I. INTRODUCTION AND PURPOSE

Q1. PLEASE STATE YOUR NAME, ADDRESS, AND BUSINESS AFFILIATION.

A. My name is Christopher K. Burke. My business address is 6540 Watkins Drive, Jackson, MS 39213.

Q2. ARE YOU THE SAME CHRISTOPHER K. BURKE WHO SUBMITTED DIRECT TESTIMONY IN THIS DOCKET?

A. Yes, I am.

Q3. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. I respond to the recommendation by Office of Public Utility Counsel ("OPUC") witness Scott Norwood that the Commission impose a disallowance for replacement power costs associated with forced outages at ETI's Sabine Plant. I explain that ETI has provided adequate documentation regarding the performance and outages of its generating units consistent with the Commission's fuel reconciliation filing package, none of those outages were the result of imprudence, and Mr. Norwood's cursory review of Sabine Unit 3 performance does not warrant a disallowance.

II. RESPONSE TO MR. NORWOOD

Q4. PLEASE SUMMARIZE MR. NORWOOD'S RECOMMENDATION REGARDING OPERATION OF THE SABINE UNITS.

A. Mr. Norwood identifies nine forced outages exceeding 100 hours at Sabine Unit 3 during the Reconciliation Period and recommends the Commission disallow $2.01 million of replacement power costs associated with four of those outages[1] (listed below):

Outage Start Date	Outage End Date	Event Hours
04/24/2017	05/01/2017	150.25
06/14/2017	06/18/2017	105.82
07/22/2017	08/03/2017	302.12
06/06/2018	06/23/2018	418.23

Mr. Norwood bases his recommended disallowance on two grounds. First, he claims that ETI did not supply reports documenting the root cause of these forced outages at Sabine Unit 3.[2] Second, he opines that the performance of Sabine Unit 3 was "subpar" during the Reconciliation Period.[3]

[1] Direct Testimony of Scott Norwood at p. 20 and Exhibit SN-6.

[2] *Id.* at p. 19.

[3] *Id.* at pp. 17 and 19.

Q5. DOES MR. NORWOOD ALLEGE THAT ETI ACTED IMPRUDENTLY IN FAILING TO PREVENT ANY OF THE FORCED OUTAGES OR IN OTHERWISE MANAGING THE NECESSARY REPAIRS?

A. No. Mr. Norwood concludes only that he was unable to determine, without root cause documentation from the Company, whether ETI managed the outages prudently.[4]

Q6. IS MR. NORWOOD CORRECT THAT ETI DID NOT PROVIDE DOCUMENTATION IDENTIFYING THE ROOT CAUSE OF OUTAGES DURING THE RECONCILIATION PERIOD?

A. No. OPUC propounded the following discovery request (OPUC 1-21) to ETI:

> Provide documentation addressing the root cause, start date, duration, and estimated incremental replacement power cost of any forced outages of more than 100 hours at ETI's generating units during the reconciliation period.

ETI responded with documentation in two forms and addressed each facet of OPUC's request.[5] First, ETI provided the Apparent Cause Analysis Reports for those outages for which such a report was warranted and prepared.[6] Second, ETI directed OPUC to Schedule FR-3.42a, which lists and provides detail regarding forced outage events for fossil-fueled generation, as described below. Third, as

[4] *Id.* at p. 19.

[5] Exhibit CKB-R-1 (Excerpt of ETI's Response to OPUC 1-21).

[6] *See e.g.*, Exhibit CKB-R-3, which is one of the Apparent Cause Analysis Reports provided in response to OPUC 1-21 and which pertains to one of the Sabine Unit 3 outages referenced by Mr. Norwood.

requested, ETI quantified the replacement power costs associated with the forced outages exceeding 100 hours in duration.[7]

Q7. WHAT IS AN APPARENT CAUSE ANALYSIS REPORT?

A. It is a detailed written report that provides the results of a formal investigation of an event or condition that seeks to identify the cause(s) of the event or condition.

Q8. IS IT ETI'S PRACTICE TO PREPARE A FORMAL REPORT FOR EACH FORCED OUTAGE?

A. No. It is neither practical nor necessary to conduct the time- and resource-intensive investigation associated with a formal outage report for every forced outage. Rather, it is ETI's practice to conduct a more detailed investigation and prepare a report when the duration of the event is appreciable and the cause of the event is not readily apparent so that steps can be taken to identify and mitigate against potential recurring problems. Where the cause of an outage is readily apparent based on observation of unit operations or review of operating data, the Company's resources are better utilized focusing on repair work as opposed to investigating something that is already known. Thus, it is appropriate and reasonable that the more extensive reports were prepared for only certain of the outages that exceeded 100 hours.

[7] *See* Exhibit SN-5.

Q9. WHEN NO OUTAGE REPORT WAS PREPARED, DID THE COMPANY NEVERTHELESS DOCUMENT THE CAUSE OF THE OUTAGE?

A. Yes. The North American Electric Reliability Corporation ("NERC") requires that the cause of each forced outage at a utility-owned generator be recorded and submitted into NERC's Generation Availability Data System ("GADS"), which is an electronic database. NERC issues detailed instructions specifying how and what type of information regarding the cause of a forced outage must be recorded in GADS.[8]

Q10. PLEASE EXPLAIN HOW THE REFERENCE TO SCHEDULE FR-3.2A IS RESPONSIVE TO OPUC 1-21?

A. Consistent with the Commission's Fuel Reconciliation filing package requirements, Schedule FR-3.2a identifies the unit, the event start date, the event end date, the event duration in hours and, importantly, the cause of the forced outage.

Q11. WHAT IS THE SOURCE OF INFORMATION RELIED UPON TO IDENTIFY THE CAUSE OF EACH FORCED OUTAGE IN SCHEDULE FR-3.2A?

A. The NERC GADS data.

[8] See https://www.nerc.com/pa/RAPA/gads/DataReportingInstructions/GADS_DRI_2020.pdf.

Q12. DID OPUC OR MR. NORWOOD SUBMIT ANY FOLLOW-UP REQUESTS SEEKING FURTHER EXPLANATION OF THE CAUSE OF ANY OUTAGES IDENTIFIED IN RESPONSE TO OPUC 1-21 OR THE SCOPE OF WORK DONE TO REPAIR THE UNIT?

A. No, they did not, despite having several months to do so before OPUC's deadline to file direct testimony.

Q13. HAVE YOU REVIEWED THE CAUSES OF THE FOUR FORCED OUTAGES THAT FORM THE BASIS OF MR. NORWOOD'S RECOMMENDED DISALLOWANCE?

A. Yes. I have reviewed the NERC GADS data for those outages, interviewed Sabine Plant personnel, and reviewed information regarding the scope of repair work for each of those outages.

Q14. WHAT WERE THE CAUSES OF THOSE FORCED OUTAGES?

A. Three of the four outages (and $1.2 million of the replacement costs) included in Mr. Norwood's proposed $2.01 million disallowance were caused by boiler hot spots.

For each of the hot spot events, the cause of the outage was apparent based on visual inspection of the unit by plant personnel during routine operator rounds. Further, the cause of each outage was associated with the effects of normal wear and tear of unit operations. Thus, there was no need to prepare detailed outage reports for those events. Because Mr. Norwood bases his disallowance on ETI's

decision not to prepare and provide such a report in these instances, the proposed disallowance should be rejected.

Q15. PLEASE ELABORATE.

A. Sabine Unit 3 is a 54-year old steam generator. The Sabine Unit 3 boiler is essentially a large furnace where the heat generated by combusting natural gas is transferred to tubes that line the interior walls of the boiler. Those tubes contain water that is converted to high pressure steam, which is used to drive the unit's turbines. The boiler is encased with insulation and an exterior wall of metal casing.

A boiler hot spot in a natural gas-fired boiler occurs when deterioration of the refractory lining inside the boiler takes place, causing the interior wall to overheat and deteriorate. Eventually, a breach of the interior boiler wall occurs, which in addition to being a personnel safety hazard, allows flames, hot gasses, or steam to escape and cause damage to the insulation, exterior wall, and surrounding components. When that occurs, the unit must be taken offline to perform repairs, which typically involve replacement of the affected portion of the refractory lining, welding repairs of the interior wall, re-packing of insulation, and replacement of any damaged sections of the exterior metal casing. A hot spot is known to be the cause of the event when plant personnel observe glowing metal on the exterior boiler casing, or otherwise detect flames or hot gasses escaping the exterior wall of the boiler.

Boiler hot spots are the result of refractory lining breakdown that occurs over the normal life-cycle of a steam generator. It is not uncommon for a

production boiler to experience these types of events with greater frequency as it nears the end of its useful service life. Sabine Unit 3 is approaching the end of its life cycle after 54 years of operation.

Each of these three hot spot events is common for a unit of this type and vintage. Consequently, because the causes of the outages were readily apparent, a detailed outage report was not warranted. I have included narrative descriptions with additional details regarding these specific events in Exhibit CKB-R-2.

Q16. PLEASE DISCUSS THE FOURTH OUTAGE AT SABINE UNIT 3 THAT IS INCLUDED IN MR. NORWOOD'S PROPOSED DISALLOWANCE.

A. The NERC GADS data identifies the cause of that outage as "Overheating issues at a non-indicating pressure tap on the #2 main steam stop valve."

During the startup of Sabine Unit 3 following a maintenance outage, the No. 2 Main Steam Stop Valve ("MSV")[9] Non-indicating Pressure Tap ("NIPT") experienced an overheating condition thereby requiring a unit shutdown. During routine operator rounds, plant personnel visually observed a red glow under the insulation of the No. 2 MSV while the unit was in startup. It was evident that this condition posed unacceptable risk to personnel and equipment if the unit was left in service due to the potentially compromised metallurgical integrity of this component.

[9] The Main Steam Stop Valve is connected directly to the steam outlet of the boiler for the purpose of shutting off the steam from the boiler.

The condition was diagnosed as Thermo-Acoustic Resonance, a condition that occurs with a mutual heat transfer between fluid and pipe wall due to cyclic fluid compression and expansion. The unit was immediately removed from service, and cool down activities commenced while the repair plan was being finalized. The existing pipe and pipe cap were removed from the NIPT and an insert plug was installed in that location to eliminate the steam from entering that NIPT.

It was not necessary to prepare a detailed outage report for this event because a problem at the MSV was readily apparent from its red glow and the Original Equipment Manufacturer ("OEM") had already diagnosed the cause of the issue. There was no need for ETI to conduct a separate outage investigation to duplicate the work already done by the OEM.

Q17. YOU MENTIONED THAT MR. NORWOOD REFERENCES NINE OUTAGES AT SABINE UNIT 3 THAT EXCEEDED 100 HOURS, BUT ONLY INCLUDED FOUR OF THOSE OUTAGES IN HIS PROPOSED DISALLOWANCE. MR. NORWOOD SUGGESTS HIS PROPOSED DISALLOWANCE SHOULD THEREFORE BE CONSIDERED CONSERVATIVE. DO YOU AGREE?

A. Absolutely not. First, as explained above, there is no basis to disallow replacement power costs associated with the four outages Mr. Norwood *did* include in his proposed disallowance.

Second, ETI's application includes all information required by the Commission's fuel reconciliation filing package and was found sufficient by both

Staff and the Administrative Law Judges.[10] In addition, my Direct Testimony describes the comprehensive maintenance programs employed at ETI's plants designed to mitigate against the types of events that caused the outages experienced. Mr. Norwood does not even purport to refute this evidence or establish that any outage at Sabine Unit 3, or elsewhere, was a result of imprudence or that ETI mismanaged the unit's repair or return to service.

