bridges, and I was
20 responsible for the maintenance of bridges in seven counties.
21 If anybody tries to tell me that salt does not have a negative
22 impact on this particular structure, I am going to take issue
23 with that.

24 Q Is it your opinion that salt does have an impact
25 upon the structural integrity?

1 A It has a negative impact on the structure.

2 Q And in this particular instance, have you had an
3 occasion during the whole time you were involved with these
4 PUC proceedings and prior to the PUC complaint being filed,
5 did you have an occasion to inspect the area beneath the
6 bridge, the abutments and the pillars beneath that bridge?

7 A The abutments and the piers.

8 Q The piers; excuse me.

9 A Yes.

10 Q And can you tell us what you found with regard to
11 the abutments --

12 A Well, as --

13 Q -- and the piers?

14 A -- was indicated earlier in the testimony, the
15 deterioration of the substructure for a certain height from
16 the elevation of the road up is very severe. As you go up
17 further it is less severe. As you get to the top of it it's
18 less severe. That tells me something.

19 Q What does that tell you?

20 A That's telling me that not only the age of the
21 structure is deteriorating that concrete, but that certain
22 materials that are being used, primarily salt for de-icing,
23 is having an effect on that deterioration.

24 Q And did your investigation, as a professional
25 engineer, reveal the origin of that salt?

1 A Being an ex-PennDOT employee and knowing the policy
2 on de-icing, I'm familiar that the Department of Transportation
3 uses these chemicals for de-icing.

4 Q Do you know whether or not the road running under-
5 neath that bridge is a Department of Transportation road; that
6 would be Route 690, as referred to earlier.

7 A I want to just set the record straight because these
8 roads are identified differently. If you look at the location
9 map on page 1 --

10 Q Page 1 of the report?

11 A Of the report. There it shows that 690 runs in an
12 east and west direction, which is the road that goes under
13 the railroad. And 435 is practically contiguous right near
14 the bridge there. And what is happening there is, 435 being
15 a primary road, it probably is getting a higher priority as
16 far as maintenance by the Department of Transportation, and
17 what they are doing is they are using chemicals and --

18 MS. ERTEL: Your Honor, I'm going to object to this.
19 I believe this witness is qualified as an engineer on behalf
20 of the Borough of Moscow and not as to Departmental policy
21 and procedure.

22 JUDGE LOVENWIRTH: No, just because he's qualified as
23 an expert doesn't mean he can't testify as to facts. Now if
24 your objection is to his lack of knowledge of present PennDOT
25 policy, I suggest you save that for cross-examination.

1 MS. ERTEL: Thank you, Your Honor.

2 THE WITNESS: Just to set the record straight, they are
3 both PennDOT-owned roads. The Borough of Moscow does not own
4 690, and the Commonwealth of Pennsylvania or the Department
5 of Transportation owns both 435 and 690, and they are
6 responsible. Because they own the road, they are responsible
7 for maintaining those roads in the wintertime and in the summer-
8 time.

9 BY MR. WALKER:

10 Q You can continue, Mr. Surace.

11 Can you tell us, Mr. Surace, with regard to conclusions
12 3 and 4 contained on page 4 of Mr. Osborne's report, can you
13 make comment upon that for the Commission please?

14 A I have no knowledge of the precast deck panels. I
15 noticed from looking up, from the roadway up, the deterioration,
16 and the over-stressing, I'm not able to determine that
17 because I have not seen the core borings or anything that
18 could prove to me, except from a visual inspection, what is
19 going on as far as the deterioration. I've not been able to
20 see them.

21 But based on this report, I will accept that statement.

22 Q In regard to the core sampling which has proved to
23 be inconclusive, pursuant to Mr. Osborne's report, and
24 pursuant to the testimony of Mr. Osborne and Mr. Luciani, do
25 you have any comment about the core samplings, themselves,

1 and what could have been done in this particular instance?

2 A Personally, I would have probably -- I would have
3 recommended that additional tests be taken simply because we
4 would not be able to determine what we wanted to know from
5 the cores that we had. I would have recommended additional
6 cores be taken.

7 Q Would anything have prevented the City of Scranton
8 from having additional cores be taken out?

9 A I'm not able to answer that.

10 Q In regard to anticipated rail traffic in the future
11 and in regard to the type of testing that would be required
12 pursuant to Mr. Osborne's report, do you agree with that type
13 of testing, the load analysis testing and load testing which
14 would be set forth?

15 A I do agree with it, but I want to make you aware
16 of something. I just recently returned from Pittsburgh where
17 I attended a bridge conference for three days put on by the
18 American Society of Civil Engineers, and this practice of
19 load testing is becoming more common. It is my understanding
20 they recently tested a bridge this way in Russia and it
21 collapsed. They kept putting on additional weights and
22 additional weights to the point where -- I guess it's some-
23 thing when you're doing this type of thing that you need to
24 have the right type of expertise to do the testing, and also
25 to do the monitoring so that you understand the deflections

1 and what is happening to the concrete at the time of the load-
2 ing.

3 Q But is it your opinion that load testing or some
4 type of structural analysis is necessary before trains travel
5 over the track and bridge?

6 A It is accepted in the bridge industry, and I would
7 go along with that recommendation.

8 Q In regard to a substructure rehabilitation plan,
9 do you have any opinions as to the opinions and conclusions
10 set forth by Mr. Osborne that that would be needed to be
11 developed and implemented to preserve the remaining portion
12 of the substructure?

13 A I'm in total agreement with that, and I want to
14 elaborate on one other point. We need to take cores out of
15 the bridge to determine the percent of ions that is in that
16 structure and how far they are penetrated into that so we
17 are absolutely sure that we get all these chlorides out of
18 the concrete before we start doing any additional work.
19 What is happening in many instances is the people just get
20 in there and brush the concrete off and the chlorides stay
21 in there, and the chemical reaction continues after you put
22 this -- like we did up there right now, as a matter of fact;
23 that has me concerned because I don't know how much cleaning
24 and to what depth they took the concrete out before they
25 started replacing new concrete over it.

1 Q Now, when you say "as we did up there right now,"
2 are you referring to the work that Steamtown --

3 A The work that was done up there --

4 Q -- and the City of Scranton had done --

5 A The work that was done --

6 Q -- at the Moscow Borough bridge?

7 A Particularly on the piers.

8 Q Can you tell us, Mr. Surace, whether or not you have
9 an opinion as to the testimony concerning the fact that if
10 allowed to continue, that the deteriorated condition will
11 ultimately lead to a greater chance of the structural integrity
12 of the bridge being affected?

13 A Absolutely.

14 Q In the report of Mr. Osborne on page 3 it had been
15 indicated that the two sample cores which had been tested,
16 the two which had crumbled, had an average compressive strength
17 of 4,182 PSI. Does that cause concern to you, or is that
18 significant to you?

19 A No. I agree with most of the testimony regarding
20 his expertise on the strength of concrete, regarding the
21 increase over seven days, 28 days and over 50 years.
22 Theoretically, the strength of this concrete would meet the
23 design standards in the industry, whether it be a railroad
24 bride or a highway bridge.

25 JUDGE LOVENWIRTH: At 4,100 PSI?

1 THE WITNESS: At 4,182, Your Honor.

2 MR. WALKER: May I, Your Honor?

3 JUDGE LOVENWIRTH: Go ahead.

4 BY MR. WALKER:

5 Q Would you have expected the 4,182 PSI to be higher
6 in this particular bridge, given the age of the bridge?

7 A I'd have to know more about the mix before I could
8 answer that question. I don't know enough about what type
9 of mix was used for that particular structure. I'd have to
10 know that before I could answer that in a professional manner.

11 Q Is there any further comment you wanted to make
12 concerning your appraisal of the inspection report, as Mr.
13 Osborne has submitted here today?

14 A There is a concern I have, and Your Honor keeps
15 alluding to it, that there are conditions out there; right at
16 this particular time a piece of concrete could fall off that
17 structure, and also we're talking about automobiles, but there
18 are pedestrians going underneath that structure. There is
19 a sidewalk, and there are pedestrians using that, and that
20 has me concerned.

21 Q That is the spalling concrete --

22 A And we can't continue to wait for something to
23 happen, for somebody to get injured.

24 JUDGE LOVENWIRTH: Especially since the City Engineer
25 said they had no maintenance or inspection procedures.

1 BY MR. WALKER:

2 Q Now, Mr. Surace, based upon the Questions and
3 Procedures outlined by the Public Utility Commission, and which
4 we have reviewed, do you have any recommendations as to what
5 should be done at that subject crossing, based upon the
6 results of the report which Mr. Osborne has submitted, and
7 that would be in regard to both aspects, the structural
8 integrity aspect and the spalled concrete aspect of this
9 particular report.

10 A From the testimony and from what I read, I under-
11 stand the City of Scranton owns this bridge and is responsible
12 for the maintenance of the bridge. If this bridge isn't
13 maintained at a higher level than it presently is maintained,
14 I think the Borough of Moscow would have to take a good hard
15 look at the possibility of closing this down.

16 JUDGE LOVENWIRTH: Closing what down?

17 THE WITNESS: Well, stopping traffic and pedestrians
18 from going underneath it.

19 BY MR. WALKER:

20 Q And do you have any recommendations as to any other
21 steps which can be taken with regard to the maintenance and
22 repair of the bridge, itself?

23 A I think that's the responsibility of the City of
24 Scranton, to put a maintenance program together. They have
25 other structures and they are responsible for the maintenance

1 of other structures and streets, and I feel that this is their
2 responsibility, and it needs to be taken care of like any other
3 bridge that the City owns.

4 Q Mr. Surace, the Questions and Procedures, Question
5 No. 12 in particular, requested that we state whether or not
6 Moscow Borough will agree to prepare a detailed construction
7 plan for the work that we recommend be performed or any other
8 work that the Commission may determine should be done in this
9 particular instance. Do you have any opinion as to whether
10 or not Moscow Borough should prepare a detailed plan?

11 A I'll give you my personal opinion on that. I feel
12 since the Borough does not own the track and does not own the
13 road underneath that the Borough should not be responsible
14 to develop this plan.

15 Q With regard to the structural integrity of the bridge,
16 itself, has anything occurred in the last 21 months to change
17 your opinion as to the structural integrity of the bridge and
18 as to the need for further engineering analysis and study to
19 be done to determine the safety and structural integrity of
20 that bridge?

21 A As I indicated earlier to you, this report verifies
22 my concerns that I discussed earlier a year ago, in 1987
23 when I sat here and I voiced my concerns.

24 Q Thank you.

25 MR. WALKER: I have nothing further, Your Honor, at

1 this point.

2 JUDGE LOVENWIRTH: Ms. Gallo, would you like to cross-
3 examine?

4 MS. GALLO: No, I have no questions, Your Honor.

5 JUDGE LOVENWIRTH: All right, Ms. Ertel.

6 MS. ERTEL: Thank you, Your Honor.

7 CROSS-EXAMINATION

8 BY MS. ERTEL:

9 Q Mr. Surace, is it your testimony then today on
10 behalf of the Borough of Moscow that the Borough is requesting
11 that the City of Scranton be the responsible party to maintain
12 this structure? I believe --

13 A The Borough -- it has been indicated in testimony
14 and also by the Judge that the City of Scranton owns this
15 structure. The City of Scranton owns this structure.

16 Q I'm just asking --

17 A And as a result of that decision, I would say that
18 they are responsible to maintain that structure. That has
19 been the policy -- when I worked for the Department of
20 Transportation I worked for the Counties --

21 Q Mr. Surace, I'm just trying to clarify your testimony
22 on cross-examination.

23 MR. WALKER: I believe he's answering the question, Your
24 Honor.

25 JUDGE LOVENWIRTH: Yes, but the question was not what

1 was the policy of PennDOT; the question is what is the
2 present position of the Borough of Moscow?

3 MS. ERTEL: Thank you, Your Honor.

4 BY MS. ERTEL:

5 Q So, yes, it is the position of the Borough of
6 Moscow that the City of Scranton be the sole responsible
7 party to maintain this structure in the future? Yes or no.

8 A I would have to answer that as yes.

9 Q Thank you.

10 Just to clarify a couple items, you referred to the fact
11 that salt contributes to the deterioration of the concrete
12 on the structure. It isn't your testimony, is it, that salt
13 is the only deteriorating factor with respect to this bridge,
14 is it?

15 A That is correct. I'm saying there are other
16 factors besides salt. The salt is a contributing factor; that
17 is correct.

18 Q But there are other factors such as age and the
19 freeze/thaw cycles and water?

20 A Yes.

21 Q Thank you.

22 Would you agree with the testimony that was provided
23 earlier today that there is no waterproofing material that
24 was ever applied to this structure?

25 A From my field observations, I would have to agree.

1 I have not made any personal testing on this, but looking
2 up at the seepage from the superstructure, I would agree with
3 that.

