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File #: 199498

September 13, 2024

VIA ELECTRONIC FILING

Rosemary Chiavetta
Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street, 2nd Floor
P.O. Box 3265
Harrisburg, PA 17105-3265

**Re: Investigation of PPL Electric Utilities Corporation for potential violations of 52 Pa. Code § 56.1, et seq., of the Commission’s regulations and 66 Pa.C.S. § 1501 of the Public Utility Code
Docket No. M-2023-3038060**

Dear Secretary Chiavetta:

On page 32 of the Pennsylvania Public Utility Commission’s (“Commission”) Order entered May 16, 2024 (“*May 2024 Order*”), in the above-captioned proceeding, the Commission directed PPL Electric Utilities Corporation (“PPL Electric”) to “provide a root cause analysis report to the Commission, with a copy served on the statutory advocates and the Public Utility Law Project, within one hundred and twenty (120) days of the issuance of the Commission’s order that will address” each of the following topics:

1. “The billing issues to determine how customer balances and terminations were impacted, whether customers incurred late fees, and whether the refunds and foregone bills sufficiently addressed customers who should have been credited”;
2. “Whether the Company’s six-month termination moratorium was sufficient time to help all customers that were put in a difficult economic situation or faced termination of service due to PPL’s actions”; and
3. “The impact the Company’s six-month termination moratorium had on customer eligibility for LIHEAP crisis grants.”

May 2024 Order, p. 32.

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Enclosed for filing on behalf of PPL Electric is the Company's Root Cause Analysis Report, which consists of three attachments. Attachment 1 addresses the three topics listed on page 32 of the Commission's *May 2024 Order*, Attachment 2 provides further details on the line-item adjustment made to customers' bills, and Attachment 3 provides information about the Company's root cause analysis and corrective actions taken in response to the estimated billing incident.

Copies are being provided as indicated on the Certificate of Service and in accordance with the *May 2024 Order*.

Respectfully submitted,



Devin Ryan

DTR/dmc
Enclosures

cc: Certificate of Service
Office of Special Assistants (*via Email ra-OSA@pa.gov*)

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of this filing has been served upon the following persons, in the manner indicated, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

VIA E-MAIL

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Date: September 13, 2024



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1. Review the billing issues to determine how customer balances and terminations were impacted, whether customers incurred late fees, and whether the refunds and foregone bills sufficiently addressed customers who should have been credited

Customer balances were generally only impacted, if impacted at all, for the December 2022 or January 2023 bills. There was a portion of customers whose bills were significantly under or overestimated from December 20, 2022, to January 9, 2023. The over or underestimated bills caused customers to receive bill estimates or subsequent true-up bills that were out of line with what the customer expected based on their usage and past experience. Further complicating the situation was the fact that the true-up bill did not include a line item indicating that a portion of the bill was a credit for a prior overestimate or an additional amount to make up for a prior underestimate. Customers were ultimately billed the correct amount, but the large volume of estimated bills did cause customer confusion.

In response to the customer confusion caused by the estimated billing, the Company instituted a voluntary termination moratorium for all customers, even those not impacted by the billing event, from January 2023 until July 2023. The Company also waived late fees for all customers from January 2023 through February 2023. All impacted customers had their late fees waived until such time that their specific billing issues were resolved. Finally, the Company offered more flexible payment arrangements for customers to allow them to catch up from any unexpected bill amounts they may have received during this time.

The majority of customers were receiving bills based on actual meter data starting on January 10, 2023. As explained above, the termination moratorium was in place for several months after billing returned to using actual meter data, so that customers could recover from any disruption that the estimated billing may have caused. Additionally, to the extent that a customer experienced an impact from the billing event that lasted beyond January 2023, the Company placed a termination moratorium on those specific customer accounts for 90 days after the final resolution of the customer's billing issue.

As a result of these voluntary efforts the Company experienced a:

- \$2.3 million reduction in Late Fee collection; and
- \$7.8 million increase in bad debt expense.¹

The Company saw very few terminations while the moratorium was in place. PPL Electric did experience a spike in terminations coming out of the moratorium. However, this is typical, as the Company experiences a similar increase every year coming out of the winter moratorium.