Finally, a review of the Sabine Unit 3 outages Norwood elected not to include in his disallowance shed light as to why he presumably made that choice. Three of those five outages had *negative* replacement power costs.[11] That is, during the periods Sabine Unit 3 was experiencing those outages, it was cheaper to buy power from the market than it would have been to run Sabine Unit 3.[12] The fourth outage was a common and readily apparent boiler hot spot event.[13] And for the final outage, the Company *did* produce a formal outage report, which was provided in its response to OPUC RFI No. 1-21 and is attached as Exhibit CKB-R-3. An outage report was warranted in that instance because the cause of the outage (*i.e.*, degradation of internal component parts of the condenser) was not readily apparent.

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[10] Commission Staff's Recommendation on Sufficiency of Proposed Notice and Completeness of Application at 2 (Oct. 14, 2019); SOAH Order No. 2 at 2 (Nov. 18, 2019).

[11] *Id.* at Exhibit SN-5.

[12] Exhibit SN-5 (excerpt of ETI's Response to OPUC 1-21), which indicates the replacement power costs of the Sabine-3 outages beginning on 01/30/18, 02/12/18, and 03/06/18 were ($86,040.36), ($78,921.91), and ($60,276.57), respectively.

[13] Schedule FR-3.2a at 3.

For these reasons and those discussed previously in this testimony, Mr. Norwood's proposed disallowance is entirely unsubstantiated, and certainly not conservative.

Q18. BASED ON YOUR REVIEW OF THE EVENTS DISCUSSED ABOVE, WERE ANY OF THOSE OUTAGES THE RESULT OF IMPRUDENT ACTIONS ON THE PART OF ETI?

A. No. Forced outages at generating units cannot be completely avoided. Typically, they can be only mitigated through utilization of effective maintenance programs. I described in my Direct Testimony the comprehensive maintenance programs employed at ETI's plants that are intended to mitigate against the types of events that caused the outages discussed above. Mr. Norwood made no allegations that ETI's maintenance programs were somehow deficient during the Reconciliation Period. Further, as a unit ages, it is not uncommon to observe the effects of normal wear and tear on unit performance. Indeed, Mr. Norwood acknowledges that Sabine Unit 3 is a relatively old unit and that aging units generally become less reliable and efficient.[14]

[14] Direct Testimony of Scott Norwood at p. 17.

Q19. DID ETI TAKE REASONABLE ACTIONS TO RETURN SABINE UNIT 3 TO SERVICE FOLLOWING THE OUTAGES DISCUSSED ABOVE?

A. Yes. In each instance, plant personnel identified the cause of the outage, prepared plans to conduct the repair work safely and efficiently, secured requisite materials and labor to conduct the repairs, and managed the repair work to completion. Mr. Norwood does not assert any imprudence in the steps taken to return the units to service.

Q20. MR. NORWOOD ALSO OPINES THAT A DISALLOWANCE IS WARRANTED BECAUSE THE PERFORMANCE OF SABINE UNIT 3 WAS "SUBPAR" DURING THE RECONCILIATION PERIOD.[15] DO YOU AGREE?

A. No. I disagree that a disallowance is warranted based on a simple comparison to NERC average generating unit performance. As an initial matter, it is not surprising in the least that the performance of a generating unit nearing the end of its useful life would lag the industry average. To base a disallowance on this fact alone would be unreasonable, as it would penalize a utility based solely on the age of a specific generating unit.

Moreover, while comparison to NERC performance statistics can be a useful threshold tool with which to benchmark performance when used in the appropriate context, Mr. Norwood's use of industry averages says nothing about whether ETI prudently managed the operations of Sabine Unit 3. In my Direct

[15] *Id.*

Testimony, I compared ETI's entire fossil fleet and then the coal and gas units (on a cumulative basis, respectively) to the comparable NERC nationwide performance statistics over a period of years to assess the effectiveness of ETI's maintenance practices. On a fleetwide basis, ETI's generating units compared well to those NERC statistics.

However, I do not agree that singling out one unit for comparison to NERC nationwide statistics is a valid basis on which to determine the reasonableness of ETI's maintenance practices, whether any outages resulted from imprudence, or whether the overall performance of that unit warrants a disallowance. For example, one could review each outage for that unit and determine the utility acted prudently, but Mr. Norwood's approach would still result in a disallowance. That would be an absurd and unreasonable result. Indeed, even if every plant used to derive NERC average statistics had been operated and maintained 100% prudently, there would be differences in performance and outage rates and, statistically, many units would be "below average." The comparison of a single unit to an average, in and of itself, simply does not establish imprudence.

The comparison of a single unit to NERC statistics may provide useful information regarding whether to pursue further inquiry in the identification of specific drivers affecting unit performance. But that use of NERC statistics still requires a more reasoned approach than that taken by Mr. Norwood. When making such comparisons, one should review unit performance over a period of time and compare that performance to a comparable period of NERC performance statistics, as I did in my Direct Testimony.

Q21. DID OPUC SUBMIT AN ERRATA TO MR. NORWOOD'S TESTIMONY RELATED TO THIS POINT?

A. Yes. In response to RFIs that ETI propounded on OPUC related to these issues, OPUC filed a testimony errata on April 7, 2020, that replaced Mr. Norwood's Table 2 with a corrected table. Mr. Norwood's testimony, and original Table 2, stated that Sabine Unit 3 had a forced outage rate that was approximately 100% higher than the NERC industry average. The revised Table 2 shows that Sabine Unit 3's forced outage rate of 13.15% was actually only 23% higher than the NERC industry average of 10.69%. This update, along with his revised Table 2 as a whole, shows that even when applying Mr. Norwood's comparison approach, the performance of Sabine Unit 3 was not an outlier or outside a reasonable range when compared to the NERC industry averages, especially for a plant that has been in commercial operation since 1966.

Q22. MR. NORWOOD ALSO NOTES THAT SABINE UNIT 3 EXHIBITED ONE OF THE HIGHER FORCED OUTAGE RATES IN ETI'S NATURAL GAS FLEET.[16] HAVE YOU REVIEWED THE CAUSES OF FORCED OUTAGES AT SABINE UNIT 3 DURING THE RECONCILIATION PERIOD TO DETERMINE WHETHER THERE WERE ANY PARTICULAR DRIVERS THAT AFFECTED THAT UNIT'S PERFORMANCE?

A. Yes. As Mr. Norwood testifies, "Sabine 3 is a relatively old generating unit (54 years old) and as plants age, they generally become less reliable . . . ."[17] It is readily apparent from a review of Schedule FR-3.2a that a primary driver affecting the reliability of Sabine Unit 3 during the Reconciliation Period was boiler hot spots. As I discuss above, the experience with boiler hot spots at Sabine Unit 3 is directly associated with the age of the unit.

III. CONCLUSION

Q23. PLEASE SUMMARIZE YOUR RESPONSE TO MR. NORWOOD.

A. Mr. Norwood's proposal to disallow $2.01 million of replacement power costs associated with four outages at Sabine Unit 3 should be rejected. He bases this recommendation not on any alleged imprudence, but rather on: (1) the Company's decision not to undertake unwarranted and resource-intensive formal outage investigations and produce formal outage reports for each outage exceeding

[16] *Id.* at p. 18.

[17] *Id.* at p. 17.

100 hours, regardless of how apparent and understood the causes of the outages were; and (2) a cursory and inappropriate comparison of Sabine Unit 3 performance to NERC generation average statistics.

In my Direct Testimony, I describe the comprehensive maintenance programs employed at ETI's plants that are intended to mitigate against the types of events that caused the outages discussed above. In this Rebuttal Testimony, I explain why none of the four outages included in Mr. Norwood's proposed disallowance was a result of imprudence on ETI's part or warranted a more detailed causal investigation or report. There is simply no justification to disallow the replacement power costs associated with those outages.

Q24. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes.

ENTERGY TEXAS, INC.
PUBLIC UTILITY COMMISSION OF TEXAS
DOCKET NO. 49916

Response of: Entergy Texas, Inc. to the First Set of Data Requests	Prepared By: Jeff Knighten Sponsoring Witness: Devon Jaycox/Chris Burke
of Requesting Party: Office of Public Utility Counsel	Beginning Sequence No. LR1 Ending Sequence No. LR2

Question No.: OPUC 1-21 Part No.: Addendum:

Question:

Provide documentation addressing the root cause, start date, duration, and estimated incremental replacement power cost of any forced outages of more than 100 hours at ETI's generating units during the reconciliation period.

Response:

Information included in the response contains highly sensitive protected ("highly sensitive") materials. Specifically, the responsive materials are protected pursuant to Texas Government Code Sections 552.101, 552.104 and/or 552.110. Highly sensitive materials will be provided pursuant to the terms of the Protective Order in this docket.

See FR-3.2a and highly sensitive attachments.

DESIGNATION OF PROTECTED MATERIALS PURSUANT TO PARAGRAPH 4 OF DOCKET NO. 49916 PROTECTIVE ORDER

The Response to this Request for Information includes Protected Materials within the meaning of the Protective Order in force in this Docket. Public Information Act exemptions applicable to this information include Tex. Gov't Code Sections 552.101, 552.104 and/or 552.110. ETI asserts that this information is exempt from public disclosure under the Public Information Act and subject to treatment as Protected Materials because it concerns competitively sensitive commercial and/or financial information and/or information designated confidential by law.

Counsel for ETI has reviewed this information sufficiently to state in good faith that the information is exempt from public disclosure under the Public Information Act and merits the Protected Materials Designation.

George Hoyt
Entergy Services, Inc.

DESCRIPTION OF SABINE UNIT 3 HOT SPOT OUTAGES INCLUDED IN MR. NORWOOD'S PROPOSED DISALLOWANCE

- **June 14 to June 18, 2017 (105.82 hours) – Boiler Hot Spot.**

Sabine Unit 3 was taken offline when Boiler hot spots were discovered on the west side 5-1/2 elevation near the furnace economizer wall. Unit 3 had been de-rated to 55 MWs prior to coming offline when an infrared scan identified the damaged area with excessive heating at that location.

Upon initial inspection of the boiler area near the economizer wall, it was discovered that the wall insulation refractory had failed, allowing hot air to escape and cause the damage. The repair consisted of completely stripping the wall and reconstructing it in accordance with the original design. New casing was installed, and the insulation replaced per the insulation specification drawing. The refractory was installed between the membrane and finned tubes and the boiler casing metal material was weld repaired. This repair method allows the gas flow to pass through the tubes and draws heat from the casing material to prevent overheating. Normal degradation of the insulation material over years of operation is a contributing factor to the boiler damage that precipitated this event.

- **July 22 to August 3, 2017 (302.12 hours) – Boiler Hot Spot**

Sabine Unit 3 was taken offline when boiler hot spots were discovered on the northeast and northwest corners of the sixth floor. Operator rounds discovered severe damage to the boiler casing. The escaping hot gasses had caused the exterior sheet metal to loosen, exposing the casing and revealing a glow that was observed during visual inspection. The unit was taken off-line to perform the necessary repairs.

When initial inspections of the dead air space under the vestibule along the north side of the boiler on the fifth floor were completed, damage was observed on the seal boxes where the tubes form an angle in the vestibule. To complete this repair during the outage, all material had to be completely stripped on the west wall in the dead air space and repairs were made in accordance with the original design, which consisted of skin casing repair. In addition, a weld repair was made to address material damage in the slope of the boiler. New casing and insulation were installed per the insulation specification drawing. Normal degradation of the insulation material over years of operation is a contributing factor to the boiler damage that precipitated this event.