4 Q And also with respect to your testimony regarding
5 the presence of salt on the structure have you performed any
6 tests to substantiate that statement?

7 A No.

8 Q You also stated that this is a State Route that
9 travels underneath this railroad overpass. Does that State
10 Route provide a benefit to the residents of the Borough of
11 Moscow?

12 A The road itself?

13 Q Yes. Is it a major thoroughfare through the Borough
14 of Moscow?

15 A Let me set the record straight, because it's a major
16 artery for the municipality. It cuts the municipality right
17 in two, if that is your question. And so a detour is going
18 to require miles to get around it. And most of our safety
19 equipment and everything else is on one side of town, the
20 ambulance services, the fire services, and it's going to have
21 a significant negative impact on the safety of that community.

22 Q In other words, this State Route does provide a
23 significant benefit to the residents of the Borough of Moscow?

24 A Access, which is a benefit.

25 JUDGE LOVENWIRTH: Are you recommending that an emergency

1 order be issued by the Commission forthwith --

2 THE WITNESS: Your Honor --

3 JUDGE LOVENWIRTH: -- directing all necessary repairs
4 to the concrete?

5 THE WITNESS: Your Honor, I'm not in a position to make
6 that decision, but my recommendation is this, that something
7 needs to be done immediately.

8 JUDGE LOVENWIRTH: I think so too. I haven't heard all
9 the evidence yet, but so far it seems that way to me.

10 BY MS. ERTEL:

11 Q And finally, Mr. Surace, with respect to your
12 testimony regarding the sidewalks that are present underneath
13 this structure, would you agree that those sidewalks benefit
14 solely the residents of the Borough of Moscow?

15 A The pedestrians who use it, yes, that's correct.

16 MS. ERTEL: That's all I have at this time, Your Honor.
17 Thank you.

18 JUDGE LOVENWIRTH: All right, Mr. Cummings, do you want
19 to cross-examine this witness first and then --

20 MR. CUMMINGS: Your Honor, I have no cross, and at
21 your pleasure I'll ask the county questions.

22 JUDGE LOVENWIRTH: We'll do that afterwards then.

23 MR. CUMMINGS: That's fine.

24 JUDGE LOVENWIRTH: All right, Ms. Smith?

25 MS. SMITH: Thank you, Your Honor.

CROSS-EXAMINATION

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BY MS. SMITH:

Q Mr. Surace, have you examined the bridge, yourself?

A Yes, I have.

Q Did you notice any stress on the bridge that could have been caused by load?

A What?

Q Rather than deterioration?

A There is cracking, and the age of the structure is my major concern.

Q Are you of the opinion that PennDOT should have no responsibility for this bridge?

A Absolutely not.

JUDGE LOVENWIRTH: I don't understand your answer.

Are you saying that it is absolutely not your opinion, or are you saying that --

THE WITNESS: I'm saying -- she asked me -- would you reword the question please? Maybe I didn't understand.

BY MS. SMITH:

Q Is it your opinion that PennDOT should have no responsibility for this bridge?

A I never said that.

Q What responsibilities do you think PennDOT should have for this bridge?

A I feel if the de-icing chemicals are affecting the

1 structure in a negative manner, the Department of Transporta-
2 tion has a responsibility.

3 Q So then can I summarize your testimony as being that
4 you think the City of Scranton and the Department of Trans-
5 portation both should have responsibility for this bridge;
6 is that an accurate representation?

7 A That's correct.

8 Q Aside from the age and deterioration of the
9 structure and the safety problems that that presents, are there
10 any other safety problems that this bridge presents such as
11 with visibility?

12 A It creates a problem with visibility. It's a
13 hazardous intersection. It's right at the intersection of
14 690 and 435, and 435 is a high volume road. School buses are
15 getting in and out of there.

16 Q If this crossing were to be abolished and the road-
17 way sloped back, would that improve the visibility?

18 A It would. That would improve it. Eliminating the
19 structure and flattening out the slopes, that would improve
20 the conditions out there.

21 Q Would it be your recommendation at this time that
22 an order be issued from the Commission to eliminate the
23 pedestrian traffic underneath this bridge?

24 A No, I'm having the Police Department up there keep
25 a constant eye on what's happening under that structure, and,

1 based on their reports, we will make that decision. Right
2 at the present time I don't see a need to close it down to
3 pedestrian traffic. Our Police Department is looking at this
4 periodically.

5 Q Would it be your opinion that the bridge should
6 definitely be closed to rail traffic?

7 A The bridge closed? Absolutely. No rail traffic
8 should go over this bridge until we find out what the
9 safe loading of that structure is.

10 MS. SMITH: I have no further questions of this witness.

11 MS. GALLO: Your Honor, I have a few questions, if I
12 may.

13 JUDGE LOVENWIRTH: Very good, Ms. Gallo.

14 CROSS-EXAMINATION

15 BY MS. GALLO:

16 Q Mr. Surace, you just stated that you see no need
17 to close down the sidewalks to pedestrian traffic underneath
18 the bridge?

19 A As of today.

20 Q As of today. But you you stated that you feel that
21 there should be immediate action taken by the Commission?

22 A There needs to be immediate action taken. We have
23 been sitting around and talking about this for a couple of
24 years now, and the condition keeps getting worse. That's what
25 I'm saying.

1 Q But yet the Moscow Borough does not see fit to close
2 down the sidewalks to pedestrian traffic at this time?

3 A Not at this particular time.

4 Q Mr. Surace, are you familiar with the Steamtown
5 rail line and the National Park Service's plans for that rail?

6 A To a limited degree, yes, I am.

7 Q And you just stated that you felt that it might be
8 in the best interests for the structure to be eliminated
9 altogether?

10 A I didn't say that. She asked me if it would be a
11 safer condition.

12 Q And your answer to that was?

13 A My answer to that was yes. The way she outlined
14 it, it would make it a safer condition, for the sight
15 distance. For the sight distance; this is what she indicated.

16 Q Do you know what effect that would have on the
17 National Park Service's plans for excursions to Moscow Station?

18 A Very detrimental effect.

19 MS. GALLO: I have no further questions.

20 JUDGE LOVENWIRTH: Any redirect?

21 MR. WALKER: Very little, Your Honor.

22 REDIRECT EXAMINATION

23 BY MR. WALKER:

24 Q Dominic, you indicated that at this time there is
25 no present need to close down the sidewalk to pedestrians.

1 Could you tell this Court whether or not there would be any
2 other access for pedestrians from one side of town to the other
3 in Moscow Borough if that were, indeed, closed down?

4 A I don't know of any other way of getting through
5 there except walking up over across the railroad crossing and
6 over the tracks.

7 Q Over the tracks, themselves?

8 A That's correct. I don't know of any other way.

9 Q And you had indicated to the Administrative Law
10 Judge here today that one side of town and emergency services
11 on that side of town would be effectively closed off to the
12 other; is that correct?

13 A That's correct.

14 Q Now, can you indicate to us whether or not it would
15 only be one side of Moscow Borough, or whether or not the
16 other areas of the North Pocono region would be affected as
17 far as emergency services are concerned?

18 MS. GALLO: Your Honor, I would object to this
19 testimony as repetitive. All this was explored at the last
20 hearing in depth in May of 1987.

21 MR. WALKER: It was brought up -- go ahead, Your Honor.

22 JUDGE LOVENWIRTH: To be honest with you, I asked for
23 a transcript and they didn't send me one, so I don't know if
24 it was or not.

25 Does everybody agree that this is repetitive, because

1 if it is I'll sustain the objection.

2 MR. WALKER: It's repetitive, but it was brought out
3 in terms of whether or not this only benefits residents of
4 Moscow, and I'm asking the limited question and the limited
5 inquiry to show that it is for the benefit of other areas
6 besides Moscow, very briefly.

7 JUDGE LOVENWIRTH: All right, as a precautionary
8 measure, I'll overrule the objection.

9 MR. WALKER: After he answers that we'll move on to
10 another question.

11 THE WITNESS: Well, yes, because of the fact that the
12 North Pocono School District services many communities
13 up in the area, and there are adjacent municipalities and
14 townships that have access for emergency equipment and the
15 school buses over 690. If you look at the map, it comes out
16 very loud and clear. North and south 435 is your artery.
17 East and west 690 is your main artery.

18 BY MR. WALKER:

19 Q And that's this intersection here?

20 A That's the road we're talking about. It's very
21 obvious.

22 Q And that map you referred to is contained in Mr.
23 Osborne's report?

24 A That's correct.

25 Q Mr. Surace, can you tell us whether or not you feel

1 that the salt which was referred to is a significant cause
2 of the problem?

3 JUDGE LOVENWIRTH: "Cause" again, c-a-u-s-e.

4 MR. WALKER: Cause, yes, Your Honor. That's my
5 Pennsylvania accent.

6 THE WITNESS: That is my personal opinion from my
7 previous experience. However, I would like to have it
8 verified by taking further cores out of there and have it
9 verified so we all know exactly what is going on in that
10 concrete.

11 BY MR. WALKER:

12 Q Did your investigation in this case reveal whether
13 or not vehicles striking the abutments or piers had any
14 cause?

15 A There's indications of vehicles hitting that
16 structure, both underneath it and the piers.

17 Q In your experience as a professional engineer, can
18 you tell us whether or not you feel that testing was needed
19 to confirm that salt was one of the problems regarding the
20 piers and abutments in this case?

21 A You have got to word that again.

22 Q All right. On cross-examination counsel for the
23 Pennsylvania Department of Transportation asked you whether
24 or not testing was done to confirm that salt affected the
25 piers and abutments in this case; do you recall that question?

1 A That's correct; I recall the question.

2 Q In your capacity as a professional engineer, do you
3 feel that that was necessary for you to make the opinion that
4 salt was a contributing factor?

5 A No, but I felt that it could have been done as a
6 part of this report.

7 Q Is there anything further that you want to add to
8 this?

9 A I don't think so.

10 MR. WALKER: I have nothing further, Your Honor.

11 JUDGE LOVENWIRTH: Mr. Cummings, do you want to examine
12 this witness on behalf of the County of Lackawanna?

13 MR. CUMMINGS: Yes, thank you, Your Honor.

14 DIRECT EXAMINATION

15 BY MR. CUMMINGS:

16 Q Mr. Surace, you are employed by the County of
17 Lackawanna?

18 A Yes, I am.

19 Q In what capacity?

20 A As Lackawanna County Engineer.

21 Q You have had a chance to review the report submitted
22 as Scranton Exhibit No. 1. Would you please give us your
23 appraisal of Mr. Osborne's report?

24 A If you want me to reiterate what I just did for the
25 Borough of Moscow, I have a major concern not only for the

1 fact of trains in the future running over this structure, but
2 I also have an immediate concern for what is happening
3 presently with this structure regarding pedestrians who are
4 walking underneath it and vehicles who are using it. So there
5 are two concerns I have. The first concern is as to the
6 deterioration that is taking place in the concrete could have
7 -- from a safety standpoint, it could have an immediate impact
8 upon the safety of the vehicles using it and the pedestrians.
9 And the other concern I have is prior to any trains using this
10 bridge that the load carrying capacity be determined.

11 Q Thank you.

12 Mr. Surace, would the County of Lackawanna agree to
13 prepare construction plans for any of the work recommended
14 to be performed or any other work the Commission may determine
15 must be completed?

16 A Like I indicated earlier, the County of Lackawanna
17 does not own the structure and I don't feel the County of
18 Lackawanna should be responsible for developing these plans.

19 Q Well, then carrying it one step forward, would the
20 County of Lackawanna agree to perform any of the actual
21 construction work as recommended or as ordered by the Commis-
22 sion?

23 A I feel the same way about any construction work.
24 They should not participate in those costs.

25 Q Thank you, Mr Surace.

1 MR. CUMMINGS: That's all I have, Your Honor.

2 JUDGE LOVENWIRTH: Ms. Ertel?

3 MS. ERTEL: Thank you, Your Honor.

4 CROSS-EXAMINATION

5 BY MS. ERTEL:

6 Q Mr. Surace, you said you did personally view this
7 structure?

8 A Numerous times.

9 Q Is it your expert testimony that concrete is at the
10 present time at risk of falling onto the highway below?

11 A That is correct.

12 Q Does the Borough of Moscow have an interest in
13 also participating in the removal of the concrete to prevent
14 such falling onto the highway below?

15 A They do not own that structure and they don't
16 receive any Liquid Fuels money.

17 Q I'm asking whether the Borough has an interest in
18 --

19 A Based on that, I would recommend to the Borough
20 that they would not participate.

21 Q And would the County of Lackawanna have an interest?

22 A Based on the same theory, the County does not
23 receive any Liquid Fuels taxes or any moneys to maintain that
24 road out there, so, therefore, I would recommend to the County
25 not to participate.