Month	Terminations
January – 23	393
February – 23	4
March – 23	0
April – 23	1
May – 23	3

¹ As of November 21, 2023, when the Joint Petition for Approval of Settlement was filed.

June – 23	1
July – 23	343
August – 23	4,321
September – 23	3,285
October – 23	4,807
November – 23	4,482
December - 23	275

PPL Electric believes that having the termination moratorium in place until July 31, 2023, was an appropriate amount of time to allow customers to recover from the large volume of estimated bills sent in December 2022 and January 2023.

The bill credits were due to the Line Item Adjustment arising out of the true-up of estimated bills. As explained in PPL Electric’s accompanying explanation of the Line Item Adjustment (see **Attachment 2**), the Company believes its calculation of the credits was appropriate and accurate.

2. Whether the Company’s six-month termination moratorium was sufficient time to help all customers that were put in a difficult economic situation or faced termination of service due to PPL’s actions

See response to question 1.

3. The impact the Company’s six-month termination moratorium had on customer eligibility for LIHEAP crisis grants

Regarding the impact that the Company’s self-imposed moratorium on service terminations for nonpayment had on customer eligibility for Low Income Home Energy Assistance Program (“LIHEAP”) Crisis grants, PPL Electric was cognizant of the issue. During the voluntary moratorium period, the Company created a manual process to send termination letters to low-income customers so that they could apply for LIHEAP Crisis grants and provided them with additional notice of their eligibility. As a result, PPL Electric’s low-income customers received approximately \$1.5 million in LIHEAP Crisis grants in 2023. This amount is consistent with PPL Electric’s typical total of Crisis grant awards for years not impacted by additional COVID-19 funding and program changes.

In Program Year 2022/23, PPL Electric received a total of \$16,458,295 of LIHEAP funds, including the \$1.5 million of Crisis grants.

PPL Electric received the following in LIHEAP Crisis grants over the past 5 years:

2019 - \$895,142;

2020 - \$1,782,523;

2021 - \$2,275,153 (DHS accepted past due bills instead of termination notices, which increased the grant eligible population);
2022 - \$2,683,265 (additional Crisis grant funding was available); and
2023 - \$1,588,254.

As seen above, PPL Electric's LIHEAP Crisis grants for 2023 were in line with normal non-COVID years and indicate that the Company's efforts to assist customers to enroll in LIHEAP during the billing event were successful.

Line-Item Adjustment Explanation

Background

During the billing event, PPL Electric discovered that the process to true up estimated bills was causing billed amounts to be incorrect by a small amount due to rate changes occurring between billing periods. PPL Electric's billing software reconciles customer usage amounts on the next bill based on actual usage data after an estimated bill is issued. However, the true-up usage amount is billed based on the rates in effect for the current bill, and not based on the rates for the period when the true up usage was incurred.

As an example, if a customer was underestimated by 100 kWh for the estimated bill in period 1, the system would true up the customer's bill and add 100 kWh of usage to the actual bill issued in period 2. However, that 100 kWh would be billed under the rates in effect during period 2, and not calculated using the rates in effect during period 1 when the usage was incurred. The Company sent out a large volume of estimated bills in the December 2022 through January 2023 timeframe. Coinciding with this time period there were several rate changes including PPL Electric's Price to Compare changing on December 1, 2022, and several rider mechanisms changing on January 1, 2023.

This caused small inaccuracies in the rates charged to customers for any customer bill that included estimated usage from November 2022, December 2022, or January 2023 and that was true up at a later date. The Company analyzed these inaccuracies and determined that, for most customers, the difference was very small (+/- approximately \$10.00 or less for residential customers, and +/- \$25.00 or less for C&I customers).

PPL Electric calculated this difference and credited customers who were owed a refund through a line-item adjustment. For customers that were underbilled, the Company did not charge them and wrote-off this amount instead (approx. \$1 million). PPL Electric will not seek rate recovery for this amount.