- **June 6 to June 23, 2018 (418.23 hours) – Boiler Hot Spot and FD Fan Inlet Vane Binding.**

Sabine Unit 3 was taken offline when boiler hot spots were discovered on the east side 6-1/3 floor at the vertical I-Beam where the furnace and rear pass split wall is located. The boiler

casing had split and plant personnel observed the casing glowing, which is a typical indication of a hot spot. The unit was taken off-line to perform repairs.

Inspection of the boiler area behind the I-Beam revealed that the wall insulation refractory had failed, allowing hot air to escape and cause the damage. The repair consisted of completely stripping the wall and reconstructing it in accordance with the original design. New casing was installed and the insulation was replaced per the insulation specification drawing. The refractory was installed and the casing material was aligned to touch the tangent face of the tubes to complete the repairs. Normal degradation of the insulation material over time contributed to the boiler damage that lead to this event.

During this outage resulting from the boiler hot spot, plant personnel documented the high amp differential on the motors for the A and B Forced Draft (FD) fans, which is typically an indication of a mechanical issue. During the offline inspection, mechanics discovered binding on the top vanes resulting from inadequate clearance. A total of seven vanes and their bushings were replaced on the B FD Fan.

Apparent Cause Analysis Report

Issue Title: Sabine Unit 3 Start-up Failure – Loss of Vacuum

Report Date: 05/05/17

Entergy

Apparent Cause Analysis Report
Title:
Date:

Prepared By: Aaron Miller
Reviewed By:
Approved By:

Sabine Unit 3 – Startup Failure – Loss of Vacuum

EXECUTIVE SUMMARY

PROBLEM STATEMENT: Starting on 3/10/17 Unit 3 had issues with high condenser backpressure eventually resulting in a startup failure on 3/21, which resulted in the loss of 14,800 megawatt hours.

Event Summary

In March of 2017, Sabine Unit 3 had several loss of condenser vacuum events, the second two contributing to a startup failure. Minor repairs were made after the 3/10 loss of vacuum (during unit shutdown) and the unit was restarted. After a short boiler outage the unit was in startup on 3/21 when there were two separate loss of vacuum events. The startup was aborted and the unit opened up. More extensive repairs and inspections ensued. The unit subsequently started up and has had no vacuum issues since (as of 5/5).

Causal Factors/Direct Cause(s)

1. Condenser Internal defects - Condenser wall cracked penetration welds, Leaking pipe flanges, Steam bellows crack, Water Box Flange leak
2. Condenser internal defects - steam seal piping leaks, LP extraction steam piping expansion bellow leaks

Apparent Cause(s)

1. Equipment Reliability LTA - Maintenance Calibration and Testing LTA - Predictive Maintenance & Inspection Program LTA
   Condenser performance testing and condenser air in leakage surveys no longer conducted (proactive, routine basis)
2. Other - Evaluated Risk - Occurrence of an accepted risk
   Plant decision not to fix some findings due to budget, resources

3. Management and Leadership LTA - Leadership System Design LTA - Responsibility for item/activity not adequately defined.
   During past turnover, direct responsibility of condenser and associated equipment not adequately defined.

Entergy

Apparent Cause Analysis Report
Title:
Date:

Apparent Cause Analysis Report
Sabine Unit 3 – Startup Failure – Loss of Vacuum

AFFECTED EQUIPMENT AND STATISTICS:

Event Triggered/Initiated:	3/21/17
Equipment Name:	Unit 3 Condenser / Steam Seal System
Event Type:	SF
First Event:	3/10/17 – high vacuum excursion during unit shutdown caused premature turbine trip
Second Event:	3/21/17 – two high vacuum excursions during unit startup causing abandonment of startup
Power Generation Event Time:	
Responsible Apparent Cause Person(s):	Aaron R. Miller
NERC System component Code(s)	
GADS Sequence Number	837630
PlantView Event Number	

PROBLEM STATEMENT:

Starting on 3/10/17 Unit 3 had issues with high condenser backpressure eventually resulting in a startup failure on 3/21, which resulted in the loss of 14,800 megawatt hours.

Facility	Plant	OPCO	Unit	Event Type	Start Date	End Date	LMWH	GADRS SEQ#	CAUSE OF EVENT
TX000	Sabine	Entergy Texas	SABINE-3	SF	3/21/17	3/27/17		837630	Loss of condenser vacuum and high backpressure during unit startup.

Entergy

Apparent Cause Analysis Report
Title:
Date:

DESCRIPTION OF EVENT AND INVESTIGATION	

In March 2017...

- 3/10 - Unit 3 coordinated to come down due to a significant boiler hotspot (GADRS Event 837629)
- When COS was ramping down unit, he experienced a rapidly rising vacuum at 55 MW and 23 MW, forcing him to trip the unit at 23 MWn rather than 0. He suggested inspections of the steam seal system due to multiple issues with controlling the turbine steam seals.
- 3/10 – 3/20 hotspots repair and steam seal repairs (inside LP / condenser)
    - (Maintenance and Contractor) we did find a few spots where there was evidence of leakage. TIG is putting together a plan to repair and estimate for what was found and we will go from there. We also noticed there are flanges present in portions of the piping and of course we could not determine just by looking if any of these connections were compromised. The piping on some of the sections did appear to be pitted and scaly however no evidence of leakage was seen in most of the sections, the pipe just appears to be in somewhat bad shape. We will repair what was seen and do further visual inspections to ensure we did find all spots and continue forward. I am not well versed enough on this system to state if what was found is the sole source of our difficulties but am willing to say it is a least a contributor.
- 3/20 – outage completed, unit began preparing for startup
- 3/21 @ 3:16 am - the unit was soaking at 2250 RPM with a good condenser vacuum and the backpressure started rising rapidly. Operations took control and got the unit back to stable. They ramped the turbine speed again, got to 2250 RPM.
- 3/21 @ 4:30 am – turbine at 2250 RPM, good vacuum
- 3/21 @ 10:16 am – unit backpressure started to rise rapidly again, turbine tripped at 10:18 am.
- 3/21 – 3/27 inspections and repairs:
    - Attempts were made to pressurize the steam seal system with air, but there was too much leak through (diverting valve to condenser)
    - After several failed attempts to locate leaks with air, operations filled the piping with water and two leaks were found.
        - A pinhole was found and repaired to the steam seal supply piping going to the #4 gland
        - A flange in the supply piping to the # 3 gland had a minor leak.
    - A cracked 7B extraction steam bellows was found. A new bellows was ordered and welded in.
    - Two nagging external condenser leaks were repaired:
        - The 8" line from the steam diverting line penetration to the condenser had a crack at the wall/weld
        - The two 2" hot reheat drain lines penetration to the condenser had cracked welds and were repaired.
    - The crossover bellows above the LP turbines had insulation stripped, cleaned out of debris and filled with water to ensure they did not leak
    - The four rupture disks were filled with water and found not to leak.

Entergy

Apparent Cause Analysis Report
Title:
Date:

- Water was put into the turbine slop drains, but no leaks were seen in the piping inside the condenser.
- The condenser was filled above the expansion joint 2-3 times to look for and locate and verify (fixed) leaks.

- Unit was started on 3/29 and has been running well with good vacuum since (currently 5/5/17).

APPARENT CAUSE/CONTRIBUTING CAUSE EVALUATION

Analysis Methods:

A Why Staircase was performed to determine the causal factors. See Attachment 1

Causal Factor(s):

1. Condenser Internal defects - Condenser wall cracked penetration welds, Leaking pipe flanges, Steam bellows crack, Water Box Flange leak
2. Condenser internal defects - steam seal piping leaks, LP extraction steam piping expansion bellow leaks

Apparent Cause(s)

1. Equipment Reliability LTA - Maintenance Calibration and Testing LTA - Predictive Maintenance & Inspection Program LTA
2. Other - Evaluated Risk - Occurrence of an accepted risk
3. Management and Leadership LTA - Leadership System Design LTA - Responsibility for item/activity not adequately defined.

Contributing Cause(s)

EXTENT OF CONDITION

This condition could exist on the other Sabine units, all of which have a similar surface condenser. Plans are in place and actions taken to investigate the current state of the Unit 1-3-4-5 condensers, vacuum pumps, etc. at Sabine and minimize these issues in the future.

Entergy

Apparent Cause Analysis Report
Title:
Date:

Initial and Future Corrective Action:	

Initial Corrective Action:

The LP hoods/condenser manways were opened following the 3/10/17 event and inspected Minor repairs were made and the unit was in startup on 3/21/17 with a similar event. The LP hoods/condenser manways were opened again and more problems were found and repaired after more extensive investigation All work was completed

Future Corrective Action Plan:

Identified Cause	Corrective Action	Resp. Person	Due Date
Equipment Reliability LTA - Maintenance Calibration and Testing LTA - Predictive Maintenance & Inspection Program LTA	Ensure that PMs are written to do hotwell inspections and condenser hydros annually and clean vacuum pump seal water coolers and perform borescope inspections (OEM) of the vacuum pumps every 2 years.	Aaron Miller	completed
Other - Evaluated Risk - Occurrence of an accepted risk	Not all leaks and issues can	Ralph Crosby	completed
Management and Leadership LTA - Leadership System Design LTA - Responsibility for item/activity not adequately defined	The condenser and associated equipment now has direct 'ownership' and responsibility for planning for future projects and executing repairs.	Ralph Crosby	completed

Apparent Cause Analysis Report
Title:
Date:

Attachments:	
Attachment 1: Why Staircase Analysis	
Attachment 2: OIS Event – high vacuum during last part of 3/10 shutdown	
Attachment 3: OIS Event – high vacuum excursion #1 on 3/21 startup attempt	
Attachment 4: OIS Event – high vacuum excursion #2 on 3/21 startup attempt	
Attachment 5: Relevant Pictures	
Attachment 6: Planned Repairs	
Attachment 7: Results of Condenser Hydro and Resulting WRs – 3/22/17	
Attachment 8: Existing and Updated PMs	
Attachment 9: New PMs	