1 MS. ERTEL: That's all I have, Your Honor.

2 JUDGE LOVENWIRTH: Do you want to cross-examine him,
3 Mr. Walker, concerning his testimony as a County witness?

4 MR. WALKER: No, Your Honor.

5 THE WITNESS: Your Honor, there is one other statement
6 I wanted to make, if I could have the opportunity, as to why
7 I'm concerned. Mr. Osborne indicates about these pop-outs.
8 There were pop-outs that occurred at this bridge where pieces
9 fell out that were four or five pounds, and this big in size
10 (indicating). If it hits -- and we have evidence of that,
11 and there's a lot of people in this room who know about that.
12 And that's my concern, the immediate concern I have. We do
13 not know when that pop-out is going to happen.

14 JUDGE LOVENWIRTH: Then how can you say that you don't
15 think the sidewalk should be closed? I thought Ms. Gallo's
16 question was a good one. Why shouldn't the sidewalks be
17 closed? The Police Department, who you say are having a look
18 at it and giving you a report, they are not engineers. And
19 now you just got through saying even a visual inspection won't
20 tell you because you never know when they are going to pop
21 out. Why shouldn't the sidewalks be closed pending the
22 repairs? What's the Police report going to tell you?

23 THE WITNESS: Let me tell you what the Police -- you
24 bring up a very interesting point, and it's something we have
25 to sit down and discuss. But the Police report is telling

1 us if they see any evidence of pieces of concrete falling down
2 on the sidewalk area.

3 JUDGE LOVENWIRTH: All right, Ms. Gallo.

4 CROSS-EXAMINATION

5 BY MS. GALLO:

6 Q Mr. Surace, these pop-outs that you are talking
7 about, the last ones, when did they occur?

8 A To the best of my knowledge, it was about a year
9 ago.

10 Q Was it after the cosmetic repairs were done?

11 A It was right after the winter. There was a piece
12 fell out at the top of the concrete on this side, and I
13 don't know whether it was from being hit or what, but a piece
14 fell out from the fascia of the structure.

15 Q Wasn't that when it was later determined that an
16 18-wheeler semi or some large truck went under and knocked
17 it off, and at first there was concern about it just being
18 from the weather?

19 A I don't know. All I know is there was a piece of
20 concrete, a significant piece of concrete down on the roadway
21 that was picked up.

22 Q And you don't know whether it was the back end of
23 the flatbed that knocked it off, that that was later determined?

24 A I really don't know that.

25 Q How about prior to that; was there anything else

1 prior, or were all these pop-outs prior to the cosmetic
2 rehabilitation?

3 A The ones that I've alluded to were prior to the work
4 that was done.

5 MS. GALLO: I have no further questions.

6 JUDGE LOVENWIRTH: Ms. Smith?

7 MS. SMITH: I have no questions, Your Honor.

8 JUDGE LOVENWIRTH: Is there anything else of Mr. Surace?

9 (No response.)

10 JUDGE LOVENWIRTH: All right, thank you very much, sir.
11 You may step down.

12 (Witness excused.)

13 MR. WALKER: William Heim, Your Honor.

14 JUDGE LOVENWIRTH: Do you have another witness for the
15 Borough of Moscow?

16 MR. WALKER: Yes, Your Honor.

17 JUDGE LOVENWIRTH: Good afternoon, Mr. Heim.

18 MR. HEIM: Good afternoon.

19 JUDGE LOVENWIRTH: Please place your right hand on the
20 Bible.

21 Whereupon,

22 WILLIAM HEIM

23 having been duly sworn, testified as follows:

24 JUDGE LOVENWIRTH: What is your name, and spell your
25 name for the record.

1 THE WITNESS: Heim, H-e-i-m.

2 JUDGE LOVENWIRTH: Mr. Heim, what's your first name?

3 THE WITNESS: William.

4 JUDGE LOVENWIRTH: Thank you, sir.

5 All right, Mr. Walker.

6 MR. WALKER: Thank you, Your Honor.

7 DIRECT EXAMINATION

8 BY MR. WALKER:

9 Q Mr. Heim, you are a member of Moscow Borough
10 Council; is that correct?

11 A Yes, I am.

12 Q And as a member of Moscow Borough Council, do you
13 have a particular affinity or a particualr relationship to
14 this bridge?

15 A Yes, I'm the Chairman of the Health and Safety
16 Committee for the Council.

17 Q And have you been the person who has been
18 responsible for the matter of the Moscow Borough Council versus
19 the various other entities here before the Public Utility
20 Commission?

21 A Yes, I have.

22 Q You have testified here before, haven't you?

23 A Yes, I have.

24 Q And did I provide you, Mr. Heim, with a copy of the
25 Questions and Procedures for purposes of today's continued

1 hearing in this matter?

2 A Yes, you did.

3 Q By the way, did you have an opportunity to review
4 the in-depth inspection report prepared by CECO Associates?

5 A Yes, I did.

6 Q So you are familiar with its contents?

7 A Yes, I am.

8 Q Now, Mr. Heim, can you tell me whether or not the
9 Moscow Borough will agree to perform the actual construction
10 of any work that the Commission may determine should be done
11 as they deem necessary?

12 A The position of the Borough is we are not responsible
13 for the bridge in any way because we do not own it nor any
14 of the roadways that pass near it or underneath it. We are
15 in this action because it resides in our Borough.

16 Q Mr. Heim, can you tell us whether or not you have
17 discussed this with Council at Council meetings and whether
18 or not this is the official position by the Moscow Borough
19 Council?

20 A It is the official position of the Borough of Moscow.

21 Q And, Mr. Heim, can you tell me whether or not it
22 would be feasible to close down the sidewalk to pedestrians
23 at this time in Moscow Borough?

24 A No, because it's the only access, the only
25 pedestrian access between the two sides of town.

1 Q And as a member of Council, have you also instructed
2 the Borough policemen to inspect that as often as possible?

3 A He's through a number of times each day and it's
4 been checked constantly.

5 MR. WALKER: Your Honor, I believe that's all we have
6 with Mr. Heim. If there is anything else the Commission would
7 like us to address pursuant to the query or Questions and
8 Procedures, we will, but I believe we have answered all the
9 questions necessary.

10 JUDGE LOVENWIRTH: Ms. Gallo?

11 MS. GALLO: I have no questions.

12 JUDGE LOVENWIRTH: Mr. Cummings?

13 MR. CUMMINGS: No questions, Your Honor.

14 JUDGE LOVENWIRTH: Ms. Ertel?

15 MS. ERTEL: No questions, Your Honor.

16 JUDGE LOVENWIRTH: Ms. Smith?

17 MS. SMITH: No questions, Your Honor.

18 JUDGE LOVENWIRTH: All right, thank you very much, Mr.
19 Heim. It was nice to have you with us, sir.

20 (Witness excused.)

21 JUDGE LOVENWIRTH: All right, Ms. Ertel, I think it's
22 your turn.

23 MS. ERTEL: Thank you, Your Honor. At this time I call
24 Milton Davis to the stand.

25 JUDGE LOVENWIRTH: Good afternoon, Mr. Davis. It's nice

1 to have you with us, sir.

2 MR. DAVIS: Thank you, sir.

3 JUDGE LOVENWIRTH: Spell your name for the record
4 please.

5 MR. DAVIS: Milton H. Davis.

6 JUDGE LOVENWIRTH: Please place your right hand on the
7 Bible.

8 Whereupon,

9 MILTON H. DAVIS

10 having been duly sworn, testified as follows:

11 JUDGE LOVENWIRTH: You may be seated.

12 Very good. Ms. Ertel.

13 MS. ERTEL: Thank you, Your Honor.

14 DIRECT EXAMINATION

15 BY MS. ERTEL:

16 Q By whom are you employed, Mr. Davis?

17 A Pennsylvania Department of Transportation.

18 Q And what is your position with the Department?

19 A Grade crossing engineer.

20 Q Are you a Registered Professional Engineer in the
21 Commonwealth of Pennsylvania?

22 A Yes, I am.

23 Q And how long have you held that position with the
24 Department of Transportation?

25 A Since 1962; 26 years.

1 Q Mr. Davis, are you familiar with the --

2 JUDGE LOVENWIRTH: I guess you can't hold down a
3 steady job. Who used to say that? Do you remember who used
4 to say that?

5 THE WITNESS: No.

6 JUDGE LOVENWIRTH: Mr. Zahn used to say that.

7 THE WITNESS: Mr. Zahn, he's doing well too.

8 JUDGE LOVENWIRTH: Good.

9 BY MS. ERTEL:

10 Q Mr. Davis, are you familiar with the Questions
11 and Procedures as promulgated by the Pennsylvania Public
12 Utility Commission for today's proceeding?

13 A Yes, I am.

14 Q Are you authorized to testify on behalf of the
15 Pennsylvania Department of Transportation in response to those
16 questions?

17 A Yes, I am.

18 Q I then invite your attention to Question No. 14 as
19 promulgated by the Commission, and I ask you, Mr. Davis: does
20 the inspection report prepared by the City of Scranton provide
21 an in-depth description of the load carrying capacity of the
22 subject structure?

23 A No, it does not. The report primarily describes
24 the structure from a cosmetic analysis rather than a
25 structural analysis.

1 Q Is that of concern to you, Mr. Davis, that there
2 is not a load carrying capacity analysis in that report?

3 A Yes.

4 Q I invite your attention to Question No. 15 as
5 promulgated by the Commission. Would you please state what
6 the Department recommends be done at the subject crossing,
7 based on the results of the above referenced report?

8 A Based on the report, the Department concurs with
9 the City's recommendation that a more in-depth structural
10 inspection would have to be performed before the load carrying
11 capacity of the structure could be determined. However, the
12 roadway geometry and the sight distances as provided by the
13 existing railroad bridge are substandard by today's criteria.

14 Q I invite your attention to Question No. 16, and ask
15 whether the Department will agree to prepare construction
16 plans for the work recommended to be performed or any other
17 work that the Commission may determine should be performed
18 at this crossing?

19 A At this time the Department is not willing to prepare
20 construction plans or perform work to remove or replace the
21 subject structure.

22 Q Mr. Davis, does the Department of Transportation
23 agree to maintain the structure, and what are your reasons
24 therefor?

25 A The Department does not agree to maintain the

1 structure. This is not our structure; it is a structure that
2 is a railroad structure and, as such, should be maintained
3 by the railroad entity that is responsible for it, that owns
4 it.

5 Q Has the Department ever been assigned or assumed
6 maintenance responsibility for the structure in the past?

7 A No we have not.

8 Q And is it your understanding that the City of
9 Scranton is the responsible party for this structure currently?

10 A Yes, it is. I also have talked to an attorney that
11 represents, or at least was, I think, representing the
12 National -- the Themetown Foundation, and he inferred to me,
13 as I think has been testified to here by the City, that very
14 soon the National Park Service will take over the rail line
15 and definitely take over the structure.

16 Q Finally, Mr. Davis, does the Department -- in
17 response to Question No. 17 -- does the Department agree to
18 perform any of the actual construction work that may be
19 determined to be needed at this particular crossing?

20 A No, the Department does not because it is not our
21 structure.

22 Q Thank you, Mr. Davis.

23 MS. ERTEL: Your Honor, this witness is now available
24 for cross-examination.

25 JUDGE LOVENWIRTH: Ms. Gallo?

CROSS-EXAMINATION

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BY MS. GALLO:

Q Mr. Davis, are you familiar with the Moscow bridge in that you have personally viewed the bridge?

A Yes, I have.

Q And did you notice any deterioration along the bottom of the pillars of this bridge?

A Yes, I have.

Q And, in your opinion, was that deterioration caused by the salt used by PennDOT?

A No.

MS. ERTEL: Your Honor, this is outside the scope of the direct examination, and I would enter an objection at this time.

JUDGE LOVENWIRTH: I agree that it's somewhat outside of the scope of direct, on the one hand; on the other hand, the witness testified that PennDOT wouldn't agree to bear financial responsibility for maintenance or for the cost of repairs, or for the cost of drawing up plans, because it wasn't PennDOT's structure. So I think this is proper cross-examination. If in fact the maintenance of the roads has caused some of the deterioration of the structure, then I think it is proper to tax Mr. Davis' -- or attempt to -- testimony as to PennDOT's responsibility for maintenance and so on, so I overrule the objection.

1 MS. GALLO: Thank you, Your Honor.

2 BY MS. GALLO:

3 Q Would you answer the question, Mr. Davis?

4 A The question was does the Department of Transporta-
5 tion, are we of the opinion that salt contributed to the
6 spalling of the concrete; is that the question?

7 Q Yes.

8 A And my answer to that is no. What is causing the
9 spalling of the concrete is the freeze/thaw.

10 JUDGE LOVENWIRTH: Is the what?

11 THE WITNESS: The freeze/thaw. The freeze/thaw cycles.
12 It is the water getting in there and freezing. It gets to
13 about a four degree point, and that's when it expands. And
14 that is what's causing this concrete to bust off.

15 BY MS. GALLO:

16 Q In your opinion, that's the sole cause of the
17 spalling and that salt used on the roadway to de-ice the
18 roadway does not affect the concrete at all?