The Company also discovered that its billing software does not accurately true up demand charges for rate classes that have a demand charge component in their rate class. This issue is a result of the billing software code not being updated when the Company transitioned from analog meters to Power Line Communication ("PLC") meters and later to Advanced Meter Infrastructure ("AMI") meters. With analog meters, the demand meter needed to be read each month and reset to determine the peak demand for that billing period. If the Company estimated for period 1 and read the meter for actual usage in period 2, PPL Electric would only know what the peak demand recorded was at the time of the last meter read. The Company would not have any information on what the actual peak demand was during period 1 because the analog meter was incapable of providing that level of detail. For that reason, the billing software was programmed to not true up estimated demand charges. With AMI meters, the Company has a record of customer 15-minute interval data going back approximately two years and can determine what the customer's actual peak demand was during a billing period.

Methodology

PPL Electric analyzed all of the approximately 860,000 estimated bills that were sent between December 2022 and January 2023. The analysis involved determining when the usage was actually incurred and applying the rates in effect at that time. If a customer was underestimated, it meant that the true-up portion of the January bill should have been billed at the December rates, and if the customer was overestimated it meant that the overestimated portion of the December bill should have been billed at the January rates.

The Company determined the correct rates for each period, which involved determining an individual customer's supply rate and incorporating any rider changes that occurred between periods. For each customer, the true-up portion of their bill was run through a calculation applying the correct rates to determine if the customer was owed a refund or if the customer was underbilled. The formula that was used is provided below:

$$\text{Customer Refund or Charge} = (\text{True Up kWh} * (\text{applicable Supply Rate} + \text{USR} + \text{SDER} + \text{Act 129} + \text{TCJA} + \text{DSIC} + \text{DSTAS})) - \text{Amount Billed for True Up kWh}$$

For demand charge customers, the above formula also included a calculation comparing the estimated demand charge to what the actual demand charge should have been. The Company applied interest at 7% APR for residential and at 4.34% APR for C&I, both compounded monthly for customer refunds.

Through this calculation the Company determined that approximately 380,000 customers (330,000 residential, 50,000 C&I) were owed a refund. Overall, the financial impact to customers was minimal. The majority (97%) of residential customer credits fell within the \$10 range and saw an average credit of about \$2.13, whereas business customer credits fell within the \$25 range and saw an average credit of about \$6.81. PPL Electric applied the refunds to customer bills through a one-time line-item adjustment on the July 2023 and August 2023 bills.

Customer Communications

Prior to issuing the line-item adjustment, the Company engaged in proactive customer communications. This included a bill message printed on customer bills, and a dedicated webpage providing additional information about the line-item adjustment. PPL Electric's customer service representatives were provided with talking points to answer customer questions about the bill credit. Customers who had a large adjustment received direct outreach via phone. In total, 146 residential customers, and 54 non-residential customers received a direct outreach. The Company also provided advance notice of the line-item adjustment to BCS, OCA, OSBA and PULP.

Outcome

PPL Electric performed extensive quality assurance review of the refund amounts before issuing the line-item adjustment to confirm the accuracy of the adjustment. The Company received very few questions from customers and did not see any customer complaints filed regarding the line-item adjustment. PPL Electric is confident that the line-item adjustment accurately resolved the issue with reconciling estimated usage charges with actual usage in the correct billing period.

Report on Root Cause Investigations 12/14/2022 CS Billing Incident

Investigation Team and Interviewees

- Root Cause Analysis was conducted between June - August 2023

Analysis Team:

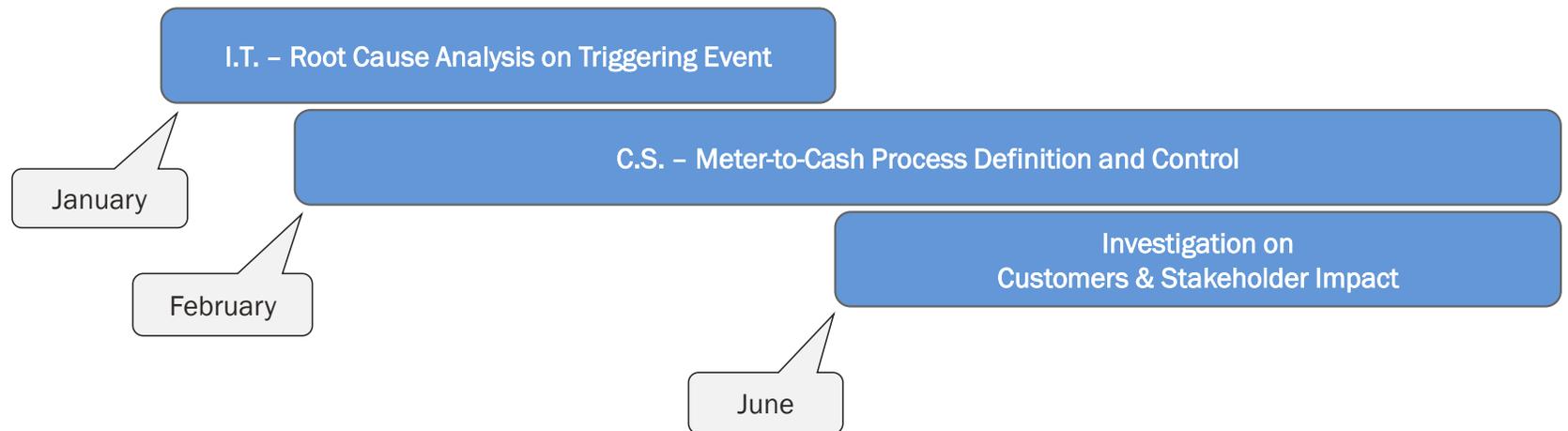
1. (Audit) Eric Schoener
2. (CS) Rodman Moore
3. (CS) Mike Stanz
4. (DO) Ed Harakel
5. (DO) Tonya Lee
6. (IT) Avinash Meka
7. (IT) Amanda Miller
8. (OGC) Mike Shafer
9. (T&S) Kaitlyn Toman
10. (T&S) Luke Cioffi
11. (Organizer) Tyler Clement

Interviews:

- | | |
|-----------------------------|---------------------------------|
| 1. (COM) Dana Burns | 13. (IT) Abhi Bhatwadekar |
| 2. (CS) Chris Stamatedes | 14. (IT) Umesh Rao |
| 3. (CS) Mike Sullivan | 15. (IT) Ashish Bhargava |
| 4. (CS) Melinda Stumpf | 16. (IT) Madhu Subbacharya |
| 5. (CS) Cheryl Oehler | 17. (IT) Kate Johnston |
| 6. (CS) Diana Yunez | 18. (RA) Beth Johnson |
| 7. (CS) Jason Bartoli | 19. (RA) Gary Hartman |
| 8. (CS) Nicole Drakely | 20. (Not Available) Nicki Jones |
| 9. (CS) Yvette Belfort | |
| 10. (CS) Mike Gower | |
| 11. (CS) Shemeka Rodgers | |
| 12. (CS) Dennis Worthington | |

Problem Statement

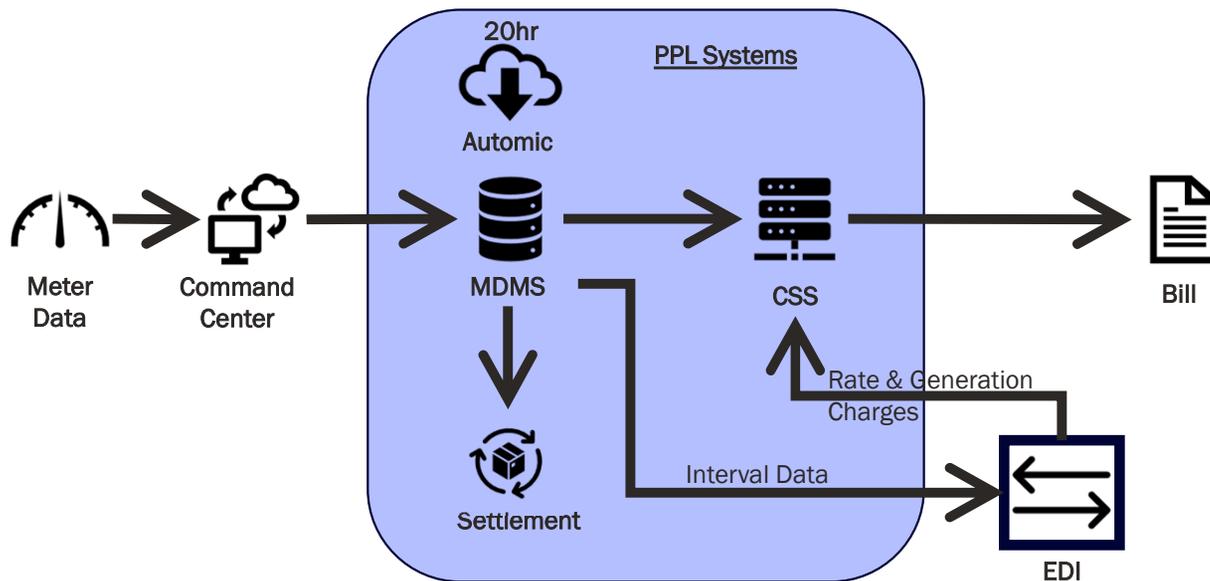
Focal Point: Dissatisfied Customers, Stakeholders, and PAPUC