Attachment 1: Why Staircase Analysis

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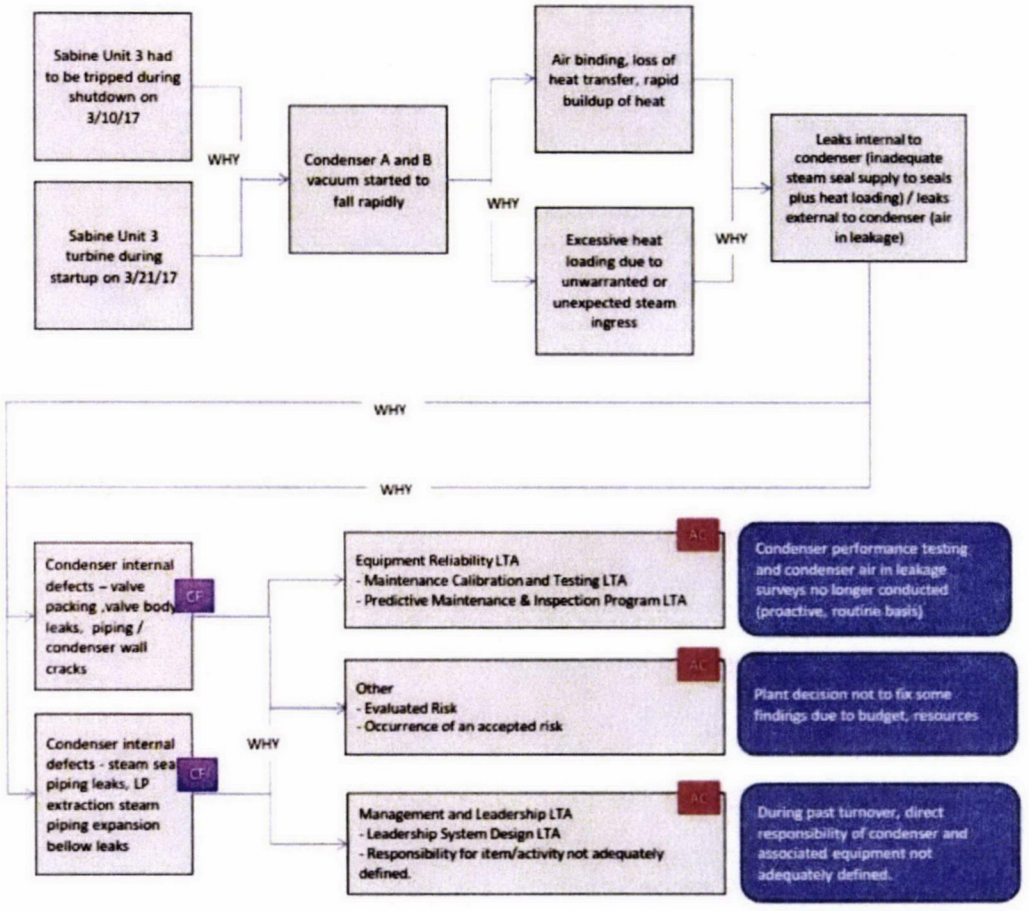
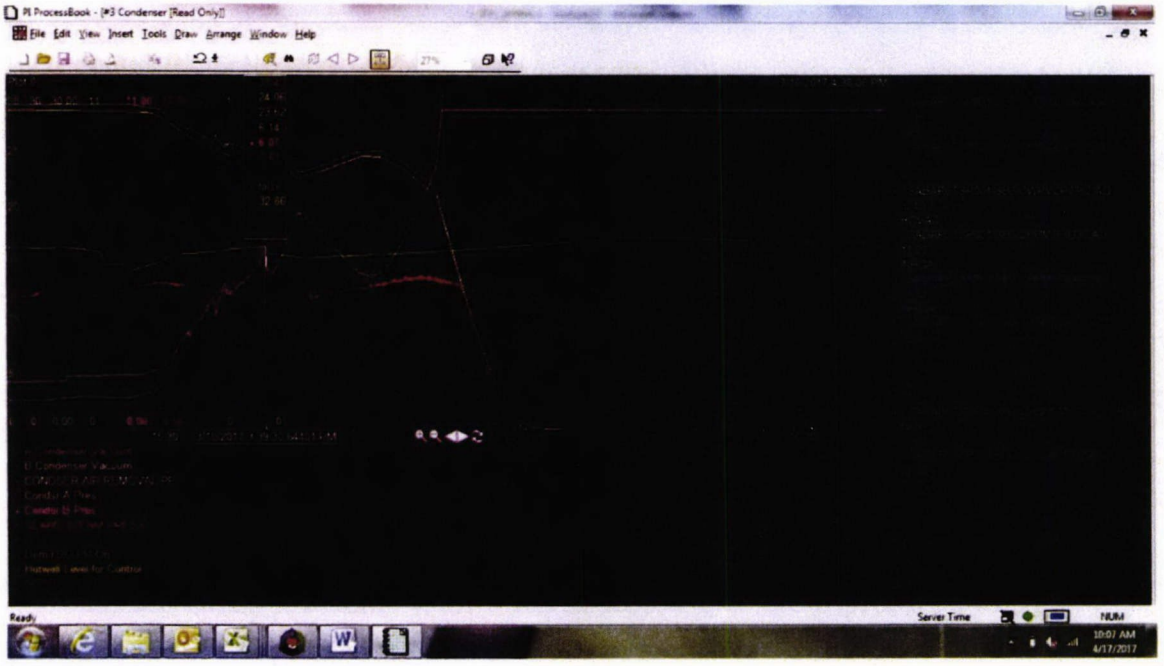
Apparent Cause Analysis Report
Title:
Date:



Attachment 2: OIS Event – high vacuum during last part of 3/10 shutdown



Attachment 3: OIS Event – high vacuum excursion #1 on 3/21 startup attempt

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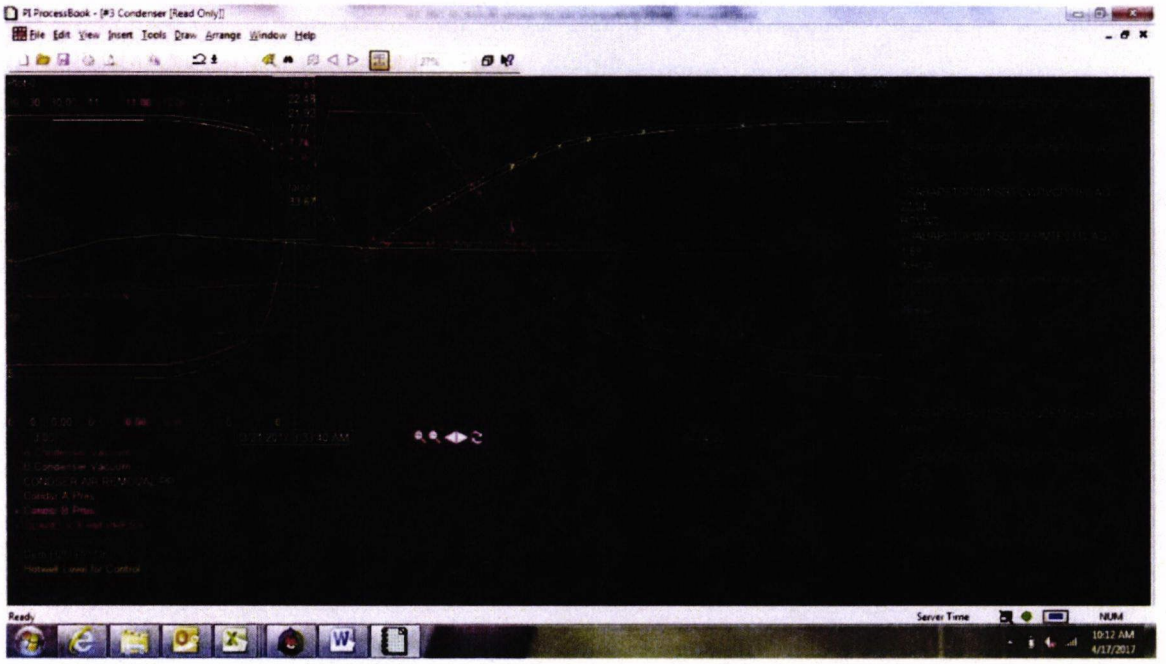
Apparent Cause Analysis Report
Title:
Date:



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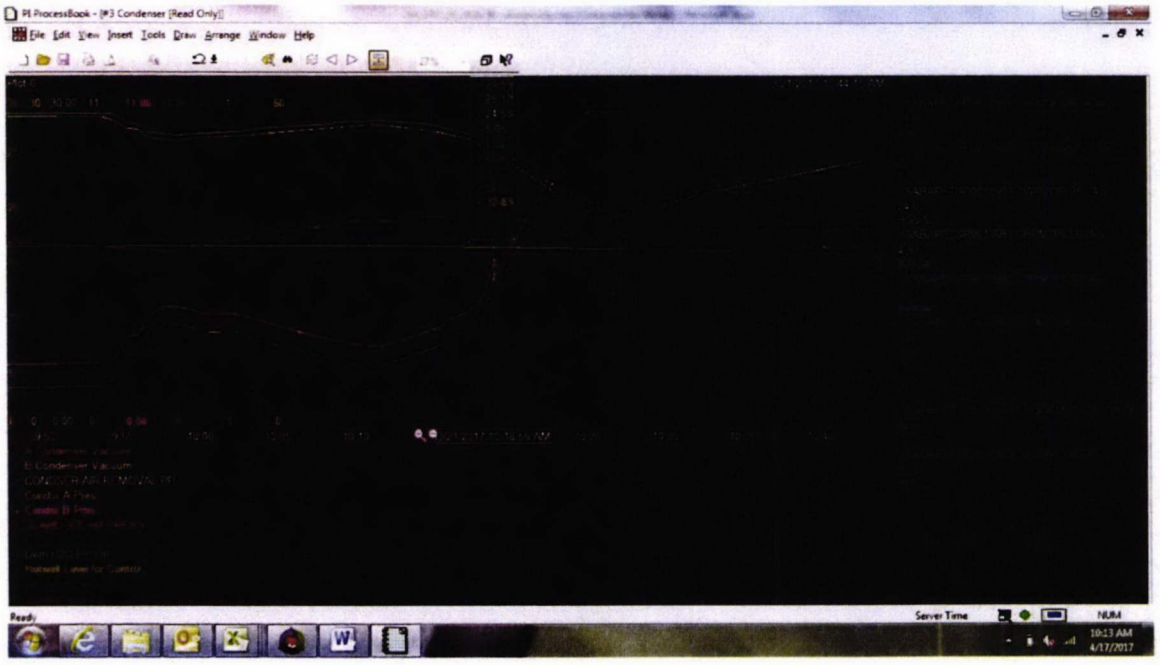
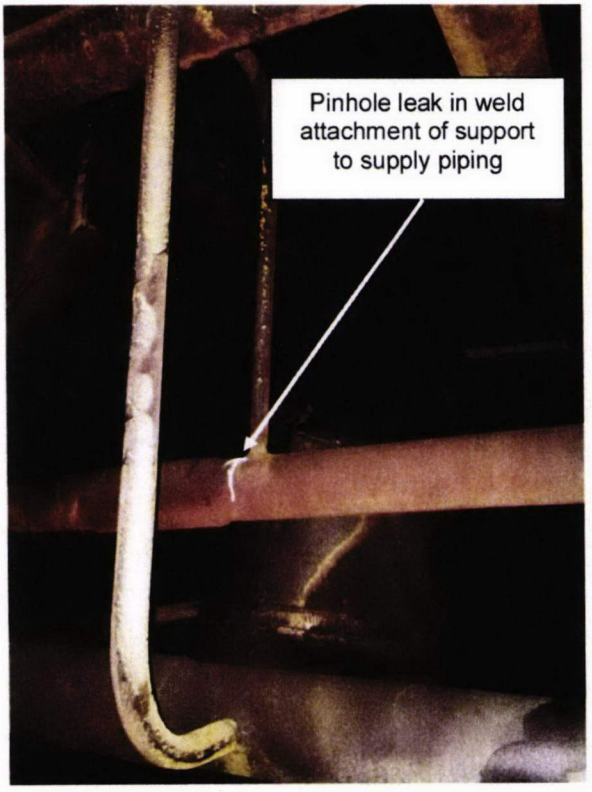
Apparent Cause Analysis Report
Title:
Date:

Attachment 4: OIS Event – high vacuum excursion #2 on 3/21 startup attempt



Attachment 5: Relevant Pictures


Pinhole leak in weld attachment of support to supply piping

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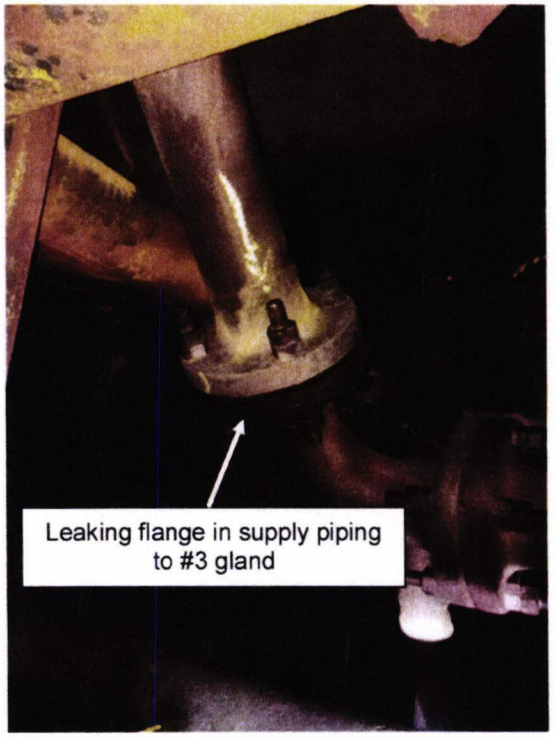
Apparent Cause Analysis Report
Title:
Date:



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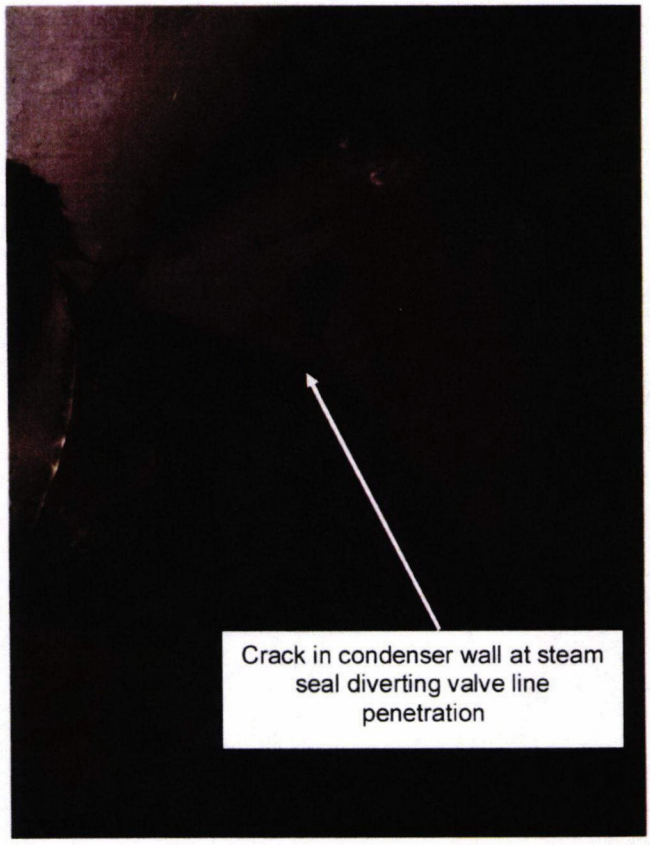
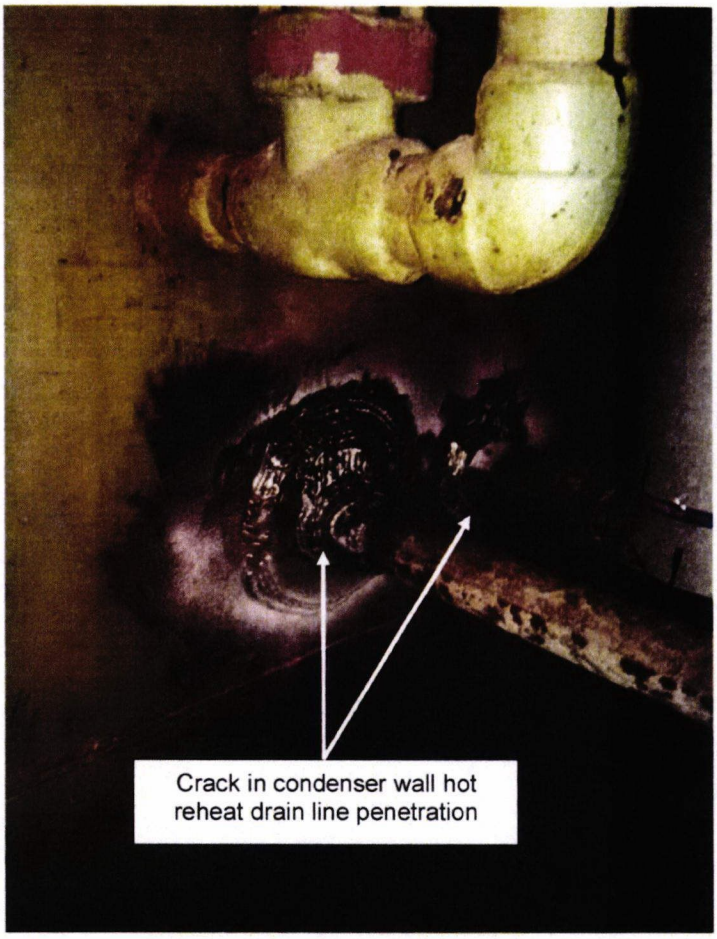
Apparent Cause Analysis Report
Title:
Date:




Crack in condenser wall hot reheat drain line penetration

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Apparent Cause Analysis Report
Title:
Date:

Attachment 6: Planned Repairs

W/R#	Work Description	Impact
239612	planning and procurement needed to replace a 5th extraction steam bellows inside the south condenser just below the south LP turbine. There are hairline cracks in this 12" expansion bellows with 7 convolutions and lap joint flanges. see Aaron for specifics and Cost Est tab for cost estimates.	heat loading issue inside the condenser if this fails.
239608	Inside the north condenser, the steam seal supply piping (3") to the #6 seal appears to have a spot where the piping is not horizontal. See aaron for pictures and location. The welds line need cut to see where the cold spring is, from there a plan can be made how to repair so that any stress is taken off the pipe/weld. See Cost Est tab, duration 5 days. additional support(s) may be needed	future condenser vacuum issue if this fails (will affect steam seal pressure to this gland)
216963	Perform an engineering evaluation of waterbox and condenser to determine why condenser tube failures are more frequent on D waterbox in comparison to the others. The evaluation will involve an inspection, engineering study, and possible eddie current testing. This needs to be done durng the next major outage. Details of APS inspections has been included int he Special Instructions Tap.	suspect damaged spargers/baffles inside south wall of condenser, a lot of heater drains, both BFP recircs, steam lead drains etc come in here
239233	WR to pull and clean the 3A and 3B seal water coolers. These are plate and frame coolers and Aaron is investigating the feasibility of completely pulling them apart to clean vs. just flushing as best possible. Duration 1 week, see Cost Est tab	would improve vacuum pump performance and benefit overall condenser vacuum
238317	This WR is for a hotwell inspection during the next outage. There have been several cracked pipes and there is currently a crack in the north wall of the shell, above the seal steam diverting line penetration. See Cost Est, duration assuming internal repairs 3 weeks.	would improve vacuum pump performance and benefit overall condenser vacuum
239232	WR for field service fiberscope inspection of the 3A and 3B vacuum pumps during the Fall 2017 outage. 1 day of inspection and about $1000 for NASH	would improve vacuum pump performance and benefit overall condenser vacuum - knowing which pump(s) to plan for what repairs
231224	Water leaking from insulation near drain line on bottom of cooler directly above 3D Outlet Water box. SCAFFOLD WILL BE NEEDED. (AM 3/26/17) this might be the leak from the drain line/valve itself (239604) but would be good to check and make sure. See estimates in Cost Est tab	source of air in leakage, overloads vacuum pumps and blankets tubes, causing poor heat transfer
231337	FINDINGS BY JOHN KUNEFKE SHOWS THAT THERE IS A LEAK IN CONDENSATE SUCTION HEADER AREA NEAR THE CONDENSER. IT HAS BEEN SUGGESTED TO LEAVE DECK PLATE OFF IN THIS AREA AND BARRICADED UNTIL OPPORTUNITY PRESENTS ITSELF FOR A HYDROSTATIC TEST WHEN UNIT OFF LINE WITH NO VACUUM IN THE CONDENSER.	source of air in leakage, overloads vacuum pumps and blankets tubes, causing poor heat transfer
239724	The larger door/manway on the north condenser, east side, 2nd elevation - slope needs cleaned and resurfaced the next time it is opened. Clean all surfaces, repair as needed, install new gasket. Tentatively this will be opened during the spring 2017 to install a new 5th heater flanged extraction bellows. That would be a good time to re-do the door. It is possible that some of the studs/bolts might need work too.	source of air in leakage, overloads vacuum pumps and blankets tubes, causing poor heat transfer
232833	ENGINEERING REVIEW - VNeed to look at modifing the drain line coming directly off the tank. The drain line continues to get plugged with scale and debris. Need to look at install stand off piping inside of tank, so the drain line won't be flowing all the debris in the bottom of the tank.	benefit to waterbox priming system and overall condenser vacuum
227408	WR CREATED TO HAVE THE PRIMING TANK INSPECTED FOR TANK INTEGRITY. TANK HAS BEEN PATCHED BY OPS BUT IS IN NEED OF A LONG TERM REPAIR. PRIMING VACUUM HAS DEGRADED, CAUSING THE PRIMING PUMPS TO RUN CONSISTANTLY. ALSO, THE LADDER TO THE TANK HAS BEEN RED TAGGED SO SCAFFOLDING WILL BE NEEDED TO CHECK. THERE IS ALSO A WR CREATED #204202 TO HAVE THE PIPING LOOKED AT DURING OUTAGE	benefit to waterbox priming system and overall condenser vacuum
232925	INLET PRIMING LINE BETWEEN 3C AND 3D INLET WTR BOXES IS PLUGGED.	benefit to waterbox priming system and overall condenser vacuum
228928	Complete replacement of Priming Tank and 4" lines from Tank to 3rd Floor. This line is 4" Carbon Steel Sch 40 and is from the waterboxes to the priming tank at Turbine Building Roof. See below Results from WR 204202 completed in 2015 to repair elbow in priming line. At time of repair it was noted that the line was thin. This priming piping is very thin. the portion of piping where the holes were at the 90 was replaced. The other piping is thin all the way to the third floor and will need to be replaced at next major outage. During the Fall 2015 outage this would have required major scaffolding and welding to replace this large amount of piping. This needs to be planned and fabbed up to be replaced at next outage. Can be done in 2 week outage, but will need to be planned and prefabbed. See drawings 11020-FP-31A and B and drawing 11020-FM-8A. All piping is class 121. I could not find data sheet on tank. Need to get photo of name plate.	benefit to waterbox priming system and overall condenser vacuum

Attachment 7: Results of Condenser Hydro and Resulting WRs – 3/22/17

3/22/17 - Condenser hydro above expansion joint (level 19.4 ft – instrument topped out?) – LEAKS

1. 1st El. south side of condenser - The two hot reheat drains coming into the south wall of the condenser near the BFP recircs. These are known and have been written up for permanent repairs 238316 and temporary repairs to minimize leaks 239574. [REPAIRED SPRING 2017]

2. 2nd El. mezzanine west side - MOV 12 main steam lead drain – decent leak out of top of packing. Ops said it was in outage package but cut. [WR 222626 – written up 5/15/15]

3. Under turbine - Ventilator Valve – did not see leak, water level might not have been that high WR 222831 – written up 5/21/15]
4. 2nd El. mezzanine west side – 2nd extraction pressure tap on top of pipe [WR 222630 – written up 5/15/15]

5. NW corner of cond ground floor – up on platform - 7B manual block valve to EH9 – ladder is flagged with red tape [WR 239605]

6. 2nd El. catwalk north of condenser - Seal Steam Diverting valve has a good leak on the bottom, there is a linkage to another valve, it is leaking out of the shaft penetration. [WR 239588]

IMG_8937.MOV

7. 1st El., north side condenser, about 10 ft up – steam seal diverting valve penetration to condenser. This is the worst leak, it actually sprays with about 10 ft of head on it. (238316 / 239574) [REPAIRED SPRING 2017]