19 A That's correct. The biggest problem with salt is
20 that it gets to the steel and it causes the steel to expand
21 and it breaks the concrete away from the steel. That's what
22 it is. From what I understand, the footings of the piers do
23 have reinforcing in them, and if that's -- I didn't look at
24 the piers in depth to determine if the steel was exposed, but
25 if it isn't exposed then it is simply from the freeze/thaw

1 cycle that is breaking away the concrete.

2 Q So then, in fact, you don't really know whether the
3 salt has affected the steel on the bridge.

4 A I just know that the freeze/thaw is what is causing
5 this concrete to spall away.

6 Q But you don't know if that's the only cause --

7 MS. ERTEL: Your Honor, I believe the witness has
8 been asked and has answered this question.

9 JUDGE LOVENWIRTH: It's cross-examination. I'll allow
10 a little more leeway, not much.

11 MS. GALLO: Thank you, Your Honor.

12 JUDGE LOVENWIRTH: The question was: but you don't know
13 that the freeze/thaw is the sole cause of the spalling?
14 That was the question. Do you agree with that assertion, that
15 you don't know whether freeze/thawing is the sole cause of
16 the spalling?

17 THE WITNESS: That is the sole cause of the spalling,
18 the freeze/thaw cycle that the concrete goes through. As
19 Mr. Luciani said, it is permeable. Water gets inside of it
20 and it actually expands and breaks the concrete away.

21 BY MS. GALLO:

22 Q But I asked you if the salt affected the bridge in
23 any manner, and your answer was no; is that correct?

24 A That's correct.

25 Q And yet you just said that you did not have the

1 opportunity or you did not go up and see whether there was
2 any steel exposed, and that that would be a way of determining
3 whether the salt had affected the bridge; is that correct?

4 A If it had attacked -- if it had reached the steel
5 and had caused the steel to expand, that would have caused
6 the concrete to break away.

7 Q And has that happened at the Moscow bridge?

8 A I don't know.

9 MS. GALLO: I have no further questions.

10 JUDGE LOVENWIRTH: All right, Mr. Cummings?

11 MR. CUMMINGS: No questions, Your Honor.

12 JUDGE LOVENWIRTH: Mr. Walker?

13 MR. WALKER: Yes, I have several, Your Honor.

14 CROSS-EXAMINATION

15 BY MR. WALKER:

16 Q Mr. Davis, you indicated that you are, indeed,
17 employed by the Department of Transportation; is that correct?

18 A That's correct; that's why I'm here.

19 Q Now, as an employee for the Department of Trans-
20 portation, do you know whether or not the Commonwealth of
21 Pennsylvania Department of Transportation receives Liquid
22 Fuels Tax moneys for State Route 690 and State Route 435?

23 MS. ERTEL: Objection, Your Honor. It's outside the
24 scope of the direct examination.

25 MR. WALKER: Again, Your Honor, as the Court had

1 pointed out earlier on a similar objection, they have denied
2 any responsibility or any requirement to fund --

3 JUDGE LOVENWIRTH: I know. I understand that, but
4 there is a Commonwealth Court ruling decision about four years
5 old that says that a municipality's ability or inability to
6 pay for this sort of thing is not germane; it is not a proper
7 question. I'll sustain the objection.

8 MR. WALKER: Thank you, Your Honor.

9 BY MR. WALKER:

10 Q Can you tell me whether or not, Mr. Davis, the
11 Pennsylvania Department of Transportation maintains both
12 Route 435 and Route 690?

13 A Yes, it does.

14 Q Does that maintenance include the use of salts to
15 de-ice the roads for purposes of winter maintenance?

16 A Yes, it does.

17 Q And can you tell me during the course of a winter
18 how often that is done, if you can answer that?

19 A No, I can't.

20 Q Is it done on an as-needed basis or on a daily basis?

21 A On an as-needed basis.

22 Q And is it your position as a professional engineer
23 that salt has no effect on concrete?

24 A That's correct.

25 Q Is it your position as a professional engineer that

1 salt does not cause spalling and cracking of concrete?

2 A The concrete, itself, no. No, it does not.

3 Q So that, as testified to earlier, it is your
4 position that in this case the salt which has been referred
5 to on the roadway on Route 690 and which has appeared
6 visually on the abutments and piers of this bridge has no cause
7 on the spalling and the cracking in this particular case?

8 A No, it doesn't. It's the freezing and thawing of
9 the water that causes the concrete to spall away.

10 Q And upon what do you base that professional opinion,
11 Mr. Davis?

12 A Experience.

13 Q And do you base that professional opinion upon any
14 testing which you have done in this particular instance?

15 A No. I have been at several hearings and I've been
16 in several situations where I've been caused to make that
17 answer repeatedly, and that's my experience.

18 Q Mr. Davis, would it be fair to state that one such
19 setting was on May 14, 1987 wherein a hearing was held on this
20 particular matter and where numerous references were made to
21 ice occurring and salt being used to de-ice the road under
22 that bridge; is that one of the instances where you testified?

23 A I was here and I testified.

24 Q Do you recall numerous references to --

25 A No.

1 Q -- salt being used to de-ice the roads?

2 A No, I don't.

3 Q That wasn't brought up at that hearing?

4 A It might have been. I don't recall.

5 JUDGE LOVENWIRTH: He says he doesn't recall. If you
6 want to refresh his memory, show him the transcript.

7 MR. WALKER: I'll go on to something else, Your Honor.

8 BY MR. WALKER:

9 Q Now, you testified that the salt would have an
10 effect upon concrete within a structure in that it would
11 break away from the steel within the structure.

12 A That is correct.

13 Q And would that be within the interior of the
14 structure of the bridge?

15 A Yes.

16 Q And can you tell us what the steel is used for in
17 a bridge, itself?

18 A Reinforcing.

19 Q And reinforcing would be the reinforcement of the
20 structural integrity of the bridge?

21 A That's correct.

22 Q So would it be fair to say that if concrete were
23 breaking away from the steel on the interior of the bridge
24 that that would affect the structural integrity?

25 A Yes.

1 Q So then would it be fair to say that salt would have
2 some effect on the structural integrity of the bridge?

3 A Yes.

4 Q Is it chloride ionization testing; is that the term
5 that has been used today?

6 A That's correct.

7 Q You didn't conduct that type of testing?

8 A No, I didn't.

9 Q If that type of testing was conducted by the
10 Pennsylvania Department of Transportation, would that be able
11 to tell us whether or not salt would be a factor in regard
12 to its effect on the structural integrity of this particular
13 bridge?

14 A Yes, it would.

15 Q As an employee of the Pennsylvania Department of
16 Transportation, are you familiar with the responsibilities
17 of the Department of Transportation in regard to the
18 providing of access routes?

19 A In what manner?

20 Q Well, in general, does the Commonwealth of Pennsyl-
21 vania Department of Transportation have a responsibility to
22 maintain access routes such as Route 435 and Route 690?

23 A Yes.

24 Q And do you have the responsibility to keep those
25 access routes open?

1 A Yes.

2 Q Are you familiar with the specific access routes
3 in question, Mr. Davis, Route 690 and Route 435?

4 A Yes.

5 Q And are you familiar with the areas surrounding the
6 particular bridge in question?

7 A Generally, yes.

8 Q Would it be fair to say that there are various
9 municipalities which lead even into the Poconos which are
10 serviced by those access routes?

11 A Yes.

12 Q So that if those access routes were cut off would
13 it be fair to say that many municipalities would be cut off,
14 not only Moscow Borough?

15 A That's correct.

16 Q Have you had an opportunity to review, as a profes-
17 sional engineer, this particular bridge since the date of the
18 last hearing?

19 A No.

20 Q You didn't even see the bridge since the date of
21 the last hearing?

22 A No.

23 Q Did you see the bridge prior to the last hearing?

24 A Yes, at the field conference.

25 Q The field conference was February 3rd -- and I believe

1 it was '87?

2 A I don't remember the date.

3 Q But as you sit here today, you can't tell us anything
4 about the face of the bridge, itself, whether or not there
5 is any spalling concrete and whether or not there is any
6 falling concrete or debris from the bridge?

7 A When I was at that last field conference I saw
8 spalling.

9 Q But since the date of the last hearing?

10 A No.

11 Q Do you recall testifying at the last hearing and
12 indicating that it was your conclusion that an engineering
13 study and analysis was not required to determine the
14 structural integrity of the bridge?

15 A That's correct.

16 Q And do you recall testifying that you didn't have
17 any specific factors upon which you based that opinion; you
18 just felt that Mr. Surace was wrong in saying that a study
19 and analysis was needed?

20 A That's correct.

21 Q Now as we sit here today, is it still your opinion
22 that further analysis and testing is not necessary?

23 A I think that to comply with the Commission's order
24 there needs to be further testing taken. I think the testing
25 probably would be more cores taken at the locations of

1 importance.

2 Q Outside of the Commission's order and in reviewing
3 Mr. Osborne's report in terms of the safety factors, would
4 it still be your professional opinion that further testing
5 would be necessary, even if not ordered by the Commission?

6 A Would you re-ask that question?

7 Q I will rephrase it. I'm sorry.

8 The Commission had entered an order directing that
9 testing be done in this particular instance after the last
10 hearing; is that correct?

11 A That's correct.

12 Q And at the time of the last hearing you didn't
13 feel that any further testing and analysis was necessary.

14 A That's correct.

15 Q But now after reviewing Mr. Osborne's report do you
16 agree with the conclusions, the professional conclusions in
17 his report?

18 A To the degree of -- as I said, all he did was review
19 it cosmetically; you know, visually, and he did not do a
20 structural load testing on the structure. And we are of the
21 opinion that that should be done.

22 Q It should be done?

23 A Yes.

24 Q How would you have done the report?

25 A How would I have done the report?

1 Q Yes. What would you have done in this particular
2 instance.

3 A The Department of Transportation would have done
4 the same thing.

5 Q The same thing that Mr. Osborne did?

6 A Except we would have included a load carrying
7 capacity analysis of the structure.

8 MR. WALKER: I have nothing further at this time, Your
9 Honor.

10 JUDGE LOVENWIRTH: Ms. Smith?

11 MS. SMITH: Thank you, Your Honor.

12 CROSS-EXAMINATION

13 BY MS. SMITH:

14 Q Mr. Davis, do you have any knowledge as to whether
15 or not this bridge is on the Commonwealth's Bridge Bill?

16 A Yes, I do.

17 Q Would you please tell us what you know about that?

18 A I know that it is not on the Bridge Bill right now.

19 Q Do you know if there are any funds available either
20 from State or Federal sources for a project on this bridge?

21 A That is correct; there is not.

22 Q Do you have an opinion as to whether or not this
23 bridge should be replaced, rehabilitated or removed, based
24 on the information you have right now?

25 A No, I do not.

1 Q You do not have an opinion?

2 A I do not have an opinion.

3 JUDGE LOVENWIRTH: Based upon the information before
4 you.

5 THE WITNESS: That is correct.

6 BY MS. SMITH:

7 Q In your years of experience with the Department of
8 Transportation I'm sure you have encountered a great many bridge
9 projects. Could you give us just a cursory idea of the length
10 of time involved in a project from the time the Commission
11 issues an order until the time a project would be completed?
12 We've done a lot of talking here today about "immediate," and
13 I'm just trying to put this into focus so we have a better
14 idea of what we're talking about.

15 A Well, in the first place, the Commission would have
16 to issue an order ordering something done before we could even
17 begin to think about it. The funding has to be provided, and
18 we have no funding at this point in time provided.

19 JUDGE LOVENWIRTH: To do what?

20 THE WITNESS: To do anything with this project.

21 BY MS. SMITH:

22 Q I'm looking for something in terms of time. How much
23 time does the average bridge project take? In your experience,
24 have bridge projects taken six months, two years --

25 A If we were just to remove the structure it would

1 take, from the moment that we could have funding set up the
2 Department of Transportation would need 24 months to actually
3 have the structure removed.

4 If we were going to have it replaced it would take 42
5 months.

6 Q What about rehabilitation projects; how long do they
7 generally take?

8 A Somewhere in-between that. It would depend upon
9 the extent of the rehabilitation.

10 Q Thank you.

11 MS. SMITH: I have no further questions, Your Honor.

12 JUDGE LOVENWIRTH: Any redirect?

13 MS. ERTEL: No redirect, Your Honor.

14 JUDGE LOVENWIRTH: Mr. Davis, do you have an opinion
15 as to what it would cost to take remedial measures so as to
16 eliminate the hazard caused by spalling concrete and pop-outs?

17 THE WITNESS: No, I don't, sir. No, I don't.

18 JUDGE LOVENWIRTH: Do you agree that there is a present
19 danger, based upon the report that you have read and based
20 upon your inspection of the structure in 1987?