Event Impact

- On December 15, 2022, an I.T. system moving meter data for customer billing failed.
 - This resulted in approximately 800,000 estimated bills being sent out that would need to be trued up in the next billing cycle.
 - Note: A typical month includes ~ 400 estimated bills. The vast majority require manual correction.
 - Additionally, approximately 141,000 customers received bills missing estimated usage data consisting of approximately 82,000 Commercial and Industrial (C&I) and 59,000 residential customers.
 - Note: Because Interval data not sent to EDI, the Interval use customers didn't receive the generation portion of the bill (requiring cancel/rebill). Also, shopping customers who changed providers missed billing changes.
 - These accounts required a manual cancel-rebill process to true up the accounts with actual usage data.
- During troubleshooting and response, additional decisions further compounded the complexity of the response, resulting in an organization-wide response with significant negative media coverage and stakeholder impact.
- Billing corrections lasted until mid-October 2023.

Meter Data & Billing I.T. Processes



Comment

- ~1.4M customers are divided into 20 Billing Groups of ~70,000 customers each.
- One Billing Group is processed each day (20-days total per month).
- It takes ~ 20-hours each day to process the meter data.
- Generation charges and rates require the EDI interface.

Cascading Impacts

Customer & Media

- PPL EU did not issue a formal communication to its customers until January 31, 2023, six weeks after the initial billing issue was experienced.
 - A proactive communication plan with customers, suppliers and the PAPUC was not developed and executed because it was hoped that a solution would be implemented within a few days.
- By this time, customers and suppliers had begun to call the PAPUC.
- Local media was covering the billing issue story and provided instructions on how to contact the PAPUC and file complaints.
- The number of incoming informal complaints exceeded the response capacity, and PPL EU applied for and received an extension from the Bureau of Consumer Services (BCS).