IMG_8935.MOV

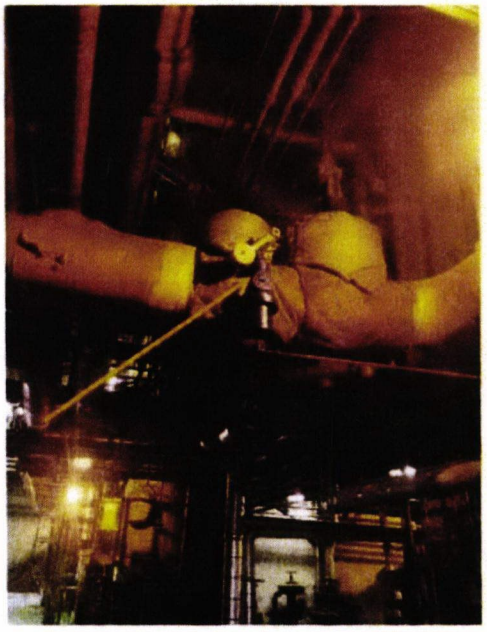
8. 1st El., NE corner of condenser - Rheovac spare probe tap – ball valve either not closed or leaks
9. 2nd El. catwalk west side of condenser – MOV 48 – small line above 5th pt heater [WR 239604]

IMG_8939.MOV

10. 2nd El. catwalk west side of condenser – small drain line below 5th pt heater [WR 239603]

IMG_8938.MOV

11. 1st El. overhead about 30 ft inside turbine building from the south – 1st Extr NRV leaks (blue) [WR 239602]



12. 1st EL. east and west side of condenser – small waterbox flange leaks

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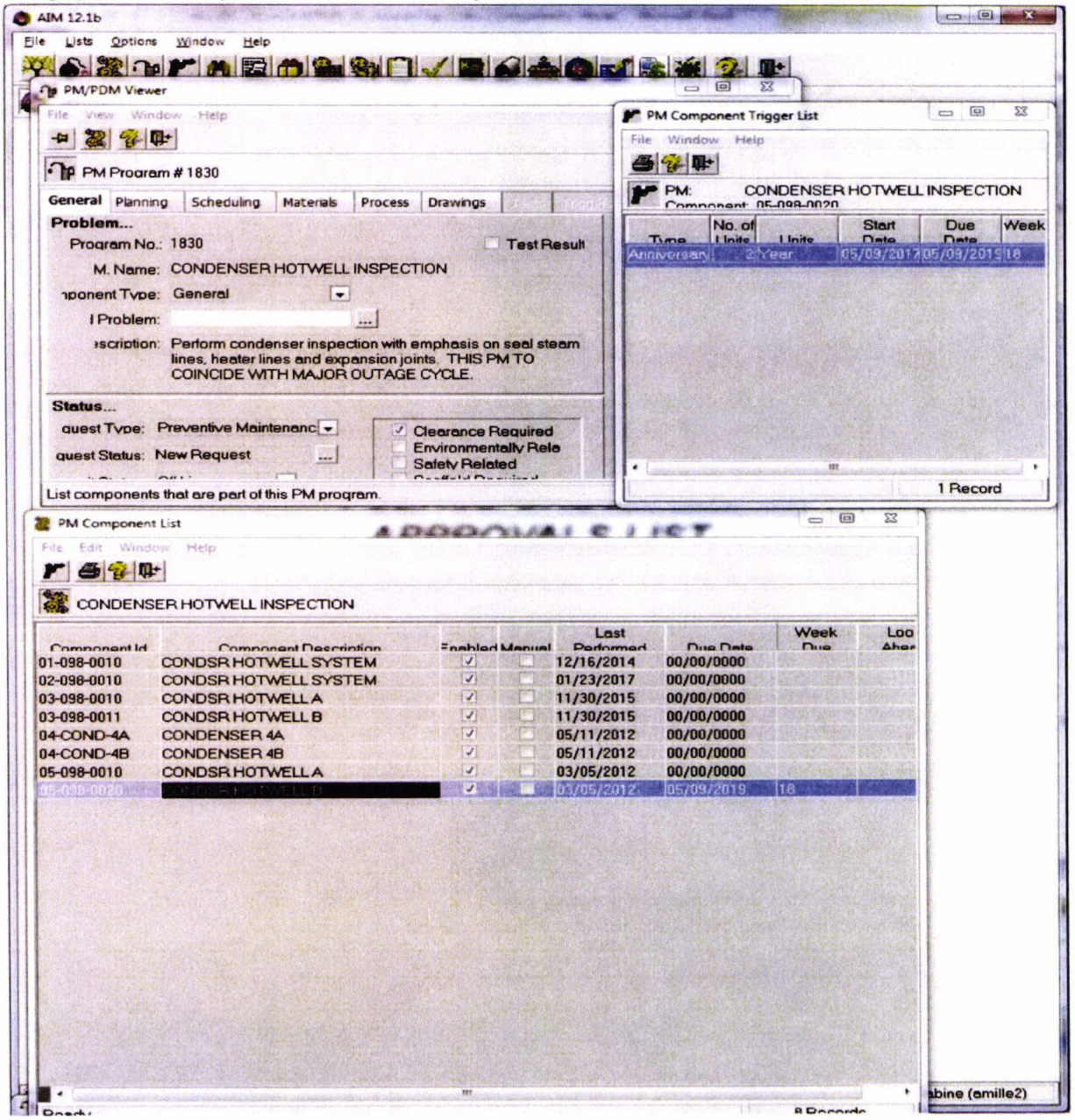
Apparent Cause Analysis Report
Title:
Date:

Attachment 8: Existing and Updated PMs

Condenser PM 1830 –

Being updated to incorporate EPRI condenser inspection details.



Entergy

Apparent Cause Analysis Report
Title:
Date:

Checklist of Condenser Hotwell Inspections (from EPRI Field Inspection Handbook 3002006037) – for more detail refer to actual handbook

Waterboxes:

- localized and extensive signs of galvanic corrosion, pitting, cracks, etc. in the waterbox structure itself.
- Macro or microfouling
- Integrity of welds
- Manway gasket surfaces
- Anodes and associated equipment

Tubesheets:

- Integrity of plugs
- Condition of coatings (if applicable)
- Ligament cracks between tubesheet holes
- Distortion of tubesheet (bowing or twisting)
- Tube inlet corrosion (usu copper allow tubes), scaling inside tubes, discoloration of metal (dealloying)
- Check consistency of tube protrusion/recession

Hotwell

- Foreign material and general cleanliness
- Erosion, cracks, weld failures, corrosion of all internal components
- Condition of tube support plates, spargers, impingement plates
- Evidence of steam/water erosion
- Support structure cracks
- Cracks in turbine expansion joint or protective cover

Tube Bundle

- Loose or missing tube stakes
- Erosion/corrosion from direct steam impingment / flashing (look for localized areas that look different from others)
- Tube fatigue or damage due to tube vibration, distorted tube support plate
- Any other tube damage

Structural Components

- Damage of air off take piping
- Steam seal piping
- Slop drain piping
- Cracks at seams or penetrations to the condenser shell
- Distortion or erosion of components such as flanges, channels, pipe supports
- Lagging of neck heater
- Piping / expansion bellows of neck heater extraction steam

Instrumentation

- Thermowells
- Pressure taps
- Level gages
- Basket tip condenser pressure probes

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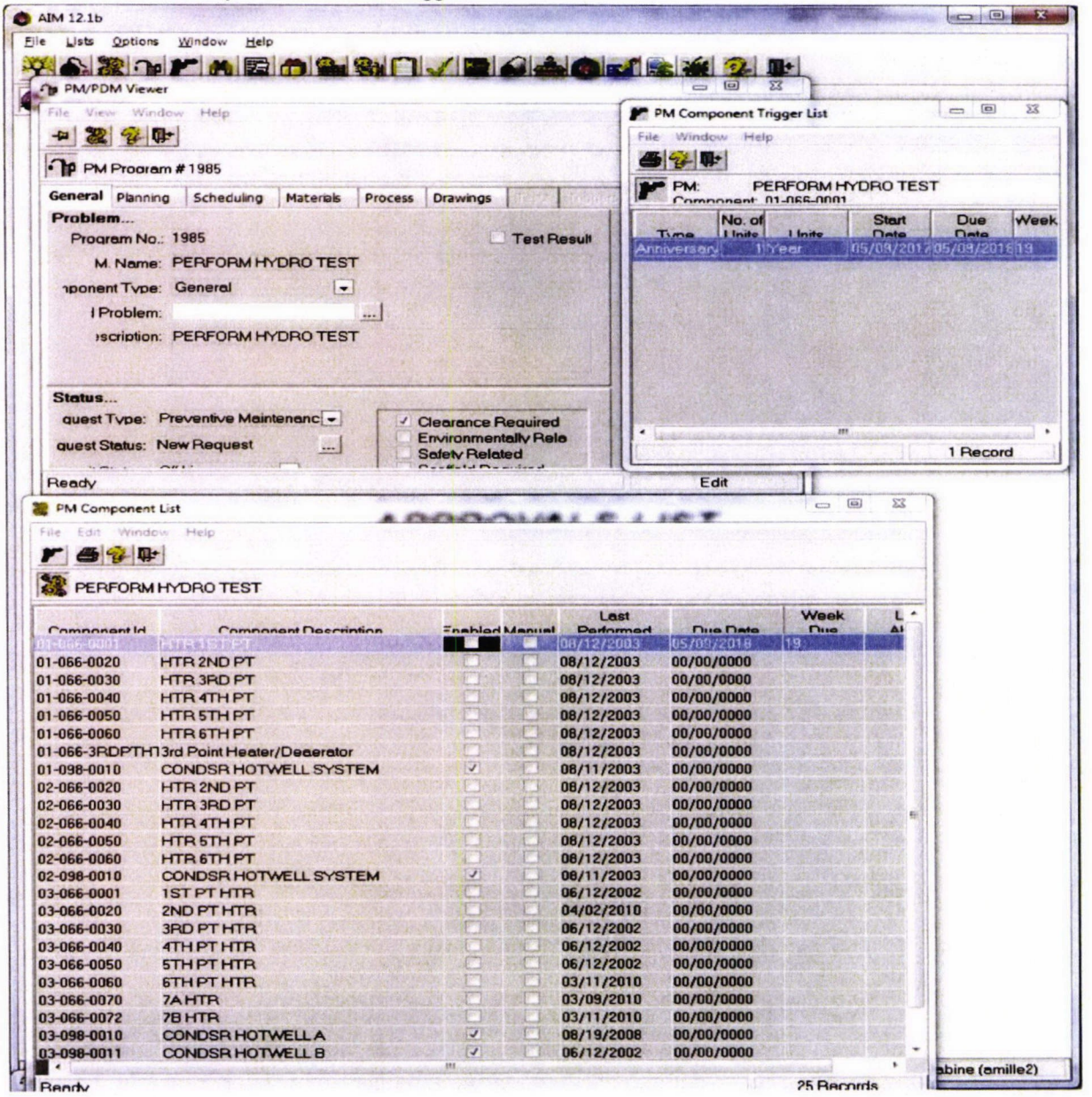
Apparent Cause Analysis Report
Title:
Date:

Condenser PM 1985 –

Unit 1-2-3 condenser hydro set to annual trigger.