21 THE WITNESS: Do I believe -- if I understand it, do
22 I believe that we should --

23 JUDGE LOVENWIRTH: Do you believe that there is a present
24 danger to the public caused by spalling concrete and pop-outs
25 of the concrete?

1 THE WITNESS: No, I don't.

2 JUDGE LOVENWIRTH: You don't believe there is a danger
3 to the public?

4 THE WITNESS: No, I do not.

5 JUDGE LOVENWIRTH: And why do you think there is none?

6 THE WITNESS: Because I haven't seen the structure, as
7 I said, since 1987. If there is any loose concrete about to
8 come off or any broken away where it no longer really
9 contributes to the structural integrity of the bridge, I don't
10 know why someone doesn't remove it.

11 JUDGE LOVENWIRTH: So your answer would be that you don't
12 know whether there is a danger because you haven't seen the
13 bridge for two years?

14 THE WITNESS: That's correct, sir.

15 JUDGE LOVENWIRTH: All right. Thank you.

16 (Witness excused.)

17 JUDGE LOVENWIRTH: All right, Ms. Smith, do you have
18 a witness you want to call?

19 MS. SMITH: Yes, Your Honor. Thank you. I would like
20 to call Mr. Donald Fleisher.

21 JUDGE LOVENWIRTH: Good afternoon, Mr. Fleisher.

22 Maybe we should take a break now. We will take a 15
23 minute break.

24 (Recess.)

25 JUDGE LOVENWIRTH: Back on the record.

1 Mr. Fleisher, please place your right hand on the Bible.

2 Whereupon,

3 DONALD R. FLEISHER

4 having been duly sworn, testified as follows:

5 JUDGE LOVENWIRTH: What is our full name for the record?

6 THE WITNESS: Donald R. Fleisher, F-l-e-i-s-h-e-r.

7 JUDGE LOVENWIRTH: Ms. Smith.

8 MS. SMITH: Thank you, Your honor.

9 DIRECT EXAMINATION

10 BY MS. SMITH:

11 Q Mr. Fleisher, would you please state your employer
12 and your business address for the record?

13 A Pennsylvania Public Utility Commission, P.O. Box
14 3265, Harrisburg, PA 17120.

15 Q What is your position with the Public Utility
16 Commission?

17 A I'm a Staff Engineer in the Rail Safety Division
18 of the Bureau of Safety and Compliance.

19 Q And how long have you held that position?

20 A Approximately twelve years.

21 Q Are you a professional engineer?

22 A Yes, I am.

23 Q And prior to your experience with the Commission
24 what was your occupation?

25 A I was a professional engineer in private practice.

1 MS. SMITH: I would submit that Mr. Fleisher is a
2 expert --

3 JUDGE LOVENWIRTH: Is there any objection to Mr.
4 Fleisher being examined in his capacity as an expert?

5 MS. ERTEL: No.

6 JUDGE LOVENWIRTH: There being none, the witness is
7 qualified.

8 MS. SMITH: Thank you, Your Honor.

9 BY MS. SMITH:

10 Q Mr. Fleisher, could you please give us your
11 appraisal of the report submitted here today by CECO on behalf
12 of the City of Scranton?

13 A I take no exceptions with the content of the report
14 as presented. As we have all discussed here, it does fall
15 short of actually giving us a load capacity of what this
16 bridge is actually capable of carrying. I would concur too
17 with the recommendation in the report that no rail traffic
18 be allowed to pass over the bridge until such time as a
19 determination is made to see whether or not it is correct
20 that the bridge can carry rail traffic.

21 Q Would it be your recommendation then that the
22 Commission issue an order to that effect?

23 A Yes.

24 JUDGE LOVENWIRTH: Who are we going to say not to
25 operate trains, Mr. Fleisher? Assuming arguendo that we

1 don't have jurisdiction over the National Park Service,
2 can we order them to do anything? We can do it, but are they
3 bound by our order?

4 THE WITNESS: I think we have got to issue an order
5 and serve it on all the parties. I would suggest that we also
6 serve a copy on the National Park Service. However, there
7 is a question about our jurisdiction over them. It would be
8 my feeling that they probably are not going to do any opera-
9 tions of any trains on this track anyway, but they are
10 probably going to contract on operation of trains on this
11 track, so if anybody has any party who knows of any possible
12 candidates for operation of this traffic over this track we
13 should probably serve the order on that party also.

14 BY MS. SMITH:

15 Q Mr. Fleisher, what further testing would you
16 recommend be done at the present time?

17 A There has been a lot of talk about load testing of
18 this structure, and certainly I would recommend that that be
19 done if that's the only way possible to determine the load
20 capacity of this structure. I wouldn't suggest that that be
21 the only method of determining the load capacity. If a way
22 can be found to determine the load capacity short of load
23 testing, I would suggest that that route be used.

24 All testimony by parties, particularly Mr. Osborne,
25 indicate that there is no evidence of stress in this structure

1 from loading, so it has and possibly could continue to carry
2 rail traffic in the future. But the results that he has
3 presented have thrown up enough of a caution that I think that
4 we must play it safe and try to make a more accurate
5 determination of the load capacity of the structure.

6 If it requires more coring, I would suggest that that
7 be done.

8 Q Is that your recommendation, that further core
9 samples be taken?

10 A I hesitate to make a specific recommendation as
11 to what should be done. If some method of analysis is going
12 to be used to determine the load capacity, then perhaps
13 core sampling should be expanded so that there is more
14 evidence as to the quality of the concrete construction.
15 Concrete of a 4,000 pound or better strength should be
16 adequate for the design of this structure, because I'm sure
17 that the design strength that was used in the design of the
18 structure back in 1910 was probably considerably less than
19 4,000 PSI.

20 Q Mr. Fleisher, what is your recommendation for
21 assignment of maintenance responsibility from the present time
22 until a future time when a project would take place on this
23 bridge?

24 A I recommend that the City of Scranton be made
25 responsible for the maintenance of the structure since they

1 are the owner of the rail line that is involved here.

2 Q We've heard a lot of testimony today about the
3 possibility of concrete falling or spalling off the bridge
4 and the potential danger to pedestrians. What is your
5 recommendation concerning the bridge as to the pedestrians?

6 A I have not seen the structure since February 3rd,
7 1987. Certainly there is a danger from the potential of
8 concrete falling off the bridge. It has been talked about
9 possibly closing the sidewalk, the pedestrian walkway, to
10 pedestrians. This is probably -- well, it's definitely not
11 desirable and it's probably not going to be effective. If
12 you attempt to block off the sidewalk pedestrians are going
13 to walk in the roadway, and probably you are going to
14 create greater danger to pedestrians by doing that.

15 What I would recommend -- and I think this could be
16 accomplished without too much effort or expenditure -- is to
17 put some sort of a shielding overhead underneath the deck of
18 the bridge over the pedestrian walkway only, so that we
19 probably can eliminate almost entirely the potential for any-
20 thing falling from the structure onto a pedestrian walking
21 underneath.

22 Q Would it be your recommendation that the City of
23 Scranton construct the shielding?

24 A Yes.

25 Q Mr. Fleisher, what is your information concerning

1 whether this bridge is on the Commonwealth's Bridge Bill?

2 A This structure was included in the Act passed by
3 the Legislature in 1988; it is Act 1988-23. I do not have
4 a copy of the printed act. What I have before me is a
5 report of the Committee of Conference on Senate Bill 515, and
6 in that report on page 131 there is an item J-5, Borough of
7 Moscow, Market Street, bridge carrying Steamtown railroad
8 tracks, and it is indicated as a bridge replacement. There
9 is \$1 million listed there for the construction, \$100,000 for
10 engineering design, with a total for \$1,100,000.

11 JUDGE LOVENWIRTH: Where are you reading from, Mr.
12 Fleisher?

13 THE WITNESS: The report of the Committee of Conference
14 of Senate Bill No. 515, Printer's Number 1785.

15 I am reasonably certain, although I haven't checked this
16 out, that this project is not on the Commonwealth's 12-year
17 program at this time.

18 BY MS. SMITH:

19 Q Mr. Fleisher, does every bridge that is listed in
20 the Commonwealth Bridge Bill Act -- does every bridge receive
21 funding?

22 A They are projects that have been authorized by the
23 Legislature, and if the proper efforts are made by the proper
24 parties it probably will receive funding. There is no
25 guarantee when that funding might be available though. That's

1 the problem.

2 Q Mr. Fleisher, we had a little bit of conflicting
3 testimony today concerning the effect of salt. Are you able
4 to shed any light on the effect of salt?

5 A Well, I would say this, that salt has a greater
6 effect on reinforced concrete than on plain concrete because
7 the greatest detriment of salt is that it attacks steel and
8 causes the steel to corrode, and when steel corrodes the
9 products of corrosion expand tremendously and creates a force
10 that will pop a concrete cover off that steel. You don't have
11 this effect in plain concrete. I'm really not in a position
12 to say how much less the effect of salt is on plain concrete,
13 but I know, based on these facts, that it would be less
14 detrimental.

15 Q Mr. Fleisher, can you give us an idea of how much
16 time might be involved in removing this structure, rehabilitat-
17 ing it, or reconstructing it?

18 A The removal of this structure from the point that
19 an order would order this structure removed could be done
20 within a two-year period. The rehabilitation of the structure
21 would take a longer period of time. I think I would concur
22 pretty much with Mr. Davis' time recommendations. Probably
23 30 months for rehabilitation and three to four years for
24 reconstruction.

25 Q In the event that load testing is performed in the

1 future and the bridge is found to be structurally inadequate,
2 would it be your recommendation then that the bridge be
3 removed?

4 A Yes. We do not want to take a position against
5 rail traffic. However, if the structure -- and there has been
6 an indication that there is an intent to operate rail traffic
7 on this corridor at some time in the future -- if the structure
8 is going to be inadequate to handle the rail traffic, there
9 is no reason to delay the removal of it, even though we may
10 not be in a position to rebuild it right away. This is a
11 problem that is going to have to be overcome to actually
12 operate train traffic through this corridor. If there is a
13 necessity to rebuild it, there is going to have to be a way
14 found to rebuild it. But the removal should be done as
15 quickly as possible, which eliminates all the problems that
16 are attendant with the existing structure as it exists there
17 today.

18 JUDGE LOVENWIRTH: The question would depend in large
19 part too, would it not, Mr. Fleisher, upon the type of trains
20 that are going to be operated?

21 THE WITNESS: Yes. The type of equipment -- the same
22 as on highway bridges, the type of equipment that will pass
23 over the bridge determines whether the structure is capable
24 of carrying it or not.

25

1 BY MS. SMITH:

2 Q Mr. Fleisher, do you have anything further to add
3 to your testimony here today?

4 A No, I don't.

5 MS. SMITH: I have no further questions. The witness
6 is available for cross-examination, Your Honor.

7 JUDGE LOVENWIRTH: All right, Ms. Gallo.

8 MS. GALLO: Thank you, Your Honor.

9 CROSS-EXAMINATION

10 BY MS. GALLO:

11 Q Mr. Fleisher, you had stated that if there were
12 alternative ways of testing the structural capacity of the
13 bridge other than load testing you would recommend one of those
14 other alternatives. Can you state why that is?

15 A Well, if there is a less costly way than load
16 testing to determine the capacity of that structure, I think
17 it is logical that this is the method that should be used,
18 as long as the method would arrive at a satisfactory conclusion.

19 Q Is economics your only reason, or is load testing
20 the most stressful testing that can be done on a bridge?

21 A There is a possibility in load testing of the actual
22 destruction of a structure. If that happens probably you have
23 encountered a structure that wasn't meant to be used because
24 you wouldn't start out with a load test that was greater than
25 the loads that you were intending to put on the structure.

1 If it failed upon a load that was put on the structure, then
2 you have determined that it is weak. You have destructed the
3 bridge under the load less than the intended load.

4 Q Can you name any of the other alternatives that there
5 may be to load testing?

6 A I think someone mentioned that there are some
7 plans for the bridge, and someone mentioned that there is
8 reinforcement in the superstructure of the bridge. If this
9 information is available or the amount of reinforcement can
10 be determined by some means, a structural analysis can be done
11 to determine the capacity of this structure.

12 MS. GALLO: I have no further questions.

13 JUDGE LOVENWIRTH: Mr. Cummings?

14 MR. CUMMINGS: No questions, Your Honor.

15 JUDGE LOVENWIRTH: Ms. Ertel?

16 MS. ERTEL: No questions, Your Honor.

17 JUDGE LOVENWIRTH: Mr. Walker?

18 MR. WALKER: No questions, Your Honor.

19 JUDGE LOVENWIRTH: Do you have any redirect?

20 MS. SMITH: No redirect, Your Honor.

21 JUDGE LOVENWIRTH: Thank you very much, Mr. Fleisher.

22 (Witness excused.)

23 JUDGE LOVENWIRTH: Do you have anything else, any
24 additional witnesses, Ms. Smith?

25 MS. SMITH: No, Your Honor.

1 JUDGE LOVENWIRTH: Are there any additional witnesses
2 to be presented by any of the parties?

3 (No response.)