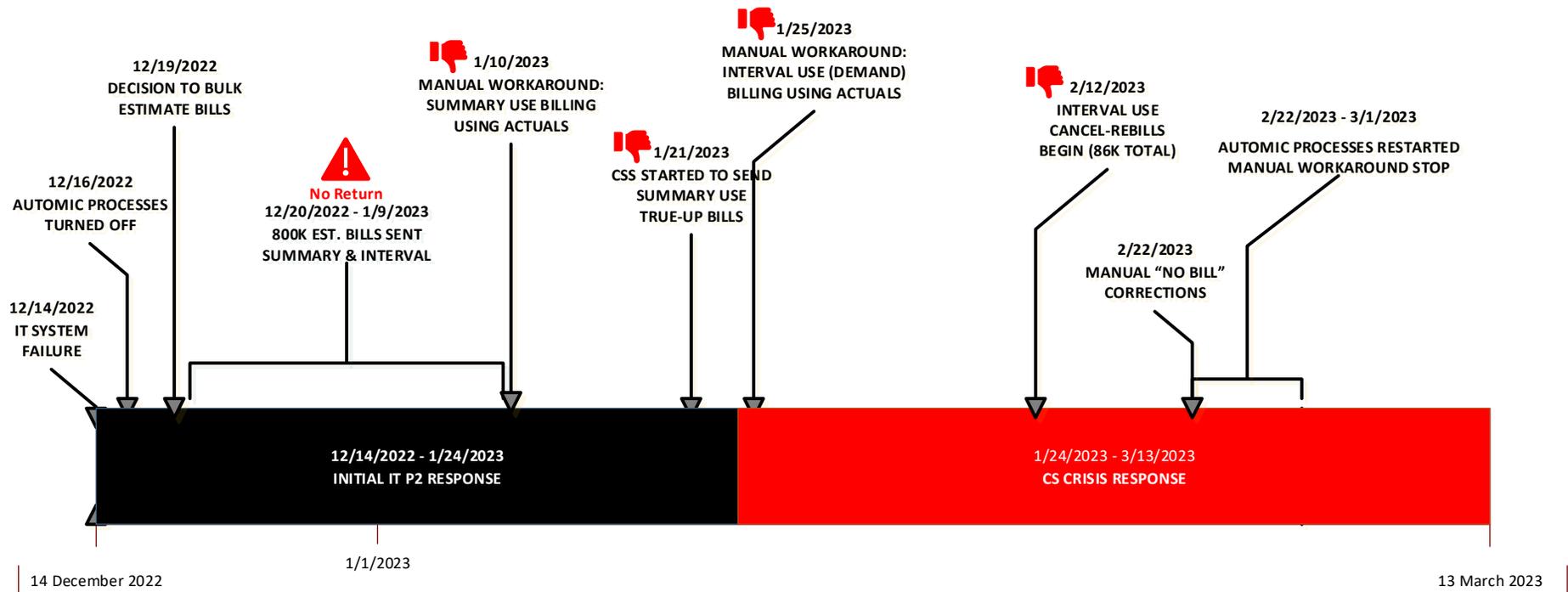
PUC

- The PAPUC's Bureau of Investigation and Enforcement (I&E) opened an investigation of potential violations related to the Incident.
- At the peak, the PAPUC received approximately 450 informal customer complaints for PPL EU per day.

Call Center

- Call volumes into the PPL EU customer call center surged.
- To handle the increased call volume, training materials were created, and storms teams activated on February 2, 2023.
- Resources at the outside vendor call center were doubled.

Key Events in the Timeline



Key Findings (Root Causes)

Investigation Findings

- A contingency plan did not exist for this type of situation.
- Manual workaround processes were created on the fly to keep the business processes from falling further behind and to stay compliant with PAPUC regulations.
- This led to billing errors where bills had to be manually cancelled and rebilled.

Comment

- **Lack of organizational knowledge:** Neither the I.T. organization, nor Customer Services, possessed a detailed understanding of meter data to cash technology (process flow).
- **Lack of process documentation:** No process map or documentation existed to help train employees and/or contractors to aid in troubleshooting.
- **Lack of standard operating procedures:** No operating procedures to deal with exceptions or failures.

Event Reponse

Number	Corrective Action
1	Perform impact assessment of how turning off processing jobs affect the overall meter to cash process
2	Establish contingency plan and process to send out manual shut-off notices sooner
3	Update disaster recovery plan for business-critical processes, including recovery time and what to do if recovery does not occur within the planned time
4	Create impact assessment by the business process owner - Owner creates playbook and recovery plan
5	Create proactive communication plan with PAPUC, customers, and suppliers and implement for future events. Use robocalls to communicate with customers
6	Establish playbook on how response is determined
7	Establish contingency and recovery plans for this issue
8	Based on benchmark study, implement playbook and training for different emergency response situations
9	Create revenue assurance organization to monitor and manage the meter to cash process

System Architecture

Number	Corrective Action
1	Re-evaluate how IT supports PPL EU critical business processes
2	Design meter to cash system to process data in a distributed fashion
3	Change system architecture to allow processing out of sequence
4	Upgrade to latest application and operating system
5	Create alternative data path to get data from command center to supplier portal
6	Create robust and accurate interval usage algorithm
7	Evaluate best way to estimate bills going forward and implement new estimation process
8	Review and refine how PPL EU's customer bills are estimated

Ongoing Operations

Number	Corrective Action
1	Establish analytics to predict volume of customer calls and staff appropriately for normal and special cause events
2	Conduct Failure Mode and Effects Analysis (FMEA) on critical business processes and establish prevention or recovery plans