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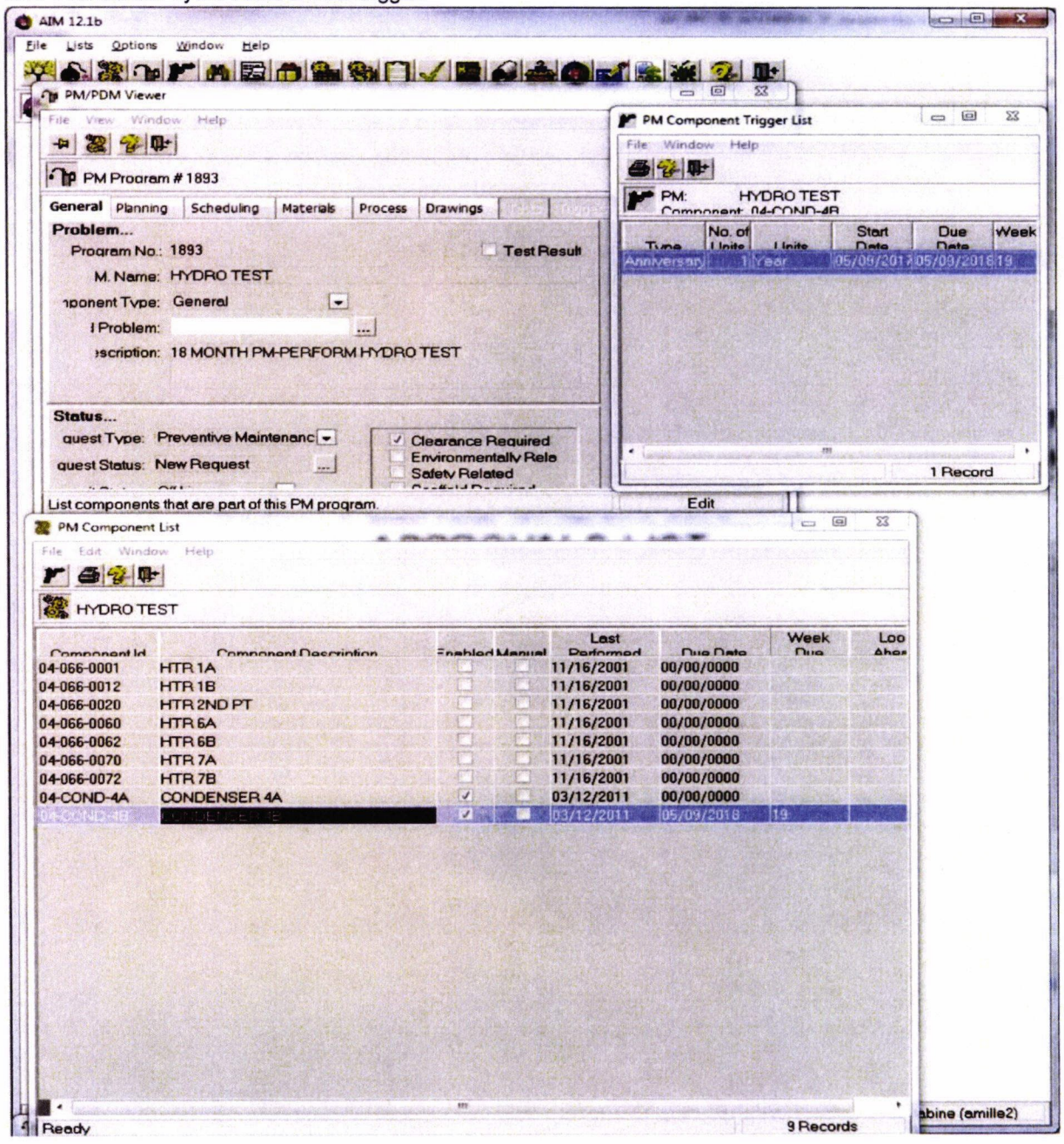
Apparent Cause Analysis Report
Title:
Date:

Condenser PM 1893 –

Unit 4 condenser hydro set to annual trigger.



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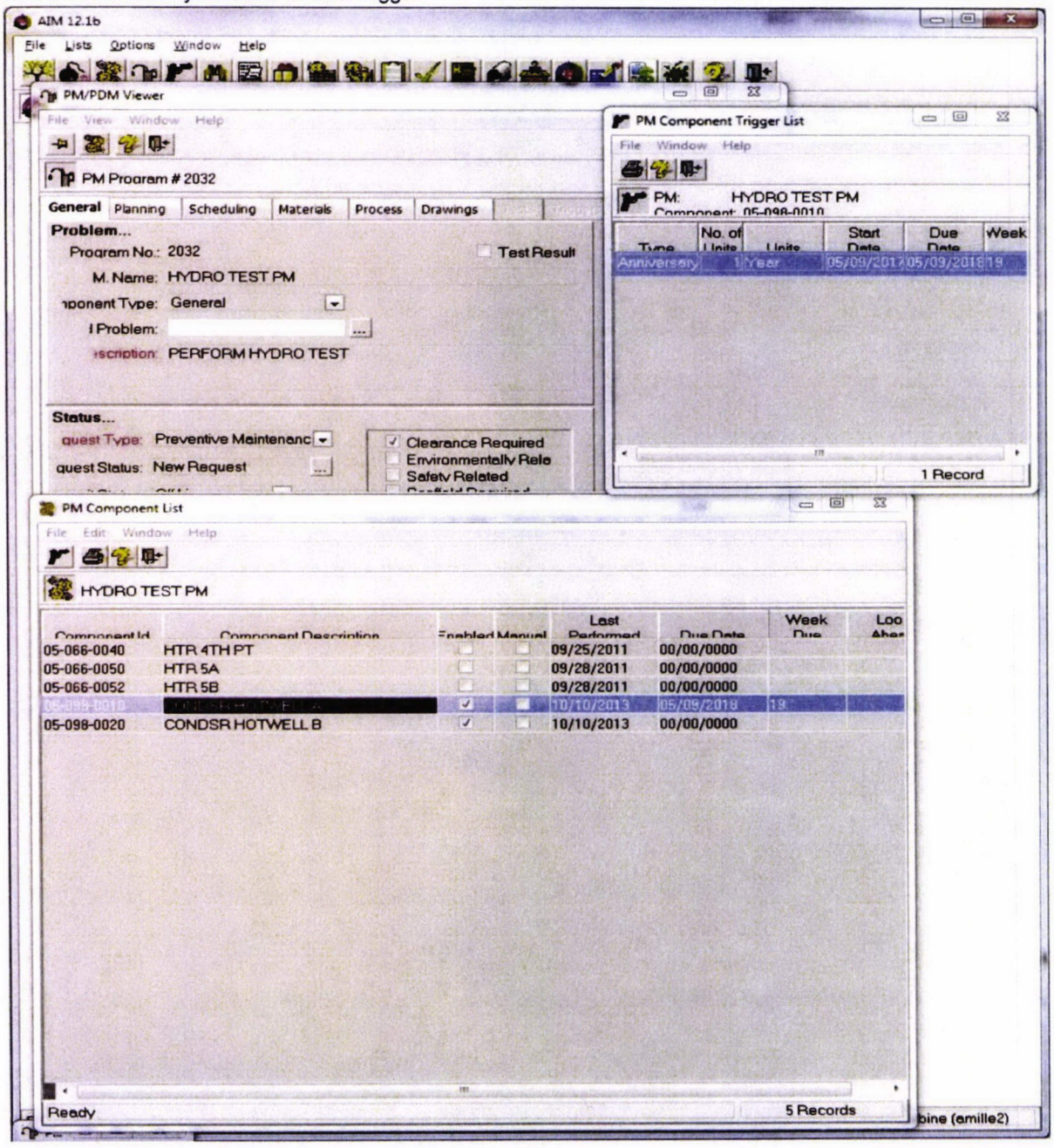
Apparent Cause Analysis Report
Title:
Date:

Condenser PM 2032 –

Unit 5 condenser hydro set to annual trigger.



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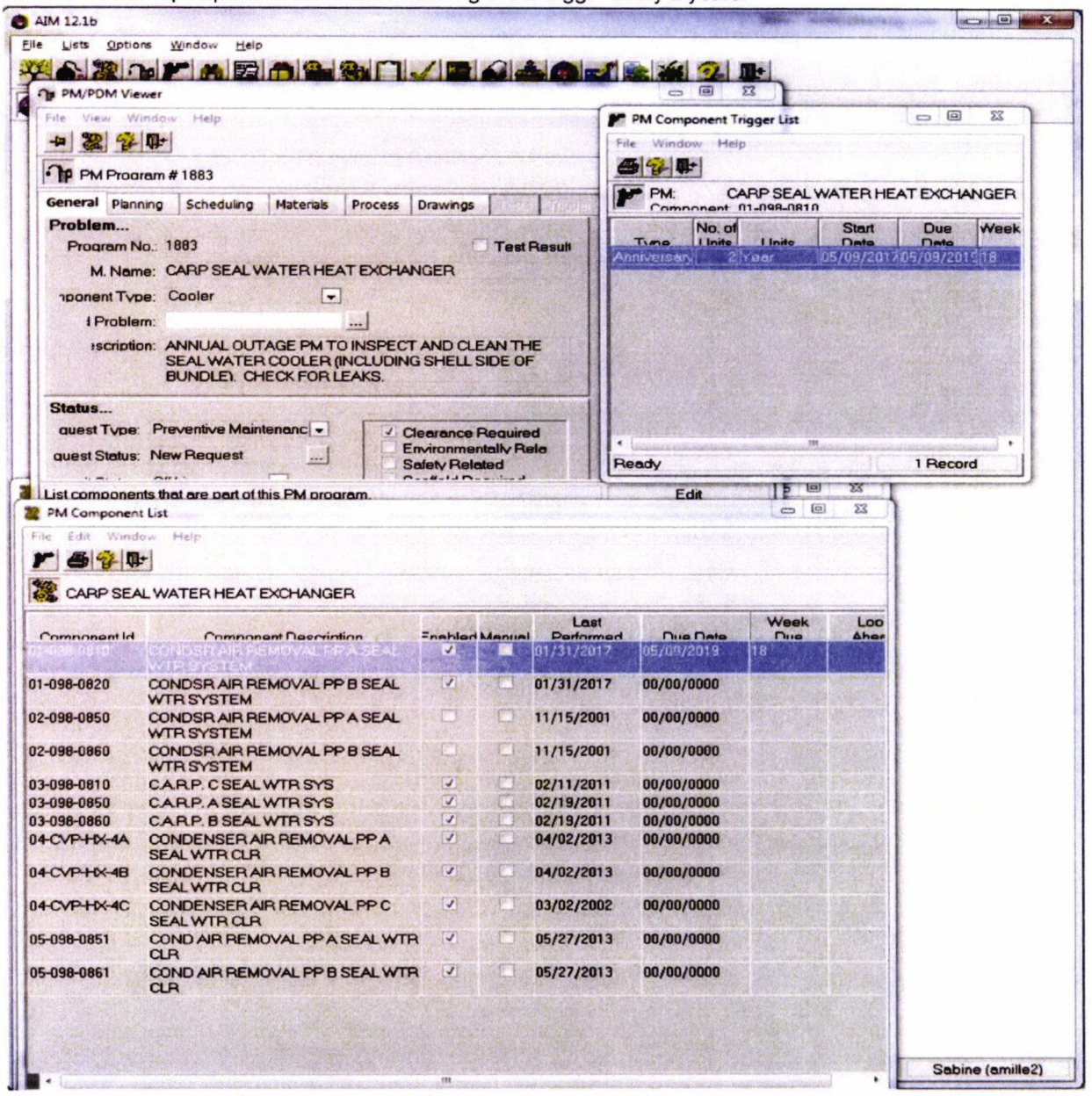
Apparent Cause Analysis Report
Title:
Date:

Condenser Vacuum Pump PM 1883 –

All units' vacuum pump seal water cooler cleaning set to trigger every 2 years.