4 JUDGE LOVENWIRTH: Are there any non-parties here who
5 wish to be heard concerning this matter, such as Steamtown
6 or the National Park Service or anybody else?

7 (No response.)

8 JUDGE LOVENWIRTH: There hasn't been any verbal or
9 visual response to that inquiry.

10 I'm not laying the blame at any particular person's door-
11 step; however, the Commission's order hasn't been complied
12 with. We really don't know -- we don't have the information
13 that we were seeking when the Commission entered its order back
14 in October, 1987.

15 Not only that, but we don't even know, in my opinion,
16 what rehabilitation plan should be developed and implemented
17 to preserve the remaining portion of the substructure. We
18 don't know that either from this report.

19 We don't know what rehabilitative measures are necessary
20 to prevent spalled concrete and pop-outs.

21 These are all important things. This information is
22 very important to us in order that we can take steps to
23 safeguard the public.

24 I'm going to have to review this record very carefully.
25 I may just schedule another hearing and ask that another

1 engineer's report be submitted, because I really don't think
2 this record is developed right now.

3 I state now for the record that if that's the course
4 of action that I decide upon, and if the Commission agrees
5 with me, and if at a subsequent hearing the Commission's order
6 is again ignored, there is a possibility of civil and criminal
7 sanctions that might be imposed.

8 Does anybody want to do any briefing here?

9 (No response.)

10 JUDGE LOVENWIRTH: There is no visual or audible
11 response to that inquiry either.

12 We stand adjourned.

13 (Whereupon, at 3:32 p.m. the hearing was adjourned.)
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C E R T I F I C A T E

I hereby certify, as the stenographic reporter,
that the foregoing proceedings were reported stenographically
by me, and thereafter reduced to typewriting by me or under
my direction; and that this transcript is a true and accurate
record to the best of my ability.

COMMONWEALTH REPORTING COMPANY, INC.

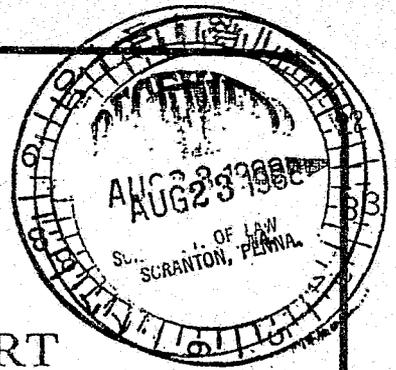
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Phyllis Glass

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FORM 1

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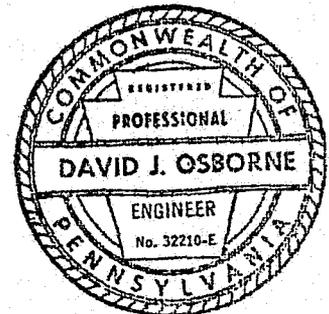
IN-DEPTH INSPECTION REPORT
FOR
RAILROAD BRIDGE
OVER
TRAFFIC ROUTE 690
BOROUGH OF MOSCOW

RECEIVED
APR 18 1989
SECRETARY'S OFFICE
Public Utility Commission

Prepared For:
THE CITY OF SCRANTON

**DOCUMENT
FOLDER**

DOCKETED
APR 25 1989
AUGUST, 1988



ceco associates inc.

consulting engineers

IN-DEPTH INSPECTION REPORT
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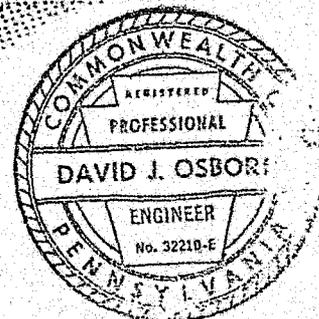
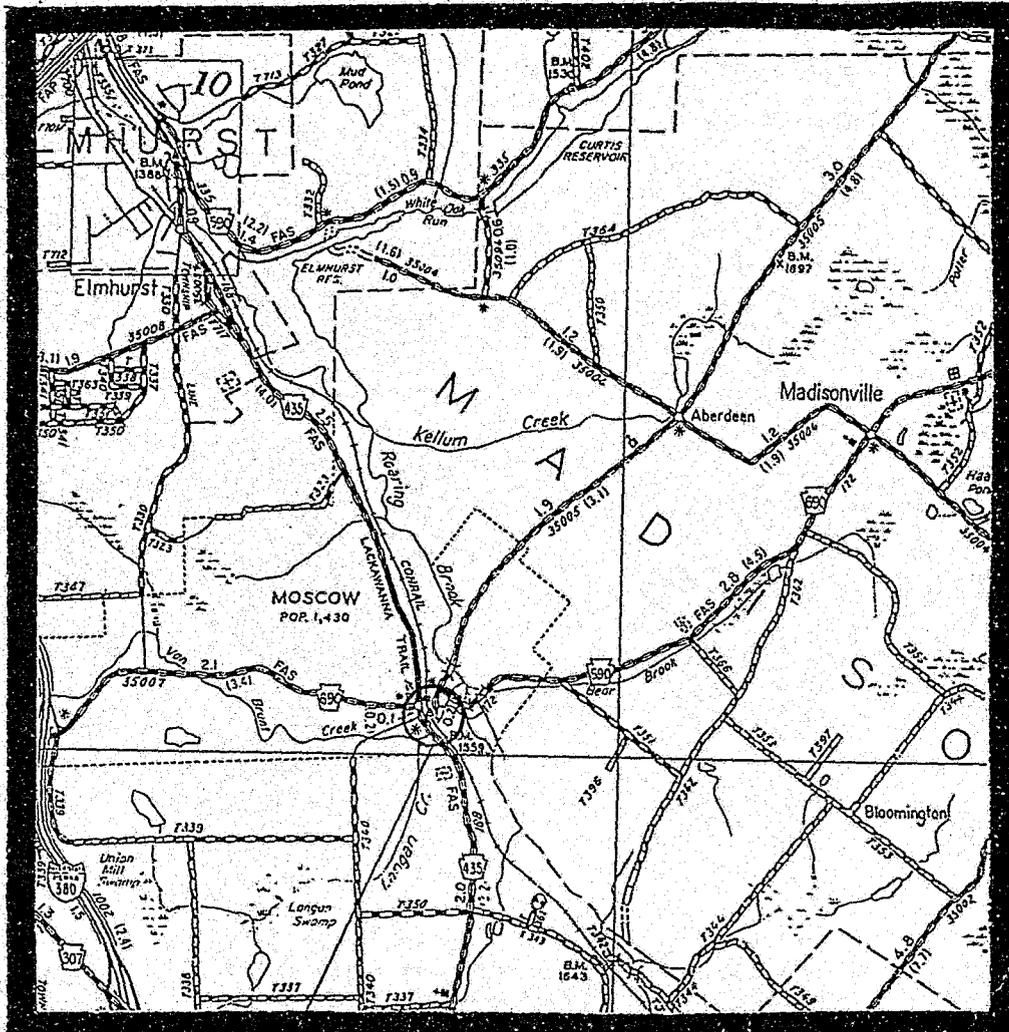


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LOCATION MAP



Inspection Site
Railroad Bridge
Over Traffic Route 690
Borough of Moscow

Taken From:
Lackawanna County
Type 10 General Highway Map
Scale: 1" = 1 Mile



**LACKAWANNA COUNTY
BOROUGH OF MOSCOW
IN-DEPTH INSPECTION REPORT
RAILROAD BRIDGE OVER TRAFFIC ROUTE 690**

SCOPE

This inspection was made to determine the general structural condition of the subject bridge. The following report covers the results of a field inspection of the structure and provides recommendations of actions to be taken.

The inspection was made according to generally recognized standards and procedures, but it is not implied that all defects were or could have been disclosed by this inspection.

HISTORICAL INFORMATION

The structure was constructed in 1910 to carry the Delaware, Lackawanna and Western Railroad above the grade of Traffic Route 690 in the Borough of Moscow, Lackawanna County, Pennsylvania. Rehabilitation of the structure has been completed since its original construction and consisted primarily of concrete resurfacing of certain areas of the exposed substructure and superstructure with pressure mortar surfacing.

DESCRIPTION

The Railroad Bridge over Township Route 690 in the Borough of Moscow consists of two (2) simple reinforced concrete spans supported by un-reinforced concrete abutments and a pier. There are two equal spans of 20'- 0" which currently carry two tracks. The original structure drawings showed four (4) sets of tracks across the structure. The bridge is built with a 90° skew and is currently posted for a 12'-3" underclearance.

The deck slab was placed in 6'- 6" wide by 2'- 8" thick units with ballast material on top to accommodate the railroad tracks.

The substructure consists of un-reinforced gravity type abutments and a concrete pier which is only reinforced in the cap and footings. There is no reinforcing in the pier columns.

INSPECTION PROCEDURE

The inspection was made to determine the general condition and to determine the Load Carrying Capacity of the structure. The guidelines used for the inspection are from the 1983 AASHTO Manual, Inspection of Bridges.



The bridge inspection included a visual inspection of the component parts of the structure, as well as concrete core borings, to check for the presence of major structural defects and evidence of possible present or future deterioration.

OBSERVATIONS

TEMPERATURE - 65° F.
WEATHER - CLOUDY
DATE - JUNE 8, 1988

CONDITION OF STRUCTURE

The structure overall is in poor condition.

Superstructure

The superstructure is in fair condition; however, there are numerous areas of delaminations, exposed reinforcing and spalling of the underside of the deck. The evidence of water stains at all joints of the precast deck slab panels indicates that large amounts of water is leaching through the deck. There were numerous areas where hammer sounding revealed hollows in the underside of the deck. The top of the deck is covered with ballast material, therefore making a complete inspection impossible.

Substructure

The concrete gravity abutments are in poor condition with heavy spalling throughout. The pier is also in extremely poor condition with extensive scaling and spalling throughout. Although repairs have been recently made to the substructure, the majority of these repairs are now hollow sounding indicating the presence of moisture and lack of bonding between the original concrete and the repair material. The pier has also experienced shrinkage cracking throughout the columns. This is probably due to the lack of reinforcing in this portion of the pier. The pier cap is heavily spalled and deteriorated.

STRUCTURAL ANALYSIS SUMMARY

This report was to contain an analysis to determine the current load-carrying capacity of the structure. However, two (2) of the four (4) concrete core samples taken at the structure were unable to be tested because the small amount of sample recovery. The recovered samples were small, broken with a characteristic lack of bonding between the aggregate and the cement matrix in addition to the reinforcing steel. The aggregate was also found to be rounded and smooth, rather than coarse and angular which would provide a better bond. The two (2) samples which were tested, provided an average compressive strength of 4,182 PSI. Considering the age of the structure, the compressive strength of the concrete was expected to be much higher.



Therefore, due to the in-conclusive results of the concrete tests, no structural analysis of this structure was made.

CONCLUSIONS AND RECOMMENDATIONS

Based upon the field inspection, review of original construction drawings and results of the concrete core extraction and testing, the following is concluded:

- a.) The structure is not in any danger of collapsing under its own dead load, however, the spalled concrete and small popouts could possibly fall from the structure if impacted or during the freeze-thaw cycles, the structure will undergo this coming winter.
- b.) The entire substructure is severely deteriorated and in need of extensive repairs to maintain its overall structural integrity.
- c.) The precast deck panels are deteriorated, however, no signs of over-stressing or structural cracking were discovered during the inspection.
- d.) The concrete core sampling proved to be inconclusive. Two (2) of the samples were able to be tested. However, two (2) additional samples provided an extremely low percentage of solid core recovery, making compression testing impossible. Repeated attempts to secure suitable samples for testing were made.

It is therefore concluded that the structure does not pose any immediate danger to the travelling public since no rail traffic is currently scheduled to use the bridge. If rail traffic is anticipated in the future, it is recommended that additional testing be completed at the structure. This may be in the form of additional concrete core extraction and analysis, or possibly physical Load Testing of the structure. Load Testing is a very expensive method of determining the load carrying capacity of the structure, however, it would result in the most accurate determination of the structure's capacity.

It is recommended that if the structure is to remain, that a substructure rehabilitation plan be developed and implemented to preserve remaining portions of the substructure. In addition, cleaning and rehabilitating the precast concrete deck panels is also recommended. If, however, it is anticipated that heavy railroad loading will occur in the future, load testing and analysis should be performed prior to permitting the resumption of rail traffic.

The results of the Load Testing Analysis should be used to determine the economic viability of rehabilitation verses replacement of the structure.

APPENDIX

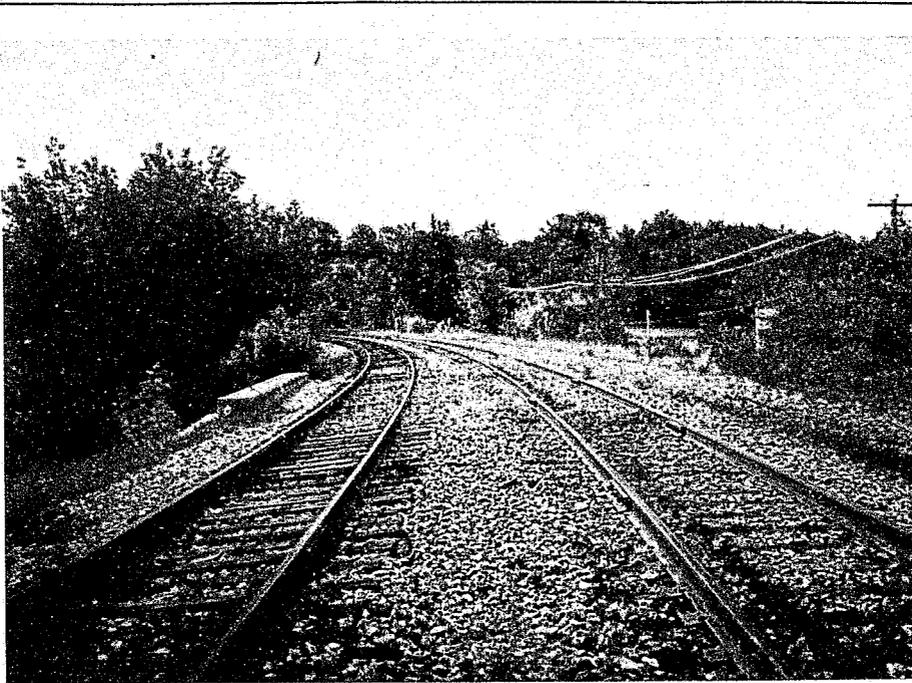
- 1.) **Photographs**
- 2.) **Sketches**
- 3.) **Concrete Core Test Results**

BRIDGE INSPECTION AND CONDITION REPORT

BRIDGE Railroad Bridge
Lackawanna County
LOCATION: Borough of Moscow

DATE OF PHOTOGRAPH: 6/8/88

FEATURE CROSSED: T.R. 690



DESCRIPTION: Looking Ahead Across The Structure

REFERENCES: _____

PHOTOGRAPH # _____ 3 _____



DESCRIPTION: Abutment #1

REFERENCES: _____

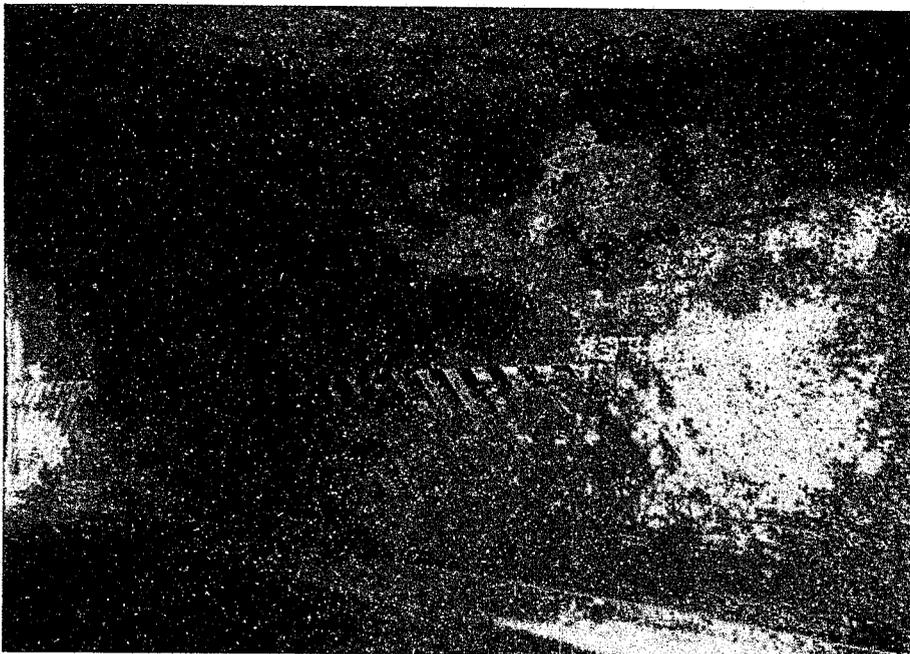
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BRIDGE INSPECTION AND CONDITION REPORT

BRIDGE Railroad Bridge
Lackawanna County
LOCATION: Borough of Moscow

DATE OF PHOTOGRAPH: 6/8/88

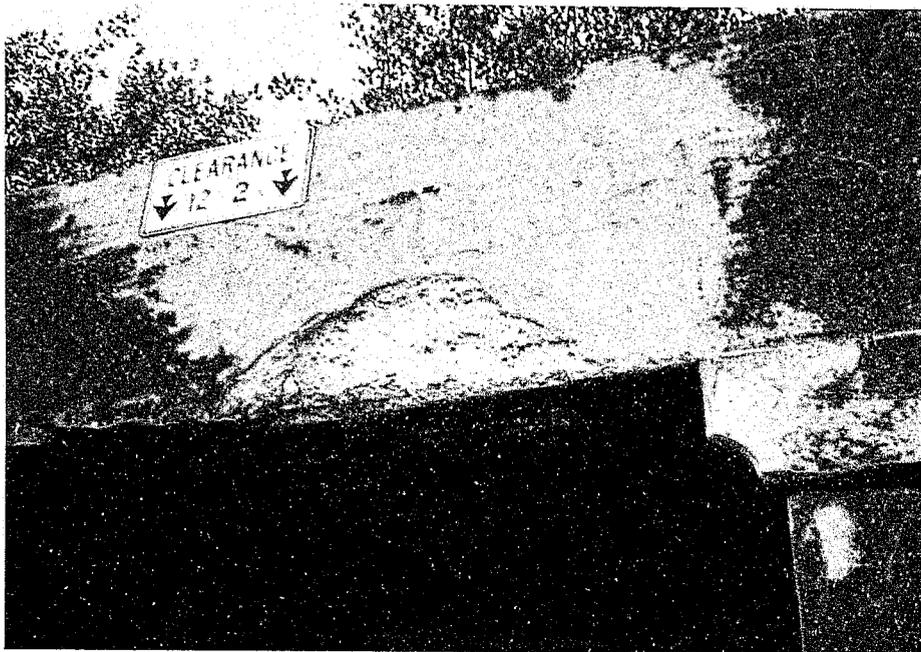
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DESCRIPTION: Abutment #2

REFERENCES:

PHOTOGRAPH # 5



DESCRIPTION: Fascis of Deck Slab - Spalled

REFERENCES:

PHOTOGRAPH # 6

BRIDGE INSPECTION AND CONDITION REPORT

BRIDGE Railroad Bridge
Lackawanna County
LOCATION: Borough of Moscow

DATE OF PHOTOGRAPH: 6/8/88

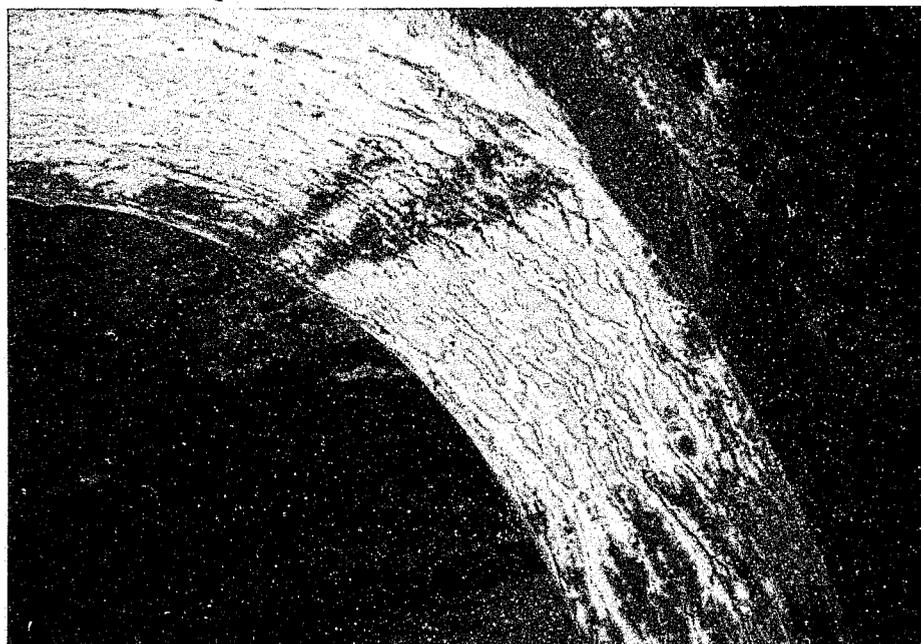
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DESCRIPTION: Pier

REFERENCES: _____

PHOTOGRAPH # _____ 7



DESCRIPTION: Severe Cracking and Efflorescence of Pier - Typical

REFERENCES: _____

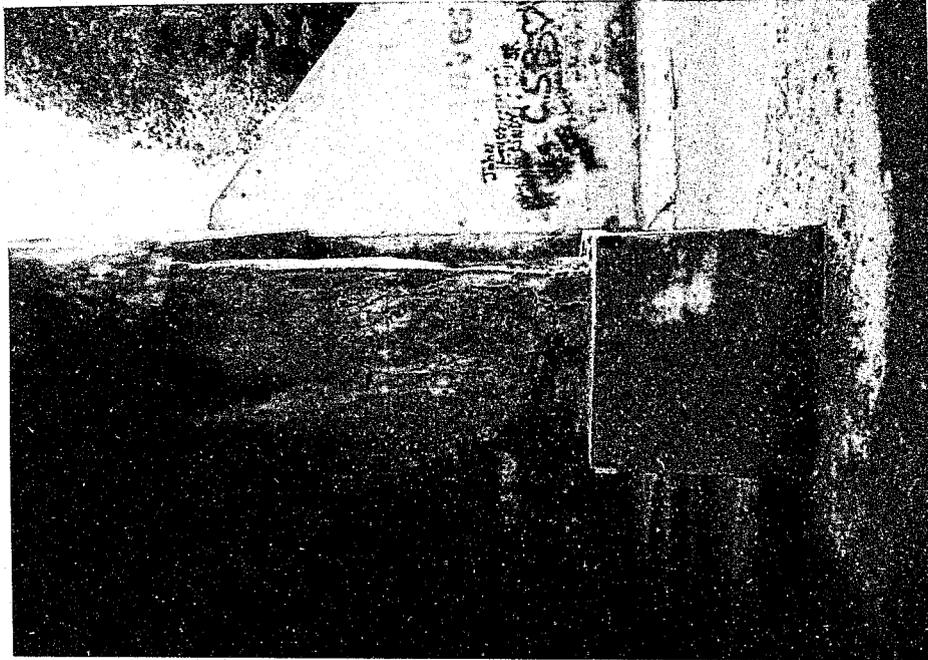
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BRIDGE INSPECTION AND CONDITION REPORT

BRIDGE Railroad Bridge
Lackawanna County
LOCATION: Borough of Moscow

DATE OF PHOTOGRAPH: 6/8/88

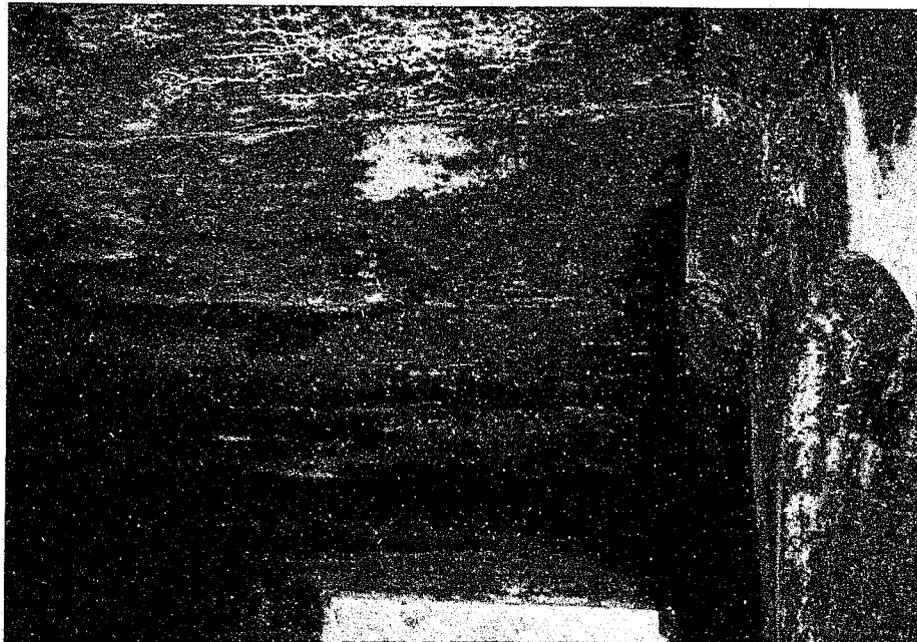
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DESCRIPTION: Typical Pier Column - Spalling, Cracking & Efflorescence

REFERENCES: _____

PHOTOGRAPH # 9



DESCRIPTION: Underside of Deck Slab - Spalling, Efflorescence & Water Leakage

REFERENCES: _____

PHOTOGRAPH # 10

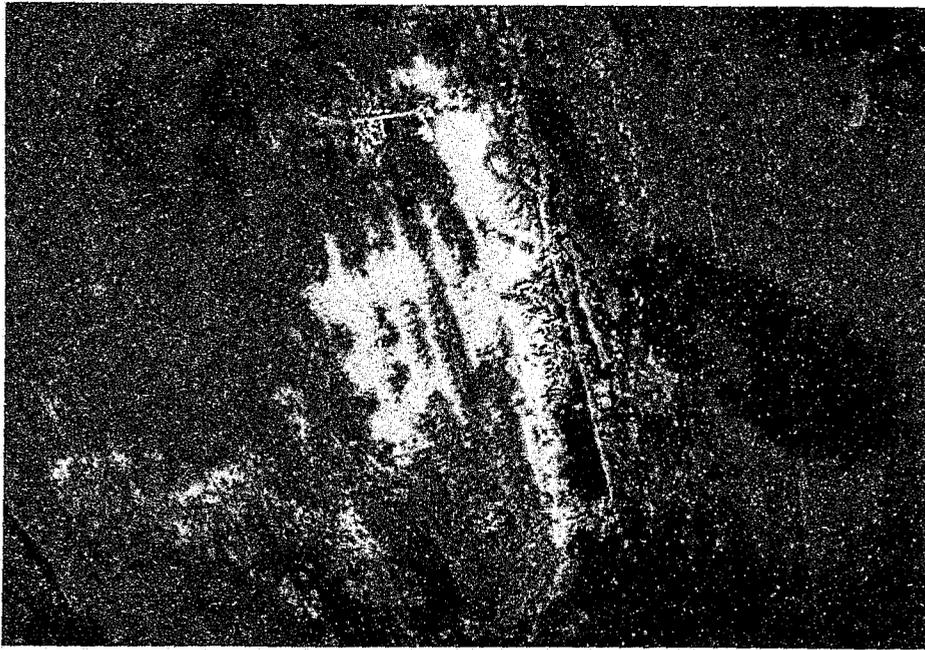
BRIDGE INSPECTION AND CONDITION REPORT

BRIDGE Railroad Bridge
Lackawanna County

LOCATION: Borough of Moscow

DATE OF PHOTOGRAPH: 6/8/88

FEATURE CROSSED: T.R. 690



DESCRIPTION: Insufficient Coverings of Rebars with Pressure Mortar Treatment

REFERENCES: _____

PHOTOGRAPH # _____ 11



DESCRIPTION: Typical Wing

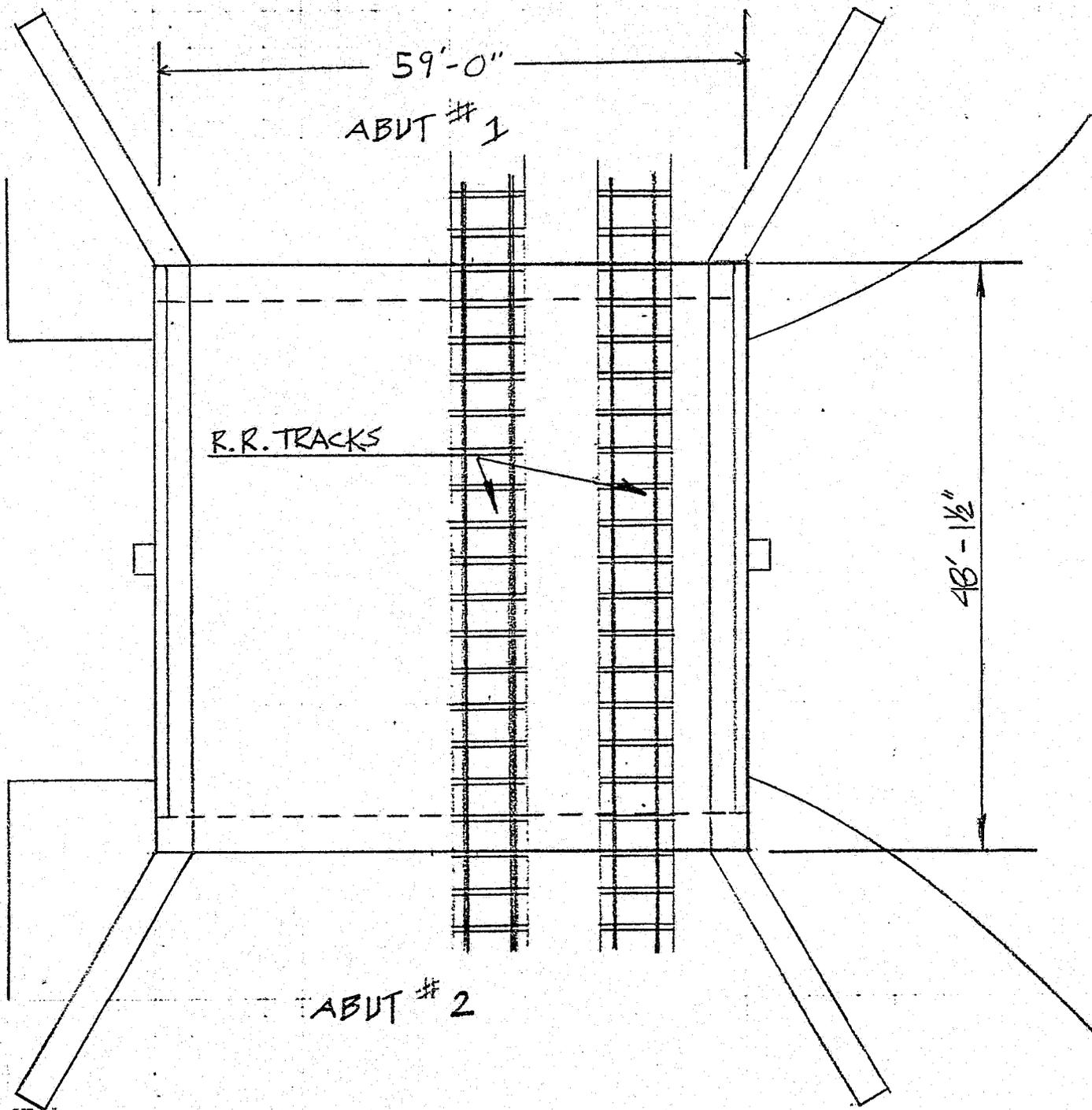
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PHOTOGRAPH # _____ 12

DATE 8-1-88
BY D.C.B.
CHK'D _____
DATE _____

CECO ASSOCIATES, INC.
P.O. BOX 995
SCRANTON, PENNSYLVANIA 18501

SH. NO. 1 OF 2
JOB NO. RAILROAD BRIDGE
BOROUGH OF MOSCOW



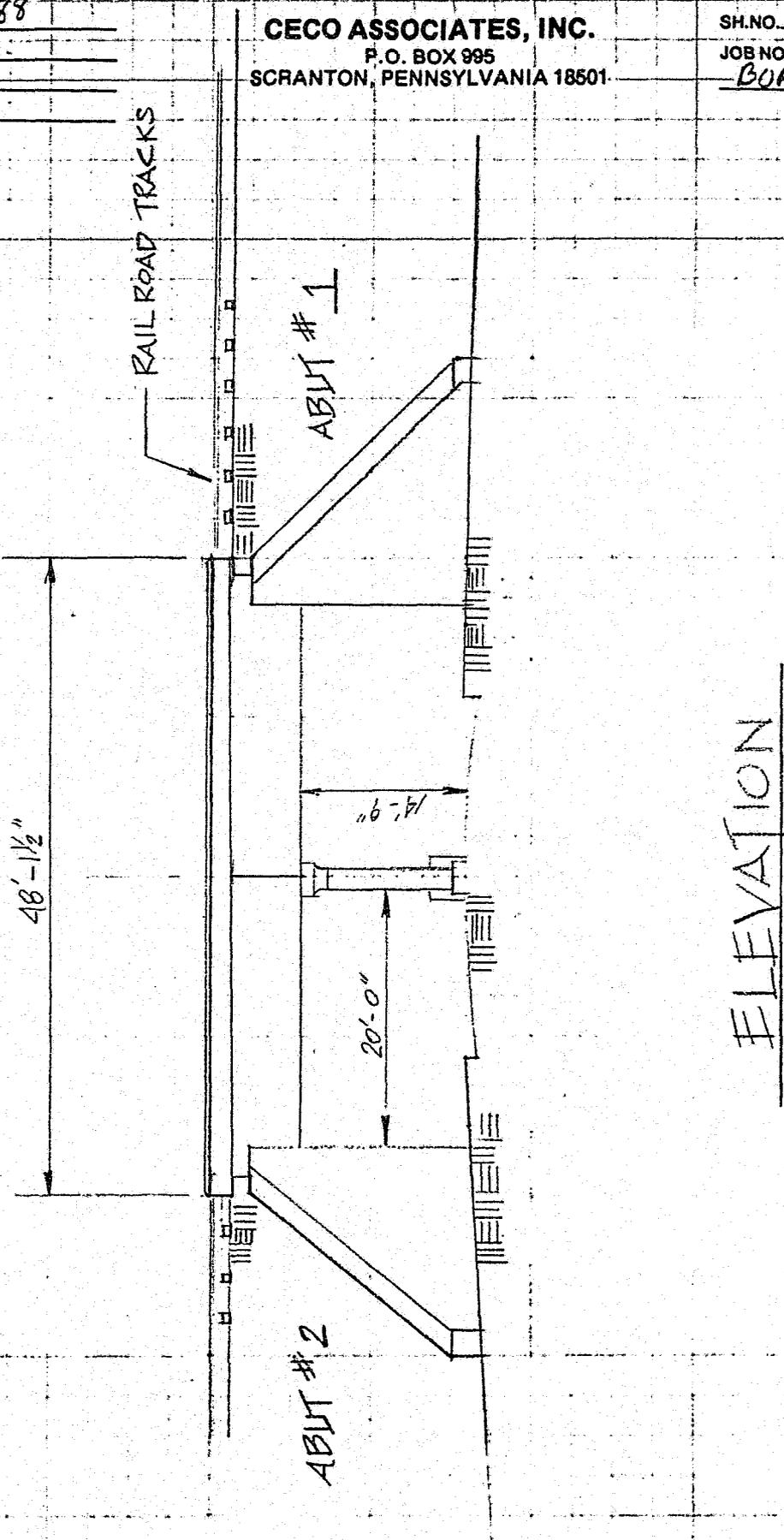
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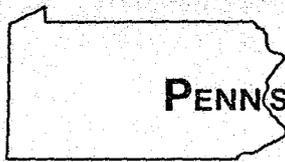
DATE 8-1-88
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CHK'D _____
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CECO ASSOCIATES, INC.
P.O. BOX 995
SCRANTON, PENNSYLVANIA 18501

SH.NO. 2 OF 2
JOB NO. RAILROAD BRIDGE
BOROUGH OF MOSCOW



ELEVATION
N.T.S.



PENNSYLVANIA TESTING LABORATORIES

Phone: (717) 654-8359 Moosic, PA

Mailing Address: P.O. Box 571, Pittston, PA 18640

Date: August 11, 1988

Lab #: 44104

For: Ceco Associates, Inc.
Scranton Electric Building
P. O. Box 995
Scranton, Pa. 18501

Attention: Mr. Tom Pichiarella

PROJECT: STEAMTOWN BRIDGE
SCRANTON, PA.

Re: Compressive Strength Test Results of Concrete Core Specimens

TEST RESULTS

<u>CORE NUMBER</u>	<u>SURFACE AREA (SQ. IN.)</u>	<u>CORE D² (H/D)</u>	<u>CORE H/D RATIO</u>	<u>CORRECTION FACTOR (H/T)</u>
#1 (Core #1)	5.94	5.5	2.2727	1.02182
#2 (Core #4)	5.94	5.5	2.1818	1.01454

<u>CORE NUMBER</u>	<u>TOTAL LOAD (LBS.)</u>	<u>CORRECTED TOTAL LOAD (LBS.)</u>	<u>CORRECTED COMPRESSIVE STRENGTH (LBS./SQ. IN.)</u>	
#1. (Core #1)	25200	25749	4334	
#2. (Core #4)	23600	23943	4030	
			<u>AVERAGE =</u>	<u>4182 PSI</u>

Respectfully Submitted,
PENNSYLVANIA TESTING LABORATORIES

Robert F. Brannon

Robert F. Brannon - Gen. Mgr.

RFB/bp