Attachment 9: New PMs

Apparent Cause Analysis Report
Title:
Date:

A new PM is being written to perform a borescope / field inspection of the NASH vacuum pumps every 2 years. This will be for all working Sabine pumps:

Component	Unit	Pump
01-098-0210	1	A
01-098-0220	1	B
03-098-0210	3	A
03-098-0220	3	B
04-098-0210	4	A
04-098-0220	4	B
04-098-0230	4	C
05-098-0210	5	A
05-098-0220	5	B

The unit 1, 3, and 4 pumps were inspected in March 2017 so just the unit 5 pumps remain to be borescoped (probably will be 2018).

SOAH Docket No. 473-20-0259
PUC Docket No. 49916
ETI Exhibit No 16

Entergy Services, LLC
919 Congress Ave , Suite 701
Austin, TX 78701
Tel (512) 487-3957
Fax 512-487-3958

Entergy

March 10, 2020

Ana Trevino
Public Utility Commission of Texas
1701 N. Congress Avenue
P.O. Box 13326
Austin Texas 78711-3326

Re: *Docket No. 49916 - Application of Entergy Texas, Inc. (ETI) for Approval to Reconcile Fuel and Purchased Power Costs* – Errata No. 1

Dear Ms. Trevino:

Please see the attached Errata No. 1, which clarifies the basis for differences between emissions allowance cost values on Attachment B to ETI's Application in this proceeding and Schedule FR-16. In short, Attachment B reflects information as it appeared in ETI's monthly fuel reports filed with the Commission, which included an adjustment in July 2016 to incorporate Mercury and Air Toxics Standards ("MATS") costs for January through July of 2016. Schedule FR-16 reflects those MATS compliance costs in the months in which they were incurred. The small net difference of $14,423 for emissions costs for January through July 2016 between Attachment B and Schedule FR-16 is associated with MATS compliance costs included in the July 2016 adjustment shown in Attachment B but incurred prior to the Reconciliation Period.

Thank you for your assistance in this matter. If you have any questions, please contact me at (512) 487-3945.

Sincerely,

George Hoyt
ATTORNEY FOR
ENTERGY TEXAS, INC.

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Errata No 1

Reconcile Emissions Allowance Cost from Application Att. B and Schedule FR-16

Application Attachment B		FR-16 Data (rows 86-89)				Comparison			Explanation
	Emissions Allowances	4118	502	509	TOTAL ALLOW				
Month	Eligible Cost (FR-16)	GAINS FROM DISP OF ALLOW	ALLOWANCES	ALLOWANCES	REVENUES AND EXPENSES	App Att B	FR-16	Diff	
Apr-16	**21,826**	**(10)**	**171,951**	**246**	**172,187**	**21,826**	**172,187**	**(150,361)**	In FR-16, the emissions allowance costs data is included in rows 86-89. However, there are some differences in the data between FR-16 and the Application Attachment B data for April through July of 2016. The Application Attachment B information is consistent with ETI's monthly fuel reports and did not capture MATS compliance costs in April through June of 2016. In July 2016, a true-up was added to capture MATS compliance costs for the prior 6 months (including some months outside of the reconciliation period). The FR-16 data reflects the MATS costs in the months in which the costs were incurred
May-16	**51,076**	**0**	**117,087**	**3,725**	**120,812**	**51,076**	**120,812**	**(69,736)**	
Jun-16	**36,427**	**0**	**141,218**	**19,290**	**160,508**	**36,427**	**160,506**	**(124,079)**	
Jul-16	**535,271**	**0**	**153,631**	**23,040**	**176,671**	**535,271**	**176,671**	**358,600**	
Aug-16	155,394	0	122,786	32,608	155,394	155,394	155,394	0	
Sep-16	64,030	0	39,676	24,353	64,030	64,030	64,030	0	
Oct-16	65,495	0	60,464	5,031	65,495	65,495	65,495	0	
Nov-16	67,289	0	64,950	2,340	67,289	67,289	67,289	0	
Dec-16	220,252	0	216,355	3,897	220,252	220,252	220,252	0	
Jan-17	51,247	0	49,646	1,601	51,247	51,247	51,247	0	
Feb-17	(23,658)	0	(11,647)	(12,011)	(23,658)	(23,658)	(23,658)	0	
Mar-17	107,502	0	107,502	0	107,502	107,502	107,502	0	
Apr-17	3,278	(9)	3,287	0	3,278	3,278	3,278	0	
May-17	3,648	0	1,449	2,199	3,648	3,648	3,648	0	
Jun-17	80,121	0	77,318	2,803	80,121	80,121	80,121	0	
Jul-17	259,824	0	255,981	3,843	259,824	259,824	259,824	0	
Aug-17	23,430	0	20,705	2,725	23,430	23,430	23,430	0	
Sep-17	189,338	0	186,071	3,267	189,338	189,338	189,338	0	
Oct-17	123,272	0	123,458	(185)	123,272	123,272	123,272	0	
Nov-17	40,723	0	40,723	0	40,723	40,723	40,723	1	
Dec-17	202,692	0	202,692	0	202,692	202,692	202,692	1	
Jan-18	103,550	0	103,549	0	103,549	103,550	103,549	1	
Feb-18	54,012	0	54,012	0	54,012	54,012	54,012	(0)	
Mar-18	32,643	0	22,191	10,452	32,643	32,643	32,643	(0)	
Apr-18	22,118	0	22,118	0	22,118	22,118	22,118	0	
May-18	126,105	0	123,224	2,881	126,105	126,105	126,105	(0)	
Jun-18	188,137	0	185,749	2,388	188,137	188,137	188,137	(0)	
Jul-18	170,315	(9)	143,309	27,015	170,315	170,315	170,315	0	
Aug-18	224,043	0	198,274	25,769	224,043	224,043	224,043	0	
Sep-18	175,145	0	160,107	15,038	175,145	175,145	175,145	0	
Oct-18	114,117	0	110,574	3,544	114,117	114,117	114,117	0	
Nov-18	56,558	0	56,558	0	56,558	56,558	56,558	0	
Dec-18	94,456	0	94,456	0	94,456	94,456	94,456	(0)	
Jan-19	71,538	0	71,538	0	71,538	71,538	71,538	0	
Feb-19	67,472	0	67,472	0	67,472	67,472	67,472	0	
Mar-19	35,300	0	35,301	0	35,301	35,300	35,301	(0)	

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SOAH Docket No. 473-20-0259
PUC Docket No. 49916
ETI Exhibit No. 17

Entergy Services, LLC
919 Congress Ave., Suite 701
Austin, TX 78701
Tel (512) 487-3957
Fax 512-487-3958

Entergy

May 6, 2020

Ana Trevino
Public Utility Commission of Texas
1701 N. Congress Avenue
P.O. Box 13326
Austin Texas 78711-3326

Re: *Docket No. 49916 - Application of Entergy Texas, Inc. (ETI) for Approval to Reconcile Fuel and Purchased Power Costs* – Errata No. 2

Dear Ms. Trevino:

Please see the attached Errata No. 2, which corrects a portion of ETI witness Mr. Scott M. Celino's rebuttal testimony. Mr. Celino's rebuttal testimony contained an error in that it referenced a Rough Production Cost Equalization ("RPCE") adjustment in Docket No. 43998 as an example of an RPCE adjustment amount being allocated based on usage during the month in which the adjustment was booked to eligible fuel expense. Instead, this adjustment was allocated among classes based on usage during the 2005 historical test period. The errata strikes the portion of Mr. Celino's rebuttal testimony related to this citation.

Thank you for your assistance in this matter. If you have any questions, please contact me at (512) 487-3945.

Sincerely,

George Hoyt
ATTORNEY FOR
ENTERGY TEXAS, INC.

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950 100

SOAH DOCKET NO. 473-20-0259
PUC DOCKET NO. 49916

APPLICATION OF ENTERGY TEXAS, INC. FOR AUTHORITY TO RECONCILE FUEL AND PURCHASED POWER COSTS	§ § § §	BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS

REBUTTAL TESTIMONY

OF

SCOTT M. CELINO

ON BEHALF OF

ENTERGY TEXAS, INC.

APRIL 2020

ENTERGY TEXAS, INC.
REBUTTAL TESTIMONY OF SCOTT M CELINO
SOAH DOCKET NO. 473-20-0259
PUC DOCKET NO. 49916

TABLE OF CONTENTS

I. INTRODUCTION AND PURPOSE

Q1. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND OCCUPATION.

A. My name is Scott M. Celino. My business address is 639 Loyola Avenue, New Orleans, Louisiana 70113. I am employed by Entergy Services, LLC ("ESL"), the service company affiliate of Entergy Texas, Inc. ("ETI" or the "Company"), as Manager in the Fuel & Special Riders Department.

Q2. ARE YOU THE SAME SCOTT M. CELINO WHO SUBMITTED DIRECT TESTIMONY IN THIS DOCKET?

A. Yes, I am.

Q3. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my rebuttal testimony is to respond to Mr. Norwood's recommendation that the Commission order ETI to address in a future proceeding the allocation of a $33.2 million FERC-ordered refund that was credited to eligible fuel expense in December 2018.

II. RESPONSE TO MR. NORWOOD

Q4. WHAT IS THE FERC-ORDERED REFUND CREDIT REFERRED TO BY MR. NORWOOD?

A. ETI received a refund from Entergy Arkansas, LLC in the amount of $33.2 million pursuant to FERC's Order in Docket No. EL09-61. The Company booked this

refund as a credit to eligible fuel expense in the month of December 2018, the month it was received.

Q5. DO YOU AGREE WITH MR. NORWOOD'S RECOMMENDATION TO ADDRESS THE ALLOCATION OF THAT CREDIT TO CUSTOMER CLASSES IN A FUTURE PROCEEDING?

A. No, I do not.

Q6. PLEASE EXPLAIN.

A. It appears that Mr. Norwood agrees it was appropriate to credit the refund amount to fuel expense because he recommends the allocation of that credit to customers occur in a future fuel proceeding. However, I disagree with Mr. Norwood's claim that the allocation of the credit among rate classes should be on a basis other than usage during the month in which the credit was booked to eligible fuel expense.

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Q7. WHAT IS YOUR [redacted] BASIS OF DISAGREEMENT WITH MR. NORWOOD?

A. I disagree that an attempt to address any inherent intergenerational inequities in the timing of the refund payment will be productive. While Mr. Norwood makes no specific recommendation regarding how the FERC-ordered refund should be allocated to customer classes, he notes that the refund pertains to the period 2000 – 2009 and states "it will be important for the credit to be allocated to Texas retail rate classes in a manner that equitably reflects the actual overcharges that led to the refund, not simply their usage in December of 2018."[2] That testimony suggests to me that Mr. Norwood is looking to allocate the credit in some manner that takes into consideration usage over the period 2000 – 2009. Beyond the fact that developing such an allocation would be administratively burdensome, such an approach would do no better in addressing intergenerational inequities than the Company's proposal because customers who existed on ETI's system for a decade that is more than 10 years past are not the same as those existing today, and vice versa. There is simply no perfect solution to that issue. Accordingly, my view is that it is unnecessary to expend the resources of the Commission, its Staff, and

[2] Direct Testimony of Scott Norwood at p. 23.

parties in a future proceeding to try and develop a different approach [redacted] with RPCE Bandwidth true-up credits. Moreover, such a future proceeding could create even greater intergenerational inequities, as it will be even further removed from the 2000-2009 time period at issue.

III. CONCLUSION

Q8. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes.