

1 required to maintain plant reliability, manage costs, and realize the useful life of existing
2 equipment. The costs incurred for these projects were reviewed under the same strong
3 budgetary controls as I described were used for the Newman blanket project, and the
4 projects and costs were completed and incurred following reasonable managerial
5 decision - making.
6

7 Q53. THE ELEVENTH PROJECT IN YOUR LARGE CAPITAL ADDITIONS TABLE DR-2
8 ABOVE IS THE NEWMAN UNIT 4 GAS TURBINE 2 (GT-2) – 2ND SPARE ROTOR
9 ACQUIRE PROJECT. WHAT WAS THIS PROJECT AND WHY WAS IT
10 UNDERTAKEN?

11 A. The title of this project incorrectly implies that a second spare rotor was purchased. For
12 clarification, this project was to purchase only one spare rotor for Newman Unit 4 GT-2.
13 The Company purchased a spare rotor for Newman Unit 4 GT-2 to replace the existing
14 rotor to re-establish safe and reliable operation and performance due to the original rotor
15 having significantly exceeded its recommended run hours by the original equipment
16 manufacturer ("OEM") by approximately 200,000 hours. The OEM recommends 100,000
17 run hours for this particular type of rotor in this particular type of turbine. This unit had
18 been operating for over 300,000 hours without refurbishment or replacement of the rotor.
19

20 Q54. THE TWELFTH PROJECT IN YOUR LARGE CAPITAL ADDITIONS TABLE DR-2
21 ABOVE IS THE NEWMAN UNIT 4 GAS TURBINE 1 (GT-1) – 501B SPARE BLADED
22 ROTOR PROJECT. WHAT WAS THIS PROJECT AND WHY WAS IT
23 UNDERTAKEN?

24 A. Similar to the Newman Unit 4 GT-2 project above, the Company purchased a spare rotor
25 for Newman Unit 4 GT-1 to replace the existing rotor to re-establish safe and reliable
26 operation and performance due to the original rotor having significantly exceeded its
27 OEM - recommended run hours. The OEM recommends 100,000 run hours for this
28 particular type of rotor in this particular type of turbine. This unit had been operating for
29 over 300,000 hours without refurbishment or replacement of the rotor.
30

1 Q55. THE THIRTEENTH PROJECT IN YOUR LARGE CAPITAL ADDITIONS TABLE
2 DR - 2 ABOVE IS THE NEWMAN UNIT 2 (U2) DISTRIBUTIVE CONTROL SYSTEM
3 (DCS) UPGRADE PROJECT. WHAT WAS THIS PROJECT AND WHY WAS IT
4 UNDERTAKEN?

5 A. The Newman U2 DCS Upgrade Project was undertaken due to a high failure rate on the
6 previous control system which had become obsolete and very difficult to operate and
7 maintain without the necessary vendor support and associated replacement parts. The
8 Ovation upgrade replaced all system controllers and field mounted components and
9 included updating the Burner Management System to meet current NFPA 80 codes.
10

11 Q56. THE FOURTEENTH PROJECT LISTED IN YOUR LARGE CAPITAL ADDITIONS
12 TABLE DR-2 ABOVE IS THE NEWMAN UNIT 4 (U4) GAS TURBINE 1 (GT-1)
13 MAJOR INSPECTION – CAPITAL IMPROVEMENTS PROJECT. WHAT WAS THIS
14 PROJECT AND WHY WAS IT UNDERTAKEN?

15 A. The Newman U4 GT-1 Major Inspection Project was undertaken to install the new turbine
16 rotor and components from the U4 GT-1 Spare Bladed Rotor Project noted above. During
17 inspection of the unit, it was determined that the generator required additional maintenance.
18 The work was added to the ongoing outage to maintain safe, efficient and reliable operation
19 of the unit and prevent unplanned outage time in the future. The additional work included
20 repairs to the turbine lubricating oil system and an oil flush to remove impurities from the
21 lubricating oil lines; repairs to various generator components such as the radial lead seals,
22 stator, lead skid, and exciter, along with the associated tests and analyses; and additional
23 labor and subcontractor support to complete this work during the outage.
24

25 Q57. THE FIFTEENTH PROJECT LISTED IN YOUR LARGE CAPITAL ADDITIONS
26 TABLE DR-2 ABOVE IS THE NEWMAN UNIT 3 AIR PREHEATER ROTOR
27 REPLACEMENT PROJECT. WHAT WAS THIS PROJECT AND WHY WAS IT
28 UNDERTAKEN?

29 A. The Newman Unit 3 Air Preheater Rotor Replacement Project was undertaken to restore
30 the air preheater on the Newman Unit 3 boiler to its designed condition. Air preheaters are
31 typically installed in boilers on conventional steam power generating units to improve

1 efficiency of the combustion process. In this case, the preheater rotor tube, which is a
2 hollow shaft, had cracked, causing it to bind and stop. Tube replacement required complete
3 disassembly of the equipment. The preheater was rebuilt and reinstalled as new to include
4 heating elements, seals, bearings, gears, and other miscellaneous parts and components.
5

6 Q58. THE SIXTEENTH AND LAST PROJECT IN YOUR LARGE CAPITAL ADDITIONS
7 TABLE DR-2 ABOVE IS THE GENERATION OPERATIONS CMMS PROJECT.
8 WHAT WAS THIS PROJECT AND WHY WAS IT UNDERTAKEN?

9 A. The Generation Operations CMMS (Computerized Maintenance Management System)
10 Project was undertaken to implement the latest versions of Maximo and WTime,
11 separating capital and O&M work orders for the plants, and adjusting the
12 PowerPlan/ORACLE interface for immediate work order status. It included capturing
13 estimated costs for capital work orders, converting Q4 historical data, applying single
14 sign - on functionality, and setting up multiple virtual environments for Maximo and
15 WTime. It also included integration with various systems such as Active Directory,
16 Outlook, and ORACLE, along with creating test procedures, conducting business
17 workshops, and providing training sessions for the Generation Operations team.
18

19 Q59. PLEASE DESCRIBE THE REMAINDER OF THE LOCAL GENERATION FLEET
20 STEAM PRODUCTION AND OTHER PRODUCTION PROJECTS LISTED ON EPE
21 WITNESS PRIETO'S EXHIBIT CSP-2.

22 A. The remaining local fleet Steam Production and Other Production projects included in
23 Exhibit CSP-2, excluding projects less than \$200,000, can be grouped into four of the ten
24 categories specified in the instructions for Rate Filing Package Schedule H5.2b. I use those
25 four categories in describing these projects below.
26

27 **Plant Efficiency Improvement**

28 These are projects that primarily replace components that have reached the end of
29 their useful life or are no longer operable. These can also include projects that maintain or
30 improve a plant's operational efficiency. Projects in this category include boiler tube

1 replacements, air compressor replacements, generation rewinds, and valve replacements.
2 The total cost for this category of capital projects is \$16,285,847.
3

4 **Productivity Improvement**

5 These are general plant maintenance and improvement items. The largest projects
6 in this category are the blanket accounts for the Newman, Rio Grande, Copper, and
7 Montana Power Stations. The blankets include items such as control system upgrades,
8 water treatment upgrades, gas metering skid installations, and voltage regulator upgrades.
9 The total cost for this category of capital projects is \$26,471,237.
10

11 **Reliability**

12 Because the local units must be available to start and run when called on to ensure
13 service to customers, EPE must make reliability improvements to ensure adequate
14 generation resources are available to serve load. For the most part, these costs were incurred
15 for general plant improvement projects, such as turbine parts, boiler tube repairs, and
16 critical spares. The total cost for this category of capital projects is \$182,346,715.
17

18 **Habitability**

19 These projects were to improve the working conditions at the Newman and
20 Rio Grande Power Stations. These projects include control room renovations, office
21 expansions and employee access improvements. The total cost for this category of capital
22 projects is \$3,918,521.
23

24 Q60. WERE THE COSTS FOR THE PROJECTS SET FORTH IN TABLE DR-2 AND THAT
25 YOU DISCUSSED IN MORE DETAIL ABOVE REASONABLE AND NECESSARY?

26 A. Yes, these costs were reasonable and necessary for EPE to continue providing safe,
27 efficient and reliable service through its local generation fleet. All projects were reviewed
28 by management before being considered for budget approval and are the result of
29 reasonable management decisions.
30

1 Q61. WERE ALL OF EPE CAPITAL ADDITIONS PROJECTS ADDED FROM JANUARY
2 2021 THROUGH SEPTEMBER 2024 REASONABLE, NECESSARY, BENEFICIAL,
3 PRUDENT AND USED AND USEFUL TO THE LOCAL GENERATION FLEET?

4 A. Yes. All additions were necessary in maintaining the local generation fleet. In addition,
5 they were the product of sound management decisions and were developed with strong
6 budget and procurement controls.

7
8 **C. Newman Unit 6**

9 Q62. ARE THERE OTHER PROJECTS WITH A COST EXCEEDING \$5 MILLION THAT
10 ARE NOT INCLUDED IN TABLE DR-2?

11 A. Yes. Project GN208, Newman Unit 6, is not included in the list of larger local generation
12 capital additions found in Table DR-2.

13
14 Q63. WHAT IS THE NEWMAN UNIT 6 PROJECT?

15 A. Newman Unit 6 is a natural gas-fired combustion turbine, Mitsubishi Hitachi Power
16 Systems Americas G-Series Air-Cooled unit, which began serving EPE customers on
17 December 27, 2023. Since that time, Newman Unit 6 has operated primarily to meet
18 peaking and load following requirements. Newman Unit 6 is the product of a self-build
19 power generation facility proposal developed by EPE's Generation Projects team and bid
20 into the Company's 2017 All-Source Request for Proposals for Electric Power Supply and
21 Load Management Resources ("2017 RFP"). The unit was selected, together with three
22 other power generation resources proposed by third-party bidders, as part of the
23 lowest - cost resource portfolio that would help reliably meet the growing need for
24 additional capacity in EPE's service area and to help offset aging conventional gas-fired
25 generation that EPE plans to retire in the near future.⁵ Newman Unit 6 is located at EPE's
26 existing Newman Power Station in the City of El Paso, Texas. In early 2021, after the
27 Commission approved EPE's application to amend its CCN to include Newman Unit 6,

⁵Newman Unit 6 was originally intended to serve as a system resource to provide capacity and energy to EPE's Texas and New Mexico customers. However, after the New Mexico Public Regulation Commission denied EPE's request for approval of Newman Unit 6, the portion of Newman Unit 6 that would have served New Mexico was bid into a subsequent competitive solicitation in 2021 for additional generation resources to meet growing Texas load. That portion of Newman Unit 6 was chosen as part of the lowest cost portfolio of resources to reliably meet the capacity needs of Texas customers. EPE witness Martinez explains this selection in more detail and supports EPE's request to include 100% of the Company's investment in Newman Unit 6 in Texas base rates.

1 construction on the facility began in January 2022, with preliminary civil site work initiated
2 in July 2021. The unit was originally planned to begin commercial operations in June 2023,
3 and for reasons discussed in more detail below, the project was delayed and completed in
4 December of 2023.

5
6 Q64. WHAT WERE THE MOST SIGNIFICANT CONTRACTS FOR THE NEWMAN UNIT
7 6 PROJECT?

8 A. Initially, the largest contract, on a cost basis, was with Mitsubishi for the purchase of the
9 turbine/generator with auxiliaries and a hot selective catalytic reduction ("SCR") system.
10 EPE's Generation Projects team requested bids for various gas-fired generating units. EPE
11 reviewed the bids and selected Mitsubishi as the bidder best able to cost-efficiently meet
12 the performance requirements developed by EPE's Resource Planning team via the 2017
13 RFP process. This contract addressed the scope of supply (equipment), price, payment
14 schedule, buyer's obligations, liquidated damages, performance guarantees, warranties, and
15 change orders.

16 The second largest contract was the construction, start-up and testing contract with
17 the general contractor, Casey-MasTec. In response to EPE's bid solicitation for these
18 services, Casey-MasTec submitted the lowest qualified bid. During that solicitation
19 process, EPE learned that Casey-MasTec had an ongoing project with Mitsubishi and
20 another utility for construction of a gas-fired gas generating unit, which supported the
21 prudence of the decision to award this contract to Casey-MasTec.

22 EPE also issued a competitive solicitation for bids for the detailed engineering and
23 design work for the project. After reviewing the submissions, EPE selected the bid
24 submitted by engineering firm Sargent & Lundy ("S&L") and subsequently contracted with
25 S&L to conduct the engineering and design specifications, which then became part of the
26 bid package to procure the unit's major equipment balance of plant and services.

27
28 Q65. BESIDES THE MITSUBISHI EQUIPMENT, WHAT WERE THE OTHER MAJOR
29 COMPONENTS OF THE NEWMAN UNIT 6 PROJECT THAT WERE
30 COMPETITIVELY BID OUT SEPARATELY?

1 A. Other major components that were competitively bid out separately include the generator
2 step-up transformer, unit auxiliary transformer, generator circuit breaker, Iso Phase bus,
3 distributed control system, pre-engineered administrative building with control room and
4 storage area, service water tank, mechanical pre-engineered building, power distribution
5 center for balance of plant equipment, fire protection systems, various pump skids,
6 emissions monitoring system, ammonia storage and injection system, compressed air
7 system, fin fan cooler (heat exchanger), and the fuel gas system along with all associated
8 conditioning components.

9
10 Q66. WHAT WAS THE ESTIMATED COST OF NEWMAN UNIT 6 AS PRESENTED IN
11 ITS CCN CASE?

12 A. The cash capital cost estimate of \$141.2 million for Newman Unit 6, excluding an
13 allowance for funds used during construction ("AFUDC"), was part of the bid proposal
14 made in 2017 in response to the 2017 RFP. This cost estimate was presented in EPE's
15 application for CCN approval of Newman Unit 6 filed in Docket No. 50277 on November
16 22, 2019. The 2017 bid proposal that was part of EPE's application in Docket No. 50277
17 also included an estimated amount of \$16.4 million for AFUDC, resulting in a total
18 estimated cost of \$157.6 million. The cost estimate for Newman Unit 6 submitted with the
19 Company's CCN amendment application was based on the best available information at
20 the time the application was filed.

21
22 Q67. WHAT WAS THE ACTUAL COST OF NEWMAN UNIT 6?

23 A. The actual construction cost of the Newman Unit 6 project was \$199.3 million, excluding
24 AFUDC. Including AFUDC of \$17.9 million, the total capital investment by EPE in
25 Newman Unit 6 was approximately \$217.3 million. Table DR-3 below compares the
26 estimated costs included in EPE's application for CCN authorization to the actual costs of
27 Newman Unit 6 upon completion on December 27, 2023.

28 /

29 /

30 /

31 /

Table DR-3

	CCN Estimated Costs (millions) Docket No. 50277	Newman Unit 6 Actual Costs (millions)⁶	Difference (millions)
Cash Costs	\$141.2	199.3	\$58.1
AFUDC	16.4	17.9	1.5
Total	157.6	217.3	59.7

Q68. IS IT UNUSUAL FOR ACTUAL CONSTRUCTION COSTS TO VARY FROM THE ESTIMATED COSTS OF A PROJECT SUCH AS NEWMAN UNIT 6?

A. No. It is not uncommon for the actual costs of the engineering, procurement, and construction of a power plant such as Newman Unit 6 to differ or vary from the costs that were estimated for the project during the RFP bid submittal process. Some of the reasons the actual costs may vary from the estimated costs are as follows:

- Changes due to engineering design changes or unforeseen site conditions;
- Schedule delays due to delays in equipment and/or materials deliveries;
- Labor shortages at manufacturing sites and logistics companies;
- Skilled labor shortages at the construction site; and
- Inflation, interest rate hikes, and commodity price increases, among various other unforeseen circumstances.

While these are the typical factors for variances between project cost estimates and actual costs, for Newman Unit 6 the cost variances were abnormally compounded by a global pandemic, extreme weather events, and the Ukraine-Russia conflict, among other unforeseeable and unexpected events and circumstances. EPE witness Ellen Smith of FTI Consulting provides a detailed account of the significant increases in commodity, material and labor prices, as well as the unforeseen factors contributing to these changes, in her direct testimony.

⁶The estimated costs in Docket No. 50277 included \$3.1 million for Generation Side Interconnection costs. However, these costs are not reflected in the actual costs. For detailed information on the actual costs incurred by EPE related to the Generation Side Interconnection, please refer to the direct testimony of EPE witness Alex Aboytes.

Q69. PLEASE COMPARE BY CATEGORY THE ACTUAL CASH CAPITAL COST OF NEWMAN UNIT 6 TO THE ESTIMATED COSTS PRESENTED IN THE CCN PROCEEDING.

A. Table DR-4 below shows the estimated costs at the time of the CCN proceeding for Newman Unit 6 as compared to the actual costs of Newman Unit 6 by category. Some of the variation or change in certain cost categories from the estimate to the actual cost is due to certain costs being moved from one category to another.

Table DR-4

NEWMAN UNIT 6 CAPITAL COST BREAKOUT				
		Total per Estimated Cost CCN (\$)	Total Actual Cost (\$)	Difference
Engineering	Planning, design, Engineering	\$ 10,290,675	\$ 4,343,020	\$ (5,947,655)
Procurement	Turbine/Generator with Auxiliaries and Hot SCR	\$ 59,500,000	\$ 69,541,901	\$ 10,041,901
	Balance Of Plant	\$ 14,444,000	\$ 19,825,943	\$ 5,381,943
Construction	Includes Construction, start up and testing	\$ 38,710,363	\$ 78,967,607	\$ 40,257,245
Other	Company Administration and Contracting	\$ 2,050,000	\$ 5,213,015	\$ 3,163,015
	Overhead and Construction Management Allocations	\$ 3,280,000	\$ 7,626,918	\$ 4,346,918
Administrative	Legal	\$ 1,097,250	\$ 872,039	\$ (225,211)
	Builders Risk and Owners Insurance	\$ 538,125	\$ 1,098,003	\$ 559,878
	Sales and Property Taxes	\$ 3,075,000	\$ 573,454	\$ (2,501,546)
Contingency		\$ 5,119,558		\$ (5,119,558)
Misc	Newman 6 Disputed Charges		\$ 11,337,042	\$ 11,337,042
Substation	Generation Side Interconnection	\$ 3,135,000		\$ (3,135,000)
TOTAL		\$ 141,239,971	\$ 199,398,942	\$ 58,158,972

Q70. PLEASE DESCRIBE GENERALLY THE OVERALL INCREASE IN CONSTRUCTION COSTS FOR NEWMAN UNIT 6 FROM THE ESTIMATES MADE AT THE TIME OF THE CCN PROCEEDING AND THE ACTUAL FINAL COSTS.

A. The primary driver for the cost increase was the increase in construction, start-up and testing expenses as shown in Table DR-4 above. The original cost estimate of Newman Unit 6 was developed by EPE's Generation Projects team in 2017 as part of the bid preparation and submittal of the project into the 2017 RFP. Subsequent to the development of that cost estimate and extending to the completion of the project in December of 2023,

1 there were inflationary pressures, escalations in commodity and material prices across
2 various market sectors, and critical labor and material shortages, all of which can be fully
3 or partially attributed to unforeseen and uncontrollable factors such as the global
4 COVID - 19 pandemic, the Russia-Ukraine conflict, and extreme weather events, among
5 other unforeseeable factors. Specifically, prices for essential materials like steel,
6 aluminum, copper, nickel, and various other metals integral to the manufacturing of cable,
7 wiring, piping, and miscellaneous equipment and components required for the Newman
8 Unit 6 construction project experienced significant price increases. Costs for the major
9 balance of plant equipment also increased during this period and quality suffered due to
10 the skilled labor shortages. EPE witness Smith in her direct testimony provides a detailed
11 analysis of the specific inflationary pressures and other market and economic factors that
12 played a role in increasing power plant construction costs across the board over the last
13 four years.

14
15 Q71. WERE THESE INCREASED COSTS CAUSED BY EPE'S IMPRUDENCE?

16 A. No. The estimated costs that were part of EPE's self-build proposal for Newman Unit 6 bid
17 into the 2017 RFP and presented to the Commission the 2019 CCN proceeding were
18 reasonable and supported by the best information available at the time. The unprecedented
19 inflation experienced across global markets between January 2021 and December 27, 2023,
20 was amplified by global supply chain disruptions. EPE, like all other American electric
21 utilities, experienced supply chain challenges such as longer than normal lead times for
22 parts, equipment, and material orders. These challenges increased pricing globally, and
23 EPE was not immune to these pricing and inflationary pressures. The unusually significant
24 changes in commodity and material prices and labor shortages, which were not foreseeable
25 when the estimates were developed and submitted in the Newman Unit 6 CCN filing, were
26 the primary cause of the increase in overall costs.

27
28 Q72. PLEASE DESCRIBE GENERALLY THE INCREASE IN COSTS ASSOCIATED WITH
29 THE "TURBINE/GENERATOR WITH AUXILIARIES AND HOT SCR" CATEGORY.

30 A. The original cost estimate for the procurement of the turbine/generator with auxiliaries and
31 hot SCR at the time EPE filed for the CCN authorization was \$59.5 million. The actual

1 cost for this category was \$69.5 million, for a difference of \$10 million. This was due to
2 price escalations and inflation that occurred between the original cost estimate and the date
3 EPE was able to release the purchase order to its vendor after obtaining both the air
4 emissions permit and the CCN, approximately three years later. Also, additional hours for
5 Technical Field Advisor support were requested by EPE to assist with the coordination of
6 construction and the equipment start-up and commissioning effort.
7

8 Q73. WERE THESE INCREASED COSTS CAUSED BY EPE'S IMPRUDENCE?

9 A. No. As noted earlier, the estimated costs included in EPE's self-build proposal for Newman
10 Unit 6 submitted into the 2017 RFP and presented in the CCN proceeding were reasonable
11 and based on the best available information at that time. The significant increase in overall
12 costs was primarily due to unforeseen changes in commodity prices, material costs, and
13 labor shortages that were not anticipated during the project cost estimation process. EPE
14 witness Smith discusses the significant increases in commodity and material prices and the
15 unforeseeable reasons for those price changes in more detail in her direct testimony.
16

17 Q74. PLEASE DESCRIBE GENERALLY THE INCREASE IN COSTS ASSOCIATED WITH
18 THE "BALANCE OF PLANT" CATEGORY.

19 A. The original cost estimate for the "balance of plant" category at the time EPE filed for the
20 CCN authorization was approximately \$14.4 million. The actual cost for this category was
21 approximately \$19.8 million, for a difference of approximately \$5.3 million. The increase
22 was due to price escalations and inflation that occurred between the original cost estimate
23 and when EPE was able to release the purchase orders to its vendors several years later.
24

25 Q75. WERE THESE INCREASED COSTS CAUSED BY EPE'S IMPRUDENCE?

26 A. No. As previously mentioned, the estimated costs included in EPE's self-build proposal for
27 Newman Unit 6 during the 2017 RFP, and subsequently presented in the CCN proceeding,
28 were reasonable and supported by the best information available at the time. Significant
29 increases in commodity and material prices and labor shortages were not foreseeable when
30 the cost estimate was developed. These price escalations resulted in increases from the
31 estimated costs for various plant components such as the fuel gas conditioning equipment,

1 power distribution center for the balance of plant equipment, fire protection system,
2 generator step-up transformer, and the unit auxiliary transformer, among various other
3 components. EPE witness Smith discusses the significant increases in commodity and
4 material prices and the unforeseeable reasons for those price changes in more detail in her
5 direct testimony.
6

7 Q76. PLEASE DESCRIBE GENERALLY THE INCREASE IN COSTS ASSOCIATED WITH
8 THE "COMPANY ADMINISTRATION AND CONTRACTING" CATEGORY.

9 A. The original cost estimate for the "company administration and contracting" category at
10 the time EPE filed for the CCN authorization was approximately \$2.1 million. The actual
11 cost for this category was approximately \$5.2 million, for a difference of approximately
12 \$3.1 million. This increase was due to pre-planning costs from EPE's Resource Planning
13 team for the 2017 RFP not included in the project bid, along with various miscellaneous
14 cost increases such as builder's risk, internal support for construction power, and site
15 security, among others.
16

17 Q77. WERE THESE INCREASED COSTS CAUSED BY EPE'S IMPRUDENCE?

18 A. No. Pre-planning costs are typically added to the resources selected by the All-Source RFP
19 process and are not typically included in the project budget submittal. These costs include
20 internal labor needed to administer the process to develop the 2017 RFP, compile and
21 evaluate the bids, and coordinate with independent third-party consultants to run models
22 and select the optimal resource mix. Increased costs for builder's risk, site security, and
23 support from internal departments were primarily due to the project delays caused by late
24 equipment deliveries and labor shortages at the various stages of the supply chain,
25 including raw materials, manufacturing, and logistics.
26

27 Q78. PLEASE DESCRIBE GENERALLY THE INCREASE IN COSTS ASSOCIATED WITH
28 THE "OVERHEAD AND CONSTRUCTION MANAGEMENT ALLOCATIONS"
29 CATEGORY.

30 A. The original cost estimate for the "overhead and construction management allocations"
31 category at the time EPE filed for the CCN authorization was \$3.3 million. The actual cost

1 for this category was \$7.6 million, for a difference of \$4.3 million. This was due to
2 increased costs for salary and salary allocation for the EPE project team and various EPE
3 departments that supported the project, as well as the costs for the on-site construction
4 trailer.
5

6 Q79. WERE THESE INCREASED COSTS CAUSED BY EPE'S IMPRUDENCE?

7 A. No. As previously mentioned, the estimated costs included in EPE's self-build proposal for
8 Newman Unit 6 bid into the 2017 RFP and presented in the CCN proceeding were
9 reasonable and supported by the best information available at the time. The complexity of
10 this project was such that it required more EPE resources to coordinate, oversee and
11 manage the work and the associated contractual obligations than was initially estimated.
12 Project delays caused primarily by late equipment deliveries and technical challenges
13 experienced during the construction effort also contributed to the additional costs expended
14 to oversee the project.
15

16 Q80. YOU HAVE MENTIONED DELAYS IN RECEIVING EQUIPMENT DURING THE
17 PROJECT SEVERAL TIMES. WHAT WERE THE CAUSES OF THOSE DELAYS?

18 A. Equipment delays were numerous due to several unforeseen factors that I have previously
19 mentioned, most notably the global COVID-19 pandemic, the Russia-Ukraine conflict, raw
20 material and labor shortages, and severe weather events that occurred in proximity to
21 equipment manufacturing facilities. EPE witness Smith discusses the delays in equipment
22 deliveries that affected the power plant construction industry during this time and the
23 supply chain disruptions that caused those delays in more detail in her direct testimony.
24

25 Q81. HOW DO EQUIPMENT DELIVERY DELAYS IMPACT COSTS OF A PROJECT?

26 A. Delays on a project increase costs because they extend the construction schedule timeline,
27 which typically creates the need to keep labor and equipment rentals onsite for longer
28 periods of time, for example. Equipment delays may also have a negative impact on how
29 the construction activities can be sequenced, and subsequently, how equipment is tested
30 and commissioned. These negative impacts result in increased construction costs overall.
31

1 Q82. WERE THERE ANY DESIGN CHANGES THAT IMPACTED THE PROJECT?

2 A. Yes. The wire and cable quantities in the design package were estimated for the 2017 RFP
3 and subsequently to execute the general construction, start up and testing contract with the
4 successful bidder – Casey-MasTec. Because the design engineer (Sargent & Lundy) was
5 still working on integrating all the equipment into a consolidated design, the contract with
6 Casey-MasTec was executed with the understanding that these quantities and costs would
7 be reconciled once the work packages were finalized with field routing adjustments
8 completed.
9

10 Q83. WERE THERE ANY OTHER DESIGN CHANGES THAT IMPACTED THE
11 PROJECT?

12 A. Yes. Power quality issues caused by harmonics in the 21kV electrical distribution system
13 and thermal expansion issues on the turbine cooling air heat exchanger were experienced
14 during the unit's start-up and testing procedure. The harmonics issue was caused by the
15 tempering air fan and the starting package (static frequency converter) being energized
16 through the same electrical distribution system. The issue was rectified through field design
17 and construction efforts to separate these two pieces of equipment and provide individual
18 power sources. The thermal expansion issue was resolved through adjustments on the
19 piping supports and associated expansion joints.
20

21 Q84. WERE THESE INCREASED COSTS NECESSARY AND REASONABLE AND
22 PRUDENTLY INCURRED?

23 A. Yes. The additional wire and cable quantities were necessary and prudently incurred to
24 complete the project so that the unit could perform as intended. It was not the case of having
25 to redo or duplicate work but rather needing to add necessary materials to what had
26 originally been assumed to be sufficient while the engineering design package was being
27 finalized. Additionally, the power quality and heat exchanger challenges had to be resolved
28 to place the unit safely and reliably in service.
29

1 Q85. WERE THERE ANY NOTABLE EVENTS THAT OCCURRED DURING THE
2 COURSE OF THE CONSTRUCTION OF NEWMAN UNIT 6 THAT RESULTED IN
3 PROJECT CHANGES?

4 A. Yes. Several months into the construction effort, the project team detected water inside the
5 generator during the installation of the generator coolers. After draining the water from the
6 generator casing, the generator required remediation on the stator and rotor. The general
7 contractor (Casey-MasTec) took the position that Mitsubishi was responsible for the issue
8 and for a corresponding delay in the project schedule. Mitsubishi's insurance carrier
9 covered the cost to remediate the generator and the cost for Casey-MasTec's resources to
10 support the equipment remediation effort. Subsequently, Mitsubishi performed a
11 scheduling assessment and based on the results of that assessment disagreed with
12 Casey - MasTec's claim that this event caused the schedule delay.
13

14 Q86. WERE THERE OTHER ANALYSES PERFORMED BY ANY OF THE
15 PARTICIPATING ENTITIES REGARDING THE PROJECT SCHEDULE?

16 A. Yes. Casey-MasTec performed two separate time-impact analyses to substantiate its
17 position regarding delay in the project schedule and the costs associated with the delay.
18 However, the methodology used by Casey-MasTec was improper and not generally
19 accepted for scheduling analyses that seek to quantify a compensable delay because it
20 assumed a hypothetical construction effort where construction activities remain static while
21 the delay is overlayed onto the schedule to calculate the project delay.
22

23 Q87. DID THE PROJECT INCUR ADDITIONAL COSTS DUE TO THIS DELAY?

24 A. Yes. EPE negotiated a change order with Casey-MasTec in early 2023 to accelerate the
25 project, which by that time had fallen behind schedule, in an attempt to complete the project
26 before the end of the 2023 summer peak season. This agreement involved a fixed cost
27 amount of approximately \$6.7 million and included adding a second shift to the
28 construction effort along with the associated support personnel. EPE's Energy Resources
29 team evaluated the option of purchasing firm power during the summer peak as compared
30 to accelerating the work to complete the project as close as possible to the June 21, 2023,

1 commercial operation date. Please refer to EPE witness Martinez's direct testimony for
2 additional details regarding the results of that analysis.

3
4 Q88. WERE THERE OTHER DISPUTED CHANGE ORDERS SUBMITTED BY
5 CASEY - MASTEC AND IF SO, HOW WERE THEY ULTIMATELY RESOLVED?

6 A. Yes. Casey-MasTec submitted timesheets and invoices for an additional \$19 million for
7 work on the Newman Unit 6 project that it believed was "out-of-scope." EPE disagreed
8 with Casey-MasTec's position. In an attempt to avoid costly arbitration, and since those
9 disputed charges arose from work that benefited the Newman Unit 6 project, EPE
10 participated in a mediation proceeding with Casey-MasTec. The mediation was conducted
11 by an independent third party who, after hearing both sides, proposed a reasonable
12 settlement amount of \$9 million, and both parties agreed to resolve the dispute for that
13 amount.

14
15 Q89. WHAT PREVENTED THE PROJECT FROM COMPLETING ITS START-UP AND
16 COMMISSIONING EFFORT BEFORE THE END OF THE 2023 SUMMER PEAK
17 SEASON?

18 A. As I previously mentioned, during testing and commissioning of the unit, the project team
19 experienced technical issues with power harmonics in the 21kV switchgear and thermal
20 expansion which prevented the team from placing the unit in operation and completing the
21 start-up and commissioning activities. The power harmonics issue was subsequently
22 resolved by utilizing EPE-owned equipment (transformer, circuit breaker, and controls
23 equipment) from an existing substation to separate the 21kV power supply for the affected
24 equipment. The power harmonics issue caused a 13-week delay. There was also an
25 additional delay resulting from the thermal expansion issue experienced with the turbine
26 cooling air heat exchanger. This issue was ultimately rectified by re-positioning some
27 piping supports and adjusting piping tension springs.

28
29 Q90. WHAT WERE THE COSTS ASSOCIATED WITH THE HARMONICS DELAY?

30 A. The costs associated with this delay are estimated at approximately \$2.4 million, which
31 includes the costs for EPE's project team and support from Casey-MasTec, Mitsubishi and

1 S&L. To minimize the cost impact of this delay, project teams from each entity involved
2 were instructed to only keep critical resources on site that were working directly on
3 resolving the harmonics issue.
4

5 Q91. WERE ANY OF THE PARTIES HELD FINANCIALLY RESPONSIBLE FOR THIS
6 DELAY?

7 A. Yes. EPE negotiated a significant discount with Mitsubishi on their final change order for
8 Technical Field Advisor services that I described earlier. Mitsubishi's final change order
9 was for \$2.4 million and EPE negotiated it down to \$1.2 million. Also, as part of this final
10 change order from Mitsubishi, EPE obtained an additional 3.4 MW of increased power
11 output from the unit and has been successful in tuning and balancing the unit to achieve
12 the additional output. EPE performed a market analysis and values the additional output at
13 approximately \$3 million over the useful life of the unit.

14 EPE also performed an engineering assessment of the harmonics issue and related
15 schedule delay through an independent legal and engineering consultant and has submitted
16 a demand letter to S&L, the design engineer, seeking recovery of costs which the
17 independent engineering analysis indicates were caused by S&L. EPE is awaiting S&L's
18 response to the demand letter.
19

20 Q92. HOW MUCH IS EPE REQUESTING TO BE INCLUDED IN TEXAS RATE BASE FOR
21 NEWMAN UNIT 6?

22 A. EPE is requesting its full investment in Newman Unit 6, including AFUDC, which totals
23 \$217,310,662 to be included in rate base.
24

25 Q93. ARE THERE ANY COSTS INCLUDED IN THIS AMOUNT THAT HAVE NOT BEEN
26 FULLY SETTLED?

27 A. Yes. As previously noted, EPE has sent the design engineer a demand letter seeking cost
28 recovery. Any funds recovered from the design engineer will be subsequently credited back
29 to customers.
30

1 Q94. IS NEWMAN UNIT 6 USED AND USEFUL IN PROVIDING SERVICE TO EPE'S
2 TEXAS CUSTOMERS?

3 A. Yes. Newman Unit 6 is used and useful and providing efficient, safe, and reliable power
4 and energy in meeting EPE's customer needs and in meeting EPE's reserve margin
5 requirements. Newman Unit 6 produced 714,541 MWh of energy for EPE's Texas
6 customers during the Test Year.

7
8 Q95. WERE THE COSTS OF NEWMAN UNIT 6 NECESSARY, REASONABLE, AND
9 PRUDENT?

10 A. Yes. Under the extreme circumstances that I described earlier and that EPE witness Smith
11 explains in detail in her direct testimony, EPE reasonably planned and prudently managed
12 the construction of Newman Unit 6 using the procurement process described earlier in my
13 testimony and proper and appropriate oversight of the design and construction phases of
14 the project. The costs incurred by EPE for the development, construction and completion
15 of Newman Unit 6 were necessary, reasonable, and prudent.

16
17 **D. Post-Test Year Adjustments**

18 Q96. WERE THERE ANY POST-TEST YEAR ADJUSTMENTS ASSOCIATED WITH THE
19 LARGE CAPITAL PROJECTS LISTED ABOVE?

20 A. Yes. Adjustments of \$2 million and \$1.8 million have been included in this regulatory
21 filing to decrease total Plant in Service. The \$2 million decrease is for Newman Unit 6 and
22 represents the difference between the accrued amount of the settlement for disputed
23 charges with Casey-MasTec, which is discussed above, and the amount ultimately paid by
24 EPE to resolve that dispute. The \$1.8 million decrease represents the amount reimbursed
25 to EPE by the insurance carrier related to the force outage at Newman Unit 3 that is
26 discussed earlier in my testimony.

27
28 **V. EPE'S Local Generation Fleet - Operation and Maintenance**

29 Q97. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

1 A. The purpose of this section of my testimony is to describe how EPE's local fleet of power
2 plants is operated and maintained, and the measures used to analyze the power plants'
3 performance, together with EPE's O&M practices and rate recovery request.
4

5 **A. Local Unit General Operations**

6 Q98. HOW DOES EPE MATCH ITS LOCAL UNITS TO LOAD REQUIREMENTS TO ENSURE
7 THAT UNITS ARE AVAILABLE TO MEET DEMAND?

8 A. For daily operations, the Company's load demand profile requires that Newman Units 1
9 through 4 and Rio Grande Units 7 and 8 be used primarily as load following units.
10 Rio Grande Unit 8 is also used for voltage and reactive support for the system. Rio Grande
11 Unit 9, MPS Units 1 through 4, and Newman Unit 6 are fast-start units that can be cycled
12 and dispatched for meeting load obligations and in response to rapidly changing load
13 conditions. Copper Power Station is a simple -cycle combustion turbine generator that is
14 typically used as a peaking unit. It is subject to start-stop cycles, but it is also used for load
15 following and to meet spinning reserve requirements. Newman Unit 5, when operating in
16 combined cycle mode, is mostly reduced to minimum load during the mid-morning to
17 early-afternoon hours and is base loaded during peak periods and at night based on typical
18 dispatching needs. It also can return to simple cycle peaking mode if needed.
19

20 Q99. DOES THE OPERATION OF EPE'S LOCAL GENERATION FOR PRIMARILY LOAD
21 FOLLOWING AND VOLTAGE SUPPORT PURPOSES AFFECT THE UNIT
22 EFFICIENCY LEVELS?

23 A. Yes. Units that are cycled or dispatched to follow daily load are subjected to increased
24 stress due to the frequent changes in thermal gradients. These thermal cycles increase the
25 wear and tear experienced by the generating unit, which, in turn, causes losses in efficiency
26 and availability. Also, reducing output to lower loads during off-peak hours causes the unit
27 to operate less efficiently. It is important to note that Rio Grande Units 7 and 8 and
28 Newman Units 1 through 4 were originally designed and built to serve as base load units.
29 EPE's resource mix has changed over time, as has the cost of fuel, and these local units are
30 now called upon to serve in a role different than their original design. Rio Grande Unit 9,
31 MPS Units 1 through 4, and Newman Unit 6 are designed to be ramped up and down as

needed and allow EPE to meet load fluctuations and balance renewable resource production more efficiently.

Q100. HAVE THERE BEEN OTHER CHANGES SINCE THE LAST RATE CASE THAT HAVE IMPACTED THE GENERAL OPERATION OF THE LOCAL GENERATION FLEET?

A. Yes. In April of 2023, El Paso Electric officially started its participation in CAISO's Energy Imbalance Market ("EIM"). The EIM is allowed to dispatch EPE's participating units based on economics. EPE's participation in the EIM resulted in approximately \$18 million of fuel savings in the first 12 months (April 2023 to March 2024). Please see the direct testimony of EPE witness Martinez for more details regarding EPE's participation in the EIM and the resulting benefits realized by EPE customers.

Q101. HAS PARTICIPATION IN THE EIM INCREASED O&M COSTS FOR EPE?

A. Yes. Above and beyond the cost to launch EPE's participation in the market, EPE's local generation fleet has experienced additional starts, run hours, and an increase in unit capacity factors since joining the EIM, particularly with its simple-cycle combustion turbine fleet. This has resulted in additional costs and more frequent forced outages on several units. Please see Figure DR-1 below for additional information on the associated impacts from EIM that I just described.

Figure DR-1

<u>NUMBER OF STARTS</u>					<u>AVG NET CAPACITY FACTOR</u>				
Master Unit Name	2021	2022	2023		Unit Name	2021	2022	2023	
Copper 1	108.00	78.00	146.00		Copper 1	5.68	8.34	8.54	
Montana 1	265.00	118.00	276.00		Montana 1	31.16	18.41	38.25	
Montana 2	217.00	222.00	291.00		Montana 2	24.53	22.06	37.19	
Montana 3	104.00	271.00	366.00		Montana 3	18.43	27.80	44.89	
Montana 4	244.00	235.00	297.00		Montana 4	24.21	27.85	35.16	
Rio Grande 9	124.00	230.00	158.00		Rio Grande 9	10.56	29.75	9.57	
Total	1,062.00	1,154.00	1,534.00		Total	19.10	22.37	28.93	

<u>TOTAL SERVICE HOURS</u>					<u>AVG FORCED OUTAGE RATE</u>				
Unit Name	2021	2022	2023		Unit Name	2021	2022	2023	
Copper 1	985.21	1,530.92	1,695.36		Copper 1	25.04	7.59	23.00	
Montana 1	3,710.57	2,115.97	3,975.52		Montana 1	0.18	21.77	9.99	
Montana 2	2,864.25	2,563.12	3,716.33		Montana 2	1.90	0.67	1.80	
Montana 3	2,365.97	3,336.08	4,691.11		Montana 3	0.96	4.14	0.10	
Montana 4	2,926.89	3,046.15	3,643.55		Montana 4	2.21	4.33	9.90	
Rio Grande 9	1,757.91	3,592.79	1,221.26		Rio Grande 9	6.39	1.63	9.39	
Total	14,610.80	16,185.03	18,943.13		Total	6.11	6.69	9.03	

1 Q102. IS THE AGE OF EPE'S LOCAL GENERATING FLEET AN IMPORTANT
2 CONSIDERATION WHEN EVALUATING UNIT PERFORMANCE?

3 A. Yes. In broad terms, EPE's local generation is composed of both very new units and very
4 old units. Five of EPE's local units are over 57 years old (Rio Grande Units 6 and 7 and
5 Newman Units 1, 2, and 3). Newman Unit 4 entered service in 1975 and is near the end of
6 its operating life. Power plants of that age become less efficient, have less flexible
7 operating characteristics, and are more costly to operate and maintain. After meeting the
8 must-run conditions, different factors are considered. Cost is typically the primary
9 consideration, followed by the efficiency of the unit (*i.e.*, its heat rate). However, EPE's
10 older units can be dispatched first because they are less adaptable to cycling. Additionally,
11 as more solar resources are added to the grid, both utility scale and rooftop solar, these
12 older units are less complimentary to the variability of output commonly found in those
13 types of resources. Unless reliability must-run conditions exist, unit commitment will be
14 based on lowest heat rate first, thus having the effect of dispatching older units last.

15
16 **B. Local Unit Maintenance**

17 Q103. WHAT STEPS DOES EPE TAKE TO MAINTAIN THE EFFICIENCY AND
18 AVAILABILITY OF ITS LOCAL GENERATING FLEET?

19 A. EPE maintains a comprehensive maintenance program designed to maximize the efficiency
20 and availability of its local generation. The cornerstones of EPE's maintenance practices
21 are regularly scheduled equipment inspections along with preventive and predictive
22 maintenance programs. Additionally, EPE has a seasonal readiness program designed to
23 prepare the plants for the winter and summer seasons.

24
25 Q104. CAN YOU DESCRIBE EPE'S SCHEDULED MAINTENANCE ACTIVITIES?

26 A. Yes. EPE's power generation operations, maintenance, system operations, and power
27 marketing personnel collaborate to plan the timing of the outages to minimize the economic
28 impact of planned maintenance, subject to system reliability. EPE's scheduled maintenance
29 activities include periodic inspections, major unit overhauls, planned maintenance
30 activities intended to optimize unit availability and efficiency, and capital projects.

1 A major unit overhaul is a comprehensive tune-up where EPE takes a unit out of
2 service to open, clean and inspect it for degradation of major components, primarily in the
3 turbine and generator, and repairs, refurbishes, or replaces components as needed to
4 maintain or improve efficiency and reliability.

5 Between major overhauls, EPE conducts scheduled maintenance on a variety of
6 unit components (*e.g.*, boilers, turbine control valves, and auxiliary equipment) when unit
7 efficiency or availability is likely to be impacted by the failure or potential failure of these
8 components or associated sub-components.
9

10 Q105. CAN YOU DESCRIBE EPE'S PREVENTIVE MAINTENANCE PROGRAM?

11 A. Yes. EPE's preventive maintenance program is the practice of performing routine,
12 proactive equipment maintenance. This preventive maintenance is conducted not only
13 during maintenance outages but throughout the year while the units are under normal
14 operation. Preventive maintenance includes systematic inspection and routine tasks
15 designed to keep equipment in sound operating condition and minimize degradation of
16 equipment. EPE evaluates OEM data, equipment operating history, and operating
17 experience in conjunction with the relative significance of a generating unit's components
18 and the associated risk of failure to determine the type of preventive maintenance required.
19 If necessary, EPE then schedules a maintenance outage to inspect equipment and undertake
20 maintenance work prior to the time the equipment is expected to fail. EPE's preventive
21 maintenance program ensures greater control over the scheduling of maintenance activities,
22 which can minimize the duration and cost of outages.
23

24 Q106. DOES EPE ALSO FOLLOW PREDICTIVE MAINTENANCE PROCEDURES?

25 A. Yes. EPE monitors equipment operations through various inspection techniques and
26 utilizes statistical control measures in conjunction with actual equipment operating history
27 to predict when to perform maintenance on a unit or component prior to failure. The data
28 gathered assists with work planning and allows EPE to predict the parts that will be
29 required during an actual outage or repair phase. Predictive maintenance also provides EPE
30 more control over planning, scheduling, and execution of maintenance activities, thus
31 controlling costs.

1
2 Q107. WHAT ARE SOME OF THE PROCESSES EPE FOLLOWS IN ITS PREDICTIVE
3 MAINTENANCE PROGRAM?

4 A. EPE conducts unit performance monitoring, pre- and post-overhaul unit performance
5 testing, steam path inspections during overhauls, critical equipment vibration monitoring,
6 and lubricant oil analysis. EPE also uses thermography, ultrasonic sensing, and a variety
7 of other analyses to identify, analyze, and attempt to resolve potential maintenance
8 concerns prior to equipment failure. These predictive maintenance processes give EPE's
9 maintenance and operations teams more options in planning and scheduling maintenance
10 activities and controlling costs. The alternative would be to wait for equipment to fail,
11 which would result in unplanned unit outages, equipment downtime, and very likely require
12 expedited repairs and delivery of replacement parts and introduce other costly and inefficient
13 processes into the O&M programs.
14

15 Q108. ARE EPE'S PREDICTIVE AND PREVENTIVE MAINTENANCE PROGRAMS
16 IMPLEMENTED IN ALL ASPECTS OF UNIT OPERATIONS?

17 A. No. Many of the technologies available are not readily adaptable to all systems. EPE's
18 preventive and predictive maintenance practices focus primarily on critical components of
19 various systems on EPE's generating facilities. During operation of a plant, these practices
20 cannot be applied to internal components such as boiler or condenser tubes. However,
21 during plant outages, ultrasound equipment and other inspection methods are used to
22 evaluate and identify tube leaks in boilers, condensers, heat exchanges and high energy
23 piping.
24

25 Q109. EPE'S LMS100 UNITS EMPLOY MORE MODERN TECHNOLOGY THAN
26 CONVENTIONAL STEAM GENERATION UNITS. DOES EPE HAVE A MORE
27 ADVANCED MONITORING CAPABILITY FOR THESE UNITS?

28 A. Yes. Through GE, EPE has a remote monitoring and diagnostic program. GE has a team
29 staffed by former field service and controls personnel who continually monitor the
30 performance of all five of the Company's LMS100 units remotely. The team provides early
31 warning alerts, and in case of more severe operating conditions, the team notifies EPE and

1 supports the Company in resolving the issue. The team analyzes data-logs, trends, and
2 alarm history, and this analysis is used to guide the predictive maintenance programs.

3
4 Q110. DOES NEWMAN UNIT 6 HAVE SIMILAR ADVANCED TECHNOLOGY
5 CAPABILITIES AS EPE'S LMS100 FLEET?

6 A. Yes. Mitsubishi has remote monitoring capabilities similar to GE's and provides EPE with
7 early warning alerts, and in case of more severe operating conditions, supports EPE in
8 troubleshooting and resolving issues. Also similar to GE, Mitsubishi has a team that
9 analyzes data-logs, trends, and alarm history to guide the equipment maintenance
10 programs. Newman Unit 6 is also included in the preventive and predictive maintenance
11 programs as well as the outage planning processes.

12
13 **C. Local Unit Performance**

14 Q111. HOW DOES THE COMPANY MONITOR THE PERFORMANCE OF ITS LOCAL
15 GENERATING UNITS?

16 A. EPE monitors the performance of these units using two key indicators: (1) net heat rate and
17 (2) equivalent availability factor ("EAF"). Both net heat rate and EAF are
18 industry -accepted measurements of generating unit performance. Net heat rate is used to
19 monitor unit thermal efficiency, while EAF is used to measure unit availability, based on
20 the percentage of time within a given period that a unit is available to generate electricity.
21 EAF is monitored more closely during the summer season when unit availability is crucial
22 for ensuring the region's safety, security, and comfort. As a result, summer peak EAF is
23 included in EPE's corporate Key Performance Indicators for organizational performance.
24 The summer peak season for EPE is from June to September.

25
26 Q112. HOW DOES NET HEAT RATE REFLECT UNIT EFFICIENCY?

27 A. A unit's net heat rate is defined as the amount of fuel energy (measured in British thermal
28 units ("Btu") used to produce one kilowatt-hour ("kWh") of electricity delivered to the
29 transmission system. Efficient power generation equates to less fuel consumed to produce
30 a kWh. A lower net heat rate means the turbine generator is more efficient than a unit with

1 a higher net heat rate. The goal is to maintain a reasonable level of efficiency while
2 satisfying system reliability requirements.

3
4 Q113. DO EPE'S LOCAL GENERATING UNITS MAINTAIN CONSISTENT NET HEAT
5 RATES, AND ARE THEY REASONABLE HEAT RATES?

6 A. Yes. The annual variances for EPE's local generating fleet efficiency are minimal and are
7 within a range of reasonable operations, based on historical performance. As shown in
8 Schedule H-12.3a, the annual average composite net heat rates for EPE's local generating
9 fleet demonstrate that EPE maintained consistent and reasonable levels of efficiency during
10 the Test Year.

11
12 Q114. WHAT HAS EPE DONE TO IMPROVE THE OVERALL EFFICIENCY OF THE
13 GENERATING FLEET?

14 A. Most significantly, EPE has added more efficient generation facilities. Newman Unit 6
15 entered service in December 2023. During the Test Year, this unit had a net heat rate of
16 approximately 10,052 Btu/kWh. This compares to an average net heat rate of
17 10,814 Btu/kWh for the older Rio Grande Units 7 and 8 and Newman Units 1 through 3.⁷

18 Rio Grande Unit 9, which entered service in May 2013, and MPS Units 1 through
19 4, which entered service in 2015 and 2016, have previously helped improve the efficiency
20 of EPE's fleet and support native load growth, and have provided other advantages, such
21 as quick-start capability. During the Test Year, Rio Grande Unit 9 had a net heat rate of
22 10,167 Btu/kWh. Also, during the Test Year, MPS Units 1 and 2 had heat rates of 9,860
23 Btu/kWh and 9,487 Btu/kWh, respectively, and MPS Units 3 and 4 had heat rates of 9,418
24 Btu/kWh and 9,129 Btu/kWh, respectively.

25 The average net heat rate of the four MPS units is 9,497 Btu/kWh. This is
26 significantly less than the average net heat rate of 11,542 Btu/kWh for the older Rio Grande
27 Units 6, 7 and 8 and Newman Units 1 through 4.

⁷This average heat rate would be higher but for inaccurate gas flow meter readings on Rio Grande Unit 7 from May 2024 through the end of the Test Year. Those gas flow meters were very old and began malfunctioning, and they were ultimately replaced during an outage in the last quarter of 2024.

As noted above, EPE recently added Newman Unit 6, a simple-cycle gas-fired combustion turbine to its generation fleet. Newman Unit 6 is a continuation of EPE's improvement to the efficiency of its generation fleet. Besides its net heat rate of 10,095 Btu/kWh during the Test Year, Newman Unit 6 had a heat rate as low as 9,263 Btu/kWh in August 2024. Newman Unit 6 is designed and constructed primarily to support the eventual abandonment and subsequent retirement of Newman Unit 1 and Rio Grande Unit 7, which are older, less efficient, less flexible, and less complimentary to the operational parameters of renewable resources.

Q115. WHY DOES EPE USE EAF AS AN INDICATOR OF PERFORMANCE?

A. As an indicator of performance, EAF takes into account all events that affect availability, rather than focusing on a single type of event. EAF represents the percentage of time that a unit is available to produce electricity considering all planned and unplanned outages and derates. EAF provides a clear indication of overall unit availability for a given period. For EPE, that period is June through September because EPE is a summer peaking utility.

Q116. HOW HAVE EPE'S LOCAL GENERATING UNITS PERFORMED RECENTLY WITH RESPECT TO AVAILABILITY?

A. For the years 2021 through 2023, EPE achieved consistently high levels of availability during the summer peak periods (June through September), when availability matters the most to EPE's customers. For the Test Year, the average EAF for all units during the summer peak months of June through September 2024 was 90.86 percent. Table DR-5 below summarizes this information.

Table DR-5	
Year (June 15 through September 15)	Total Peak EAF Average (%)
2021	94.2
2022	96.47
2023	91.19
Test Year	90.86

1 Q117. IS IT REALISTIC TO EXPECT GENERATING UNITS TO ATTAIN 100 PERCENT
2 AVAILABILITY?

3 A. No. One-hundred percent availability is not realistically attainable over an extended period
4 of time. Scheduled maintenance is necessary to maintain acceptable levels of overall unit
5 integrity, and other events and conditions may affect unit availability during the normal
6 course of business (*e.g.*, environmental operating constraints and unplanned outages caused
7 by unforeseen events).

8
9 Q118. ARE THE COMPANY'S OPERATION AND MAINTENANCE PROGRAMS AND
10 PRACTICES NECESSARY AND REASONABLE?

11 A. Yes. EPE's local generation fleet requires the implementation of O&M programs, as all
12 generation units do. EPE's O&M programs are purposeful and tailored to EPE's fleet and
13 appropriately based on engineering data gathered to set the intervals between inspections
14 and scheduled maintenance activities. Moreover, EPE's O&M practices conform to
15 industry standards.

16
17 Q119. WHAT ACTIONS HAS EPE TAKEN AND WHAT ACTIONS DOES IT PLAN TO
18 TAKE TO PREPARE ITS LOCAL GENERATION FLEET FOR EXTREME
19 WEATHER, BOTH HOT AND COLD?

20 A. Following the severe freeze that occurred in early 2011, EPE thoroughly reviewed and
21 enhanced its preparations for extreme weather events, both hot and cold, and continues to
22 review and enhance its program as needed. As a result of this effort, EPE implemented
23 additional preparations for severe cold and hot weather at its local generating stations,
24 including:

- 25 • Improved heat tracing, insulation, and other winterization tools to a design criterion of
26 minus 10 degrees Fahrenheit (two degrees lower than the record low temperature in the
27 El Paso area) and the design coincident wind velocity of 25 mph.
- 28 • Improved weatherization checklists, procedures, and preventative maintenance
29 activities for both hot and cold weather.
- 30 • Enhanced equipment monitoring when temperatures reach 100 degrees Fahrenheit and
31 above in the summer and 39 degrees Fahrenheit and below in the winter.

- Construction of new gas turbine generation (Newman Unit 6)
 - Includes quick start capability to respond to intermittent generation.
 - Designed to operate from minus 10 degrees to 105 degrees Fahrenheit.
- Added dual-fuel capabilities to MPS Units
- Added a second natural gas interconnection to MPS.
- Prepared Rio Grande Unit 6 to return to service to ensure adequate resources were available during summer peak periods.

These measures have proven to be effective as EPE and its customers did not experience the service disruptions that much of Texas did in February 2021, during the summer of 2022, and particularly in 2023 when the region experienced a historically hot summer with the most days over 100 degrees Fahrenheit.

D. Local Generation Fleet Non-Fuel O&M Costs and Rate Request

Q120. WHAT IS THE AMOUNT OF NON-FUEL O&M COSTS FOR EPE'S LOCAL GENERATION FLEET?

A. During the Test Year, the unadjusted non-fuel O&M costs for the local generation fleet were \$53,588,749. With one adjustment that is addressed by EPE witness Steven Sierra, EPE's total Company Test Year non-fuel O&M costs are \$54,716,602 for its local generation fleet.

Q121. WHAT HAVE BEEN EPE'S RECENT LOCAL GENERATION FLEET NON-FUEL O&M EXPENDITURES?

A. EPE's non-fuel O&M expenses for the four years are shown in Table DR-6 below.

Table DR-6	
Year	Non-Fuel O&M (excluding Palo Verde O&M, millions)
2021	59.4
2022	50.5
2023	44.7
Test Year	54.7

1 Q122. GIVEN THE INCREASE IN NON-FUEL O&M EXPENSES FROM 2023 TO THE TEST
2 YEAR, DOES EPE EXPECT SUCH EXPENSES TO REMAIN AT LEVELS
3 COMPARABLE TO THE TEST YEAR?

4 A. Yes. The 2024 Non-Fuel O&M budget was \$54.4 million, which is close to the Test Year
5 expense. Additionally, the Non-Fuel O&M Budget for 2025 is \$60.6 million, primarily due
6 to subcontractor costs associated with planned unit outages.

7 As I mentioned above, EPE has several aging power generating units in its local
8 fleet, as Table DR-7 below indicates:

9

10

Table DR-7		
Generation Unit	In Service Date	Years of Service
Newman 1	1960	64
Newman 2	1963	61
Newman 3	1966	58
Newman 4	1975	49
Rio Grande 7	1958	66
Rio Grande 8	1972	52

11
12
13
14
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18

19 As these units continue to age, O&M costs are expected to continue to increase. This is
20 primarily due to increasing maintenance requirements and decreasing availability of spare
21 parts, along with a decreasing level of skilled labor in the market needed to support this
22 older equipment and associated components in safe and reliable operation. As is typical
23 with older units, it becomes more difficult to find vendors, and aftermarket parts become
24 less available, more expensive, and at times require reverse engineering and custom
25 fabrication. As for the five newer LMS100 units, O&M expenses have risen as the units
26 entered their regularly scheduled maintenance intervals and are experiencing similar
27 challenges and cost increases as much of the industry with the current supply chain
28 disruptions affecting raw materials, manufacturing, logistics, warehousing, and labor
29 shortages.

30

1 Q123. HAVE THERE BEEN CHANGES IN HOW EPE'S LOCAL GENERATION FLEET IS
2 DISPATCHED SINCE JANUARY 2021?

3 A. Yes. As mentioned previously, in April 2023, EPE entered active participation in the EIM,
4 in which EPE's generation fleet is economically dispatched by that market along with all
5 other participating resources. From April 1, 2023, to March 31, 2024, EPE generated an
6 \$18 million savings to customers through its participation in EIM.
7

8 Q124. HOW DOES EPE'S PARTICIPATION IN THE EIM IMPACT O&M COSTS?

9 A. As the EIM market dispatches resources in the most economical manner, EPE's fleet has
10 experienced an increase in run hours, unit start and stops, and additional wear and tear on
11 the equipment. This increase in run hours, unit starts and stops, and equipment wear, and
12 tear resulted in an O&M increase of approximately \$2.9 million during the Test Year. See
13 the direct testimony of EPE witness Martinez for a more detailed explanation of EPE's
14 participation in EIM and associated estimated expenses and cost savings.
15

16 Q125. ARE THE ADJUSTED TEST YEAR NON-FUEL O&M COSTS FOR LOCAL
17 GENERATION REASONABLE AND NECESSARY?

18 A. Yes. The Test Year non-fuel O&M costs, as adjusted by EPE witness Sierra, are reasonable
19 and necessary to reliably operate and maintain the local generation units. As I described
20 previously, EPE deploys preventive, corrective, and predictive maintenance programs to
21 effectively operate and maintain its local generation fleet. These programs have led to very
22 good operational performance of the local fleet. EPE appropriately uses its engineering
23 data to determine maintenance intervals.
24

25 VI. Conclusion

26 Q126. DOES THIS CONCLUDE YOUR TESTIMONY?

27 A. Yes.

Schedule	Schedule Description	Sponsorship
D-06	RETIREMENT DATA FOR ALL GENERATING UNITS	Sponsor
E-01.02	OBSOLETE ASSETS	Co-Sponsor
E-01.02-1/WP	Workpaper	Sponsor
H-01	SUMMARY OF TEST YEAR PRODUCTION O&M EXPENSES (NUCLEAR & FOSSIL)	Co-Sponsor
H-01.02	FOSSIL COMPANY-WIDE O&M EXPENSES SUMMARY	Sponsor
H-01.02a	NATURAL GAS PLANT O&M SUMMARY	Sponsor
H-01.02a1	NATURAL GAS (STEAM GENERATION)	Sponsor
H-01.02a2	NATURAL GAS (COMBUSTION TURBINE)	Sponsor
H-01.02b	COAL PLANT O&M SUMMARY	Sponsor
H-01.02c	LIGNITE PLANT O&M SUMMARY	Sponsor
H-01.02d	OTHER PLANT O&M SUMMARY	Sponsor
H-02	SUMMARY OF ADJUSTED TEST YEAR PRODUCTION O&M EXPENSES	Co-Sponsor
H-03	SUMMARY OF ACTUAL PRODUCTION O&M EXPENSES INCURRED	Co-Sponsor
H-04	MAJOR O&M PROJECTS	Co-Sponsor
H-05.2b	FOSSIL CAPITAL COSTS PROJECTS	Sponsor
H-05.3b	FOSSIL CAPITAL EXPENDITURES (HISTORICAL, PRESENT, PROJECTED)	Sponsor
H-06.2a	FOSSIL UNIT FORCED OUTAGE HISTORY	Sponsor
H-06.2b	FOSSIL UNIT PLANNED OUTAGE DATA	Sponsor
H-06.2c-HSPM	FOSSIL UNIT OUTAGE PLANNING	Sponsor
H-06.3b	FOSSIL UNIT INCREMENTAL OUTAGE COSTS	Sponsor
H-07.01	COMPANY-WIDE STAFFING PLAN	Sponsor
H-07.02-CONFIDENTIAL	PRODUCTION PLANT / UNIT STAFFING STUDY	Sponsor
H-07.03	PERSONNEL ASSIGNED FOR PLANT/UNIT	Sponsor
H-07.04	AVERAGE PERSONNEL ASSIGNED	Sponsor
H-07.05	PRODUCTION O&M ORGANIZATION CHARTS	Sponsor
H-08	PRODUCTION OPERATIONS PROGRAMS	Sponsor
H-09	PRODUCTION MAINTENANCE PROGRAMS	Sponsor
H-11.01	O&M EXPENSES PER PRODUCTION PLANT EXPENSES	Sponsor
H-11.02	MAINTENANCE MAN-HOUR RATIO	Sponsor
H-11.03	O&M COST PER MWh	Sponsor
H-12.01	SUPPLY AND LOAD DATA	Sponsor
H-12.2b	MWh PRODUCTION BY UNIT (NATURAL GAS / OIL)	Sponsor
H-12.2b1	MWh PRODUCTION BY UNIT FOR PREVIOUS 5 YEARS (NATURAL GAS / OIL)	Sponsor
H-12.2c	MWh PRODUCTION BY UNIT (HYDRO & OTHER)	Sponsor
H-12.2c1	MWh PRODUCTION BY UNIT FOR PREVIOUS 5 YEARS (HYDRO & OTHER)	Sponsor
H-12.3a	UNIT DATA	Sponsor
H-12.3b	UNIT CHARACTERISTICS	Sponsor
H-12.3c-CONFIDENTIAL	EFFICIENCY AND CONTROL SYSTEMS	Sponsor
I-05.01	COMBUSTION RESIDUAL PRODUCTION	Sponsor
I-05.02	COMBUSTION RESIDUAL DISPOSAL	Sponsor
I-05.03	COMBUSTION RESIDUAL DISPOSAL COSTS	Sponsor
I-05.03/WP	Workpaper	Sponsor
I-06	NATURAL GAS DELIVERY SYSTEM	Sponsor









Account	Work Order Open	Operating Seq	Project	Plant	Work Order Function	Work Order	Work Order Description	Amount
107001	100 GENERATIO	183	GM002	Montana	OTHER PRODUCTION	GM0020180005	MPS U1-U4 GE MYE AGREEMNT QTR FEES	413,686.04
107001	100 GENERATIO	182	GM002	Montana	OTHER PRODUCTION	M1004684	Unit 2 Whittaker Valves Rotation La	291,288.89
107001	100 GENERATIO	184	GM002	Montana	OTHER PRODUCTION	M1019653	MPS4 R&R Fuel nozzles RU TB290 X30	277,605.65
107001	100 GENERATIO	110	GN003	Newman	STEAM PRODUCTION	N1009933	CAPITAL-FACILITIES - U5 ST AIR COMP	551,182.09
107001	100 GENERATIO	113	GN003	Newman	STEAM PRODUCTION	N1013612	NM3 CW Pump B - pump & foundation w	398,003.39
107001	100 GENERATIO	112	GN003	Newman	STEAM PRODUCTION	N1016089	(PU 7451)(PU C-7387)(CAPITAL) U2-Re	337,441.60
107001	100 GENERATIO	113	GN003	Newman	STEAM PRODUCTION	N1013432	(OUTAGE) Send Skotch Burner valves	331,851.49
107001	100 GENERATIO	113	GN003	Newman	STEAM PRODUCTION	N1013935	Capital - Repairs to U3 CT during S	315,507.30
107001	100 GENERATIO	113	GN003	Newman	STEAM PRODUCTION	N1015865	(OUTAGE)(PU 7450) CAPITAL U3 Ametek	303,681.63
107001	100 GENERATIO	114	GN003	Newman	STEAM PRODUCTION	N1004089	Capital repairs to U4 Cooling Tower	299,348.00
107001	100 GENERATIO	110	GN003	Newman	STEAM PRODUCTION	N1007271	(WMATL) GN003 Capital project to re	286,141.99
107001	100 GENERATIO	110	GN003	Newman	STEAM PRODUCTION	N1009192	Capital project Gn003- U4 Mech/elec	272,553.33
107001	100 GENERATIO	110	GN003	Newman	STEAM PRODUCTION	N180831.0015	Upgrade or Replace the Diesel Fire	270,189.04
107001	100 GENERATIO	110	GN003	Newman	STEAM PRODUCTION	N1008246	Capital WO for Lab Remodel	268,868.54
107001	100 GENERATIO	135	GN003	Newman	STEAM PRODUCTION	N1012051	Inspection & Complete Overhaul of S	251,527.77
107001	100 GENERATIO	110	GN003	Newman	STEAM PRODUCTION	N1003349	Capital - Purchase and install remo	250,549.91
107001	100 GENERATIO	112	GN003	Newman	STEAM PRODUCTION	N1005781	U2 DA Level Transmitters replace wi	248,661.02
107001	100 GENERATIO	113	GN003	Newman	STEAM PRODUCTION	N1005783	U3 DA Level Transmitters replace wi	231,617.74
107001	100 GENERATIO	135	GN003	Newman	STEAM PRODUCTION	N1008918	GN003 - Capital Project - GT4 HP an	227,756.79
107001	100 GENERATIO	113	GN003	Newman	STEAM PRODUCTION	N1006396	U3 CT Inspection & PM Discovery Rep	227,009.13
107001	100 GENERATIO	113	GN003	Newman	STEAM PRODUCTION	N1019005	(CAPITAL) Circulating Pump A for re	221,866.57
107001	100 GENERATIO	135	GN003	Newman	STEAM PRODUCTION	N1008917	GN003 - Capital Project - GT3 HP an	220,366.73
107001	100 GENERATIO	135	GN003	Newman	STEAM PRODUCTION	N1004387	(FACILITIES - Jason) Block 5 Chemic	220,171.61
107001	100 GENERATIO	113	GN003	Newman	STEAM PRODUCTION	N1005950	Replacement of U3 Boiler Bifurcates	218,893.38
107001	100 GENERATIO	113	GN003	Newman	STEAM PRODUCTION	N1013198	U3-BOILER MAIN STEAM LINE SEALS	211,423.00
107001	100 GENERATIO	135	GN003	Newman	STEAM PRODUCTION	N180814.0016	Conduct an ARC Flash Study, provide	208,669.21
107001	100 GENERATIO	135	GN003	Newman	STEAM PRODUCTION	N1005679	*PU 6972* Capital Parts In Support	204,396.66
107001	100 GENERATIO	128	GR014	Rio	STEAM PRODUCTION	R1001125	Replacement of secondary superheat	2,122,554.31
107001	100 GENERATIO	128	GR014	Rio	STEAM PRODUCTION	R1006156	Replace U8 Deteriorated Circulating	866,722.72
107001	100 GENERATIO	127	GR014	Rio	STEAM PRODUCTION	R1001189	Replace Boiler Tubes on Unit 7 Boil	466,781.74
107001	100 GENERATIO	127	GR014	Rio	STEAM PRODUCTION	R1004032	Labor, and parts to repair left int	363,003.31
107001	100 GENERATIO	127	GR014	Rio	STEAM PRODUCTION	R1012934	OUTAGE-ENG / Hot spot on unit #7	326,702.94
107001	100 GENERATIO	128	GR014	Rio	STEAM PRODUCTION	R1003027	RG U8 BFP REBUILD-FLOWSERVE	212,034.34



August 15, 2023

Jeff Hughes

Plant Manager - Newman / Rio Grande Newman Power Station

PO Box 982

El Paso Texas, 79960

Re: Newman Unit 3 – June 28 Summary of Events

Dear Mr. Hughes:

On June 28, 2023, El Paso Electric Newman Unit 3 experienced a fire. Dan Leeper, already on route to El Paso for another purpose, was contacted and arrived on site the afternoon of June 28. This report attempts to summarize information gathered from the plant's distributed control system (DCS) and from plant staff to summarize the events preceding the fire. Times are subject to the DCS and other equipment HMI refresh scan rates for the associated points.

Summary of Events – June 26

On 6/26/23 at 13:31:53 the DC Battery circuit breaker indicates that it opens per the alarm history log on the battery charger local HMI. DC voltage measured at the DCS

Event	Date	Time
Low DC Disconnect	06/26/23	13:31:58
INV/STSW Loss of Comm.	06/26/23	13:31:58
INV/STSW Comm. OK	06/26/23	13:31:54
Transfer To Bypass	06/26/23	13:31:54
Inverter Failure	06/26/23	13:31:54
Inverter Low V (fast)	06/26/23	13:31:53
Battery CB Open	06/26/23	13:31:53
Charger Normal	06/26/23	12:57:29
DC Pwr Source OK	06/26/23	12:57:20
Charger Bridge Normal	06/26/23	12:57:19

Pg 64
Of 200

Previous Next Return

Figure 1



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prior to the breaker opening was ~130V. The batteries can no longer be charged with this breaker open and battery voltage decreases as the battery discharges. Figure 1 shows the status of the battery charger HMI on the day of the event. As a note, there appears to be approximately a 10-minute discrepancy between the DCS and the battery charger HMI. The initiating event causing the Battery Circuit Breaker to open is not clear from the data available to BMcD.

The Emergency Bearing and Seal Oil Pump was running on 6/26/23. Bearing and

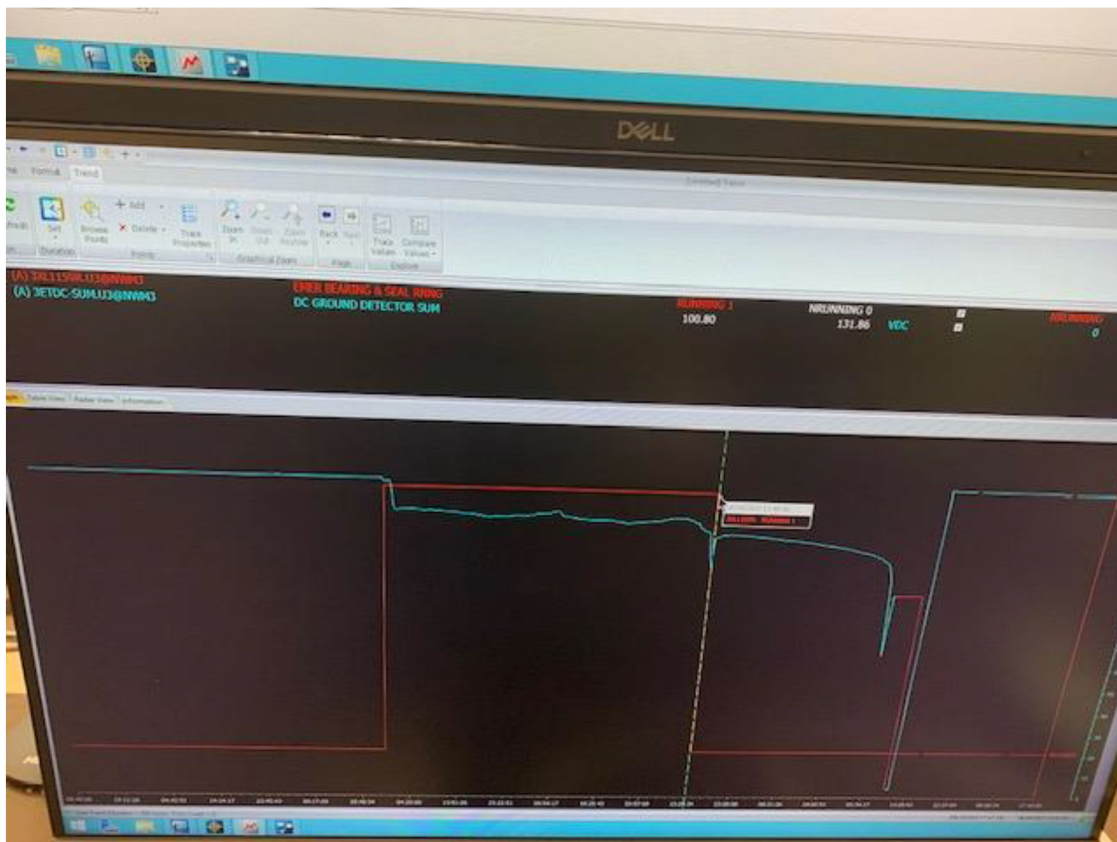


Figure 2

Seal Oil Pumps provide oil to the turbine and generator bearings and provide sealing



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oil to keep the hydrogen used to cool the generator from escaping. The Emergency



Figure 3

Bearing and Seal Oil Pump nameplate indicates the motor draws 158 amps. Under normal conditions, the seal oil is supplied from 480V AC pumps fed from the plant's auxiliary power system. Under emergency situations when the AC power system is not available, a 120V DC pump called the Emergency Bearing and Seal Oil Pump is used to maintain oil to the bearings and seals. The Emergency Bearing and Seal Oil Pump is reported by the plant to be run routinely to verify its operation.



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Station Service Battery voltage was declining during the time the Emergency Bearing and Seal Oil Pump was running. An alarm at the DCS, "DC GROUND DETECTOR"

Date/Time	Alarm Type	Code	Point Name	Point Description	AP	Value	Q	Units(A)	Limits	Incr	Poi	PM
06/26/2023 12:52:34	HIGH		BAT1102 US@NMMS	CONDENSATE WATER PH	2	9.27		PH	9.25			LA
06/26/2023 13:02:41	RETURN		BAT1102 US@NMMS	CONDENSATE WATER PH	2	9.08		PH				LA
06/26/2023 13:41:30	LOW1		3ETDC-SUM US@NMMS	DC GROUND DETECTOR SUM	2	99.99		VDC	100.00			LA
06/26/2023 13:45:50	LOW1		3ETDCPOS US@NMMS	DC GROUND DETECTOR	1	49.99		VDC	50.00			LA
06/26/2023 13:45:52	LOW1		3ETDCPOS US@NMMS	DC GROUND DETECTOR	2	50.01		VDC	60.00			LA
06/26/2023 13:45:53	LOW1		3ETDCPOS US@NMMS	DC GROUND DETECTOR	1	49.99		VDC	50.00			LA
06/26/2023 13:48:28	LOW1		3ETDCPOS US@NMMS	DC GROUND DETECTOR	2	51.18		VDC	60.00			LA
06/26/2023 13:48:28	RETURN		3X1159R US@NMMS	EMER BEARING & SEAL PUMP	1	RUNNING						LD
06/26/2023 13:48:28	RETURN		3X50751 US@NMMS	BRNG SEAL OIL PMP	1	NORMAL						LD
06/26/2023 13:48:29	RETURN		3ETDCPOS US@NMMS	DC GROUND DETECTOR	2	60.21		VDC				LA
06/26/2023 13:48:29	RETURN		3ETDC-SUM US@NMMS	DC GROUND DETECTOR SUM	2	106.97		VDC				LA
06/26/2023 13:48:31	ALARM		3X51159-CDY US@NMMS	EMER BEARING SEAL OIL PUMP COULDN'T STOP	1	FALSE						LD
06/26/2023 13:49:51	LOW1		3ETDCPOS US@NMMS	DC GROUND DETECTOR	2	57.92		VDC	60.00			LA
06/26/2023 14:29:12	RETURN		3X5159R-F08 US@NMMS	GBR FO- LOSS OF FLAME	1	FALSE						LD
06/26/2023 14:40:27	ALARM		3CORE_PORTS1728 US@NMMS	ETHERNET SWITCH CORE STATUS	1	0000001100000010			0000001100000010			LD
06/26/2023 14:40:27	ALARM		3CORE_PORTS1728 US@NMMS	ETHERNET SWITCH CORE STATUS	1	0000001010000010			0000001010000010			LD
06/26/2023 14:40:33	RETURN		3CORE_PORTS1728 US@NMMS	ETHERNET SWITCH CORE STATUS	1	0000001100000000			0000001100000000			LD
06/26/2023 14:40:33	RETURN		3CORE_PORTS1728 US@NMMS	ETHERNET SWITCH CORE STATUS	1	0000001010000000			0000001010000000			LD
06/26/2023 14:44:51	LOW1		3PT1029 US@NMMS	100 # INSTR AIR PRESS	3	85.00		PSIG	85.00			LA
06/26/2023 14:46:35	RETURN		3PT1029 US@NMMS	100 # INSTR AIR PRESS	3	85.11		PSIG				LA
06/26/2023 14:52:20	ALARM		3X51667ALM US@NMMS	BACKUP IAC ALARM	2	TROUBLE						LD
06/26/2023 15:11:29	RETURN		3X51667ALM US@NMMS	BACKUP IAC ALARM	2	NORMAL						LD
06/26/2023 15:23:09	RETURN		3X50638 US@NMMS	SEAL OIL PRESS ALM	1	NORMAL						LD
06/26/2023 15:27:40	ALARM		3X51667ALM US@NMMS	BACKUP IAC ALARM	2	TROUBLE						LD
06/26/2023 15:29:43	RETURN		3X51159-CDY US@NMMS	EMER BEARING SEAL OIL PUMP COULDN'T STOP	1	FALSE						LD
06/26/2023 15:29:43	RETURN		3ETDCPOS US@NMMS	DC GROUND DETECTOR	2	66.15		VDC				LA
06/26/2023 15:30:11	LOW1		3ETDCPOS US@NMMS	DC GROUND DETECTOR	2	55.71		VDC	60.00			LA
06/26/2023 15:30:11	LOW1		3ETDC-SUM US@NMMS	DC GROUND DETECTOR SUM	2	95.41		VDC	100.00			LA
06/26/2023 15:30:13	ALARM		3X1159R US@NMMS	EMER BEARING & SEAL PUMP	1	RUNNING						LD
06/26/2023 15:30:13	ALARM		3X50751 US@NMMS	BRNG SEAL OIL PMP	1	ALARM						LD
06/26/2023 15:30:13	ALARM		3X51159-AUTST US@NMMS	EMER BEARING SEAL OIL PMP AUTO STOPPED	1	YES						LD
06/26/2023 15:30:15	RETURN		3ETDC-SUM US@NMMS	DC GROUND DETECTOR SUM	2	106.18		VDC				LA
06/26/2023 15:30:15	RETURN		3X51159-AUTST US@NMMS	EMER BEARING SEAL OIL PMP AUTO STOPPED	1	NO						LD
06/26/2023 15:30:15	RETURN		3X50751 US@NMMS	BRNG SEAL OIL PMP	1	NORMAL						LD
06/26/2023 15:30:16	RETURN		3ETDCPOS US@NMMS	DC GROUND DETECTOR	2	60.36		VDC				LA
06/26/2023 18:03:02	ALARM		3X51159R-CDY US@NMMS	EMER BEARING SEAL OIL PUMP COULDN'T STOP	1	FALSE						LD
06/26/2023 18:03:02	ALARM		3X5159R-F08 US@NMMS	GBR FO- LOSS OF FLAME	1	FALSE						LD

Figure 4

was annunciated on the DCS at 13:41:30. This alarm is initiated when DC voltage reads below 100 Volts.

The voltage continued to decline, dropping to around 95.96 volts DC as measured in the DCS at 6/26/23 at 13:47:38.216, around the same time the Emergency Bearing and Seal Oil Pump stopped. It is not clear from the trends if the pump was manually stopped or if the pump protective overloads tripped due to the low DC voltage. The



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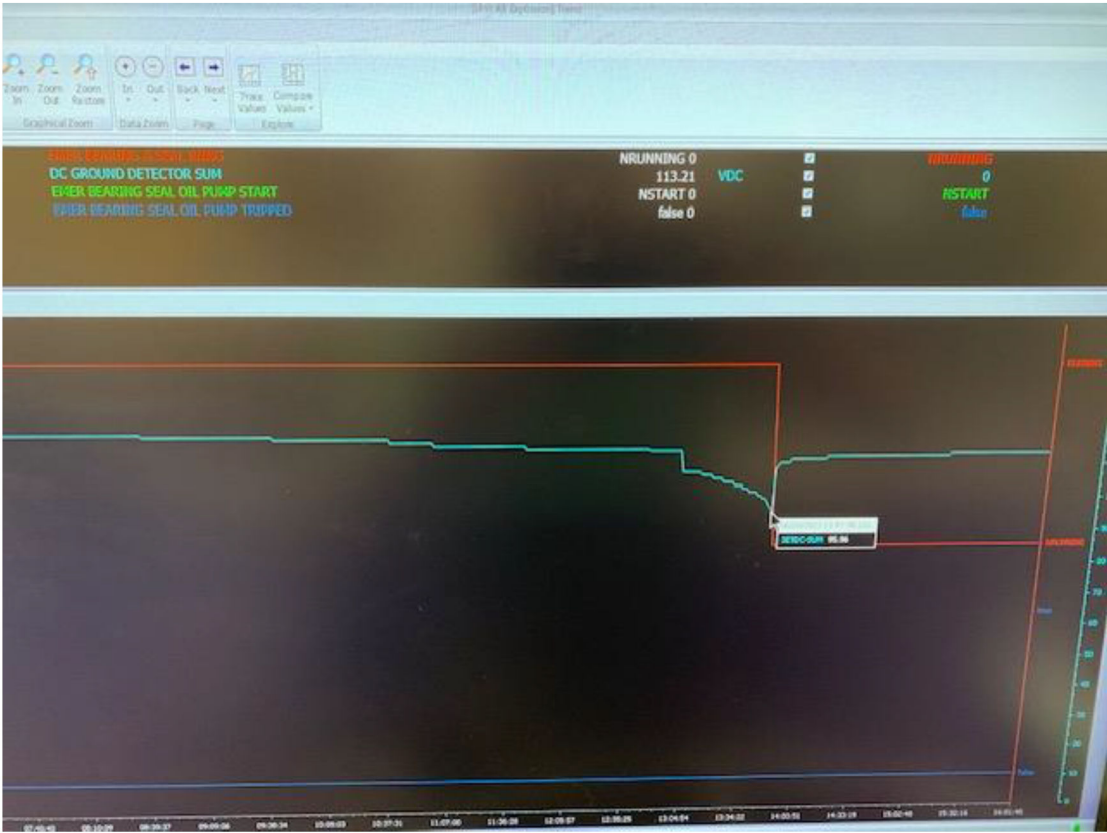


Figure 5

DC voltage increased after the Emergency Bearing and Seal Oil Pump stopped as shown in Figure 5, but from there once again began to decrease as shown in Figure 2.



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Summary of Events – June 28

On 6/27/23 at 23:37:17 an alarm (DC GROUND DETECTOR) was annunciated indicating an issue with the readings on the DC power supply, followed up by another alarm (DC GROUND DETECTOR SUM) on 6/28/23 at 00:41:16 which indicated DC voltage is less than 100V. The alarm was cleared, however the code in the alarm list indicates that the alarm was “shelved” and removed from the alarm screen without

Date/Time	Alarm Type	Code	Point Name	Point Description	AP	Value	Q	Units(A)	Limits	Incr	Poi	PM
06/27/2023 23:25:39	RETURN		3AT1203.U3@NWM3	BOILER DRUM WATER CONDUCTIVITY	3	5.10		UMHOS			LA	
06/27/2023 23:25:42	LOW1		3AT1203.U3@NWM3	BOILER DRUM WATER CONDUCTIVITY	2	4.99		UMHOS	5.00		LA	
06/27/2023 23:25:43	RETURN		3AT1203.U3@NWM3	BOILER DRUM WATER CONDUCTIVITY	3	5.10		UMHOS			LA	
06/27/2023 23:37:17	LOW1		3ETDCPOS.U3@NWM3	DC GROUND DETECTOR	2	59.99		VDC	60.00		LA	
06/27/2023 23:37:18	RETURN		3ETDCPOS.U3@NWM3	DC GROUND DETECTOR	2	60.02		VDC			LA	
06/28/2023 00:41:16	LOW1		3ETDC-SUM.U3@NWM3	DC GROUND DETECTOR SUM	2	99.99		VDC	100.00		LA	
06/28/2023 00:41:31	RETURN	XA	3ETDC-SUM.U3@NWM3	DC GROUND DETECTOR SUM	2	99.98		VDC			LA	
06/28/2023 01:36:57	HIGH1		3AT1102.U3@NWM3	CONDENSATE WATER PH	2	9.27		PH	9.25		LA	
06/28/2023 01:37:35	RETURN	PS	3AT1102.U3@NWM3	CONDENSATE WATER PH	2	9.01		PH			LA	
06/28/2023 01:41:30	ALARM		3AVR_PS_HMIPSL_STATUS.U3@NWM3	HMI P.S. #1 FAIL	3	ALARM					LD	
06/28/2023 01:42:02	ALARM		DROP87.U3@NWM3	DROP87	1	FAIL 66.512312					DU	
06/28/2023 01:42:02	ALARM		D037P0.U3@NWM3		1	0001010010000101		000001			DN	
06/28/2023 01:42:03	ALARM		DROP37.U3@NWM3	DROP37	1	FAIL 66.11110					DU	
06/28/2023 01:44:27	ALARM		3AVR_PS_PP5L_STATUS.U3@NWM3	FIRING CIRCUIT P.S. #1 FAIL	3	ALARM					LD	

Figure 6

the condition being resolved. Approximately one hour later, at 01:41:30, an alarm annunciated, indicating the AVR HMI power supply failed. Within minutes, the primary and redundant AVR controllers went into alarm and the AVR firing circuit power supply indicated a failure on the alarm screen. Figure 6 was generated from an export of the alarm historian, showing the alarms between 6/27/23 at 23:25 and 6/28/23 at 01:45.

At approximately 6/28/23 01:59:58, the MW demand on the unit is increased. The generator voltage drops and generator current increases. At 6/28/23 01:59:58.625 the Automatic Voltage Regulator (AVR) field voltage drops from 196.2 to 0 immediately. Within seconds, communication signals from the AVR to the DCS begin to show a “T” next to the signal value indicating “Timeout.” This means the DCS cannot communicate with the device to retrieve the value. At 6/28/23 02:00:02.114 both Generator relays 87GP and 87GB trip on the loss of generator field element 40Z2T. Both Generator circuit breakers (GCB) 8186B and 7216B open around 02:00:02.500.



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The main medium voltage breaker, NSST, opens at 02:00:02.933. Under normal conditions, a protective trip of the Generator relays will initiate a transfer from NSST to the reserve medium voltage main breaker, RSST. During this event, the RSST breaker did not close, so power to the AC systems was not restored after the opening of the NSST breaker. Transfer to the RSST was not being blocked by the DCS. The following happened in rapid succession:

- Bearing and Seal Oil Pump A indicates as stopped (not running) at 2:00:03.425.
- Bearing and Seal Oil Pump B did not indicate running. The pump did not start as expected, despite the presence of an auto transfer switch that also accepts power from Unit 2.
- The Emergency Bearing and Seal Oil Pump does not indicate a start occurred at the DCS (It was noted that the Emergency Bearing and Seal Oil Pump was not in Auto at the DCS).
- Oil pressure in the bearings decreases as the turbine spins down (See trends in the appendix). Within 15 seconds the bearing oil pressure decreases to less than 2PSIG.

Once the generator breaker opened, the steam turbine initially increased speed and peaked at ~3746 RPMs. As the steam turbine came down in speed, each bearing peaked at a high number and then went to zero indicating the probe was no longer reliably measuring vibration. Table 1 is a summary of the record. The turbine coasted

Probe	Time of signal loss	Speed	Peak Vibration recorded
BEARING 1X VIBRATION	2:00:21	3613.3	11.248
BEARING 1Y VIBRATION	2:00:23	3597.3	12.328
BEARING 2X VIBRATION	2:01:36	3156.4	10.75
BEARING 2Y VIBRATION	2:01:42	3105.8	14.788
BEARING 3X VIBRATION	2:01:47	3062.8	6.556
BEARING 3Y VIBRATION	2:01:49	3039.9	15
BEARING 4X VIBRATION	2:00:21	3605.8	13.623
BEARING 4Y VIBRATION	2:00:20	3613.3	10.052
BEARING 5X VIBRATION	2:00:39	3504.3	10.103
BEARING 5Y VIBRATION	2:00:38	3513.1	9.272

Table 1

down to 0 RPM at approximately 02:06 and bearing temperature readings in some cases exceeded 1000degF.



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No signal for generator hydrogen pressure was identified in the DCS, therefore no conclusion can be drawn regarding exactly when the generator depressurized, however the H2 purity begins to decay immediately after the GCB opens.

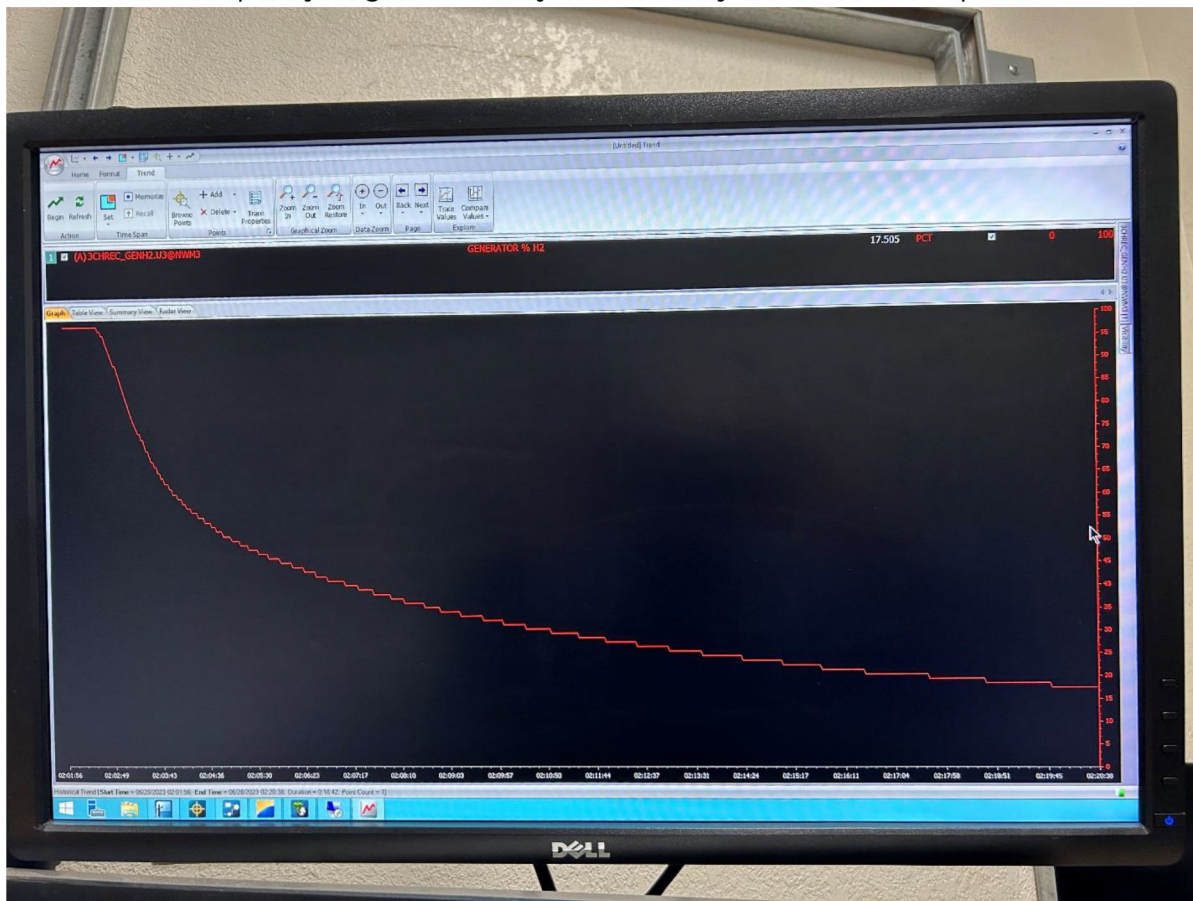


Figure 7



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If any questions arise regarding the findings of this report, please feel free to contact Dan Leeper at (816) 822-3996 or Craig Reschke at (816) 782-6164.

Sincerely,

A handwritten signature in black ink, appearing to be 'DL' or similar initials.

Dan Leeper
Senior Associate Instrument and Controls

Attachments:

Attachment 1 - Misc. trends

cc: Craig Reschke

ATTACHMENT 1 - MISC. TRENDS AND ALARM LIST

Wednesday, June 28, 2023

Trend

Page 1 of 1

Start Time : 06/28/2023 01:59:08
End Time : 06/28/2023 02:01:23

G	Point Name	Description	End Value	Units	S	LOW	HIGH
Off	(A) 3PT1679A.U3@NWM3	BEARING OIL PRESS A	0.57	PSIG	On	0	50
On	(A) 3ET1788A.U3@NWM3	#3 MEGAWATTS	0.24	MW	On	0	150
Off	(A) 3XL1160R.U3@NWM3	BEARING SEAL OIL PUMP A RNNG	INCRWN	IMC 0	On	IM	RM
Off	(A) 3ET1839A.U3@NWM3	2400V SS VOLTAGE	20.65	VAC	On	0	300
On	(A) 3AVR_DS_HMIDPS1_STATUS.U3@NWM3	HMI POWER SUPPLY #1 TRBL	ALARM	0 T	On	AL	RM
On	(A) 3AVR_DS_FDS1_STATUS.U3@NWM3	FIRING POWER SUPPLY #1 TRBL	ALARM	0 T	On	AL	RM
Off	(A) 3XL1161R.U3@NWM3	BEARING SEAL OIL PUMP B RNNG	INCRWN	IMC 0	On	IM	RM
On	(A) 3AVR_DXC_C_FLD_I.U3@NWM3	DEC GENERATOR FIELD CURRENT	53.2	T ADC	On	0	200
On	(A) 3ET1793A.U3@NWM3	#3 MEGAVARS	0.29	MVAR	On	-70	70
On	(A) 3ET1789-SEL.U3@NWM3	GENERATOR VOLTAGE MED SEL	0.87	KVAC	On	0	18
			4125	T			
Off	(A) XLAVR_AUTO.U3@NWM3	AVR IN AC AUTO	NAUTO	0	On	NA	RM
Off	(A) 3AVR_SMV_FLD_VT1_ACTUAL.U3@NWM3	FIELD VOLTAGE #1	-9.8	T VDC	On	900	800
On	(A) 3XL1169C.U3@NWM3	UNIT SYNC 8186B	INACTIVE	0	On	IN	RM
On	(A) 3XL1168C.U3@NWM3	UNIT SYNC 7216B	INACTIVE	0	On	IN	RM
On	(A) 3XL1203R.U3@NWM3	CWP 3B RNNG	INCRWN	IMC 0	On	IM	RM
On	(A) 3XL1104R.U3@NWM3	BFP 3B RNNG	INCRWN	IMC 0	On	IM	RM
On	(A) XLAVR_AUTODC.U3@NWM3	AVR IN DC AUTO	NAUTO	0	On	NA	RM
On	(A) 3XL1028AR.U3@NWM3	COND PUMP 3A ON	INCRWN	IMC 0	On	IM	RM
On	(A) 3XS3790.U3@NWM3	LOSS OF MTR1 SW & RELAY TRIP 125 VDC	NORMAL	0	On	RM	AR

Date Time	3PT1679A.U3@NWM3	3ET1788A.U3@NWM3	3XL1160R.U3@NWM3	3ET1839A.U3@NWM3	3AVR_DS_HMIDPS1_STATUS.U3@NWM3	3AVR_DS_FDS1_STATUS.U3@NWM3	3XL1161R.U3@NWM3	3AVR_DXC_C_FLD_I.U3@NWM3	3ET1793A.U3@NWM3	3ET1789-SEL.U3@NWM3	XLAVR_AUTO.U3@NWM3	3AVR_SMV_FLD_VT1_ACTUAL.U3@NWM3	3XL1169C.U3@NWM3	3XL1168C.U3@NWM3	3XL1203R.U3@NWM3	3XL1104R.U3@NWM3	XLAVR_AUTODC.U3@NWM3	3XL1028AR.U3@NWM3	3XS3790.U3@NWM3
06/28/2023 02:01:22.775	0.57	0.24	NRUNNING 0	20.65	ALARM 0 T	ALARM 0 T	NRUNNING 0	53.2 T	0.29	0.87	4125 T	NAUTO 0	-9.8 T	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	NAUTO 0	NORMAL 0
06/28/2023 02:01:22.550	0.57	0.24	NRUNNING 0	20.65	ALARM 0 T	ALARM 0 T	NRUNNING 0	53.2 T	0.29	0.87	4125 T	NAUTO 0	-9.8 T	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	NAUTO 0	NORMAL 0
06/28/2023 02:01:22.325	0.57	0.24	NRUNNING 0	20.65	ALARM 0 T	ALARM 0 T	NRUNNING 0	53.2 T	0.29	0.87	4125 T	NAUTO 0	-9.8 T	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	NAUTO 0	NORMAL 0
06/28/2023 02:01:22.100	0.57	0.24	NRUNNING 0	20.65	ALARM 0 T	ALARM 0 T	NRUNNING 0	53.2 T	0.29	0.87	4125 T	NAUTO 0	-9.8 T	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	NAUTO 0	NORMAL 0
06/28/2023 02:01:21.875	0.57	0.24	NRUNNING 0	20.65	ALARM 0 T	ALARM 0 T	NRUNNING 0	53.2 T	0.29	0.87	4125 T	NAUTO 0	-9.8 T	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	NAUTO 0	NORMAL 0
06/28/2023 02:01:21.650	0.57	0.24	NRUNNING 0	20.65	ALARM 0 T	ALARM 0 T	NRUNNING 0	53.2 T	0.29	0.87	4125 T	NAUTO 0	-9.8 T	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	NAUTO 0	NORMAL 0
06/28/2023 02:01:21.425	0.57	0.24	NRUNNING 0	20.65	ALARM 0 T	ALARM 0 T	NRUNNING 0	53.2 T	0.29	0.87	4125 T	NAUTO 0	-9.8 T	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	NAUTO 0	NORMAL 0
06/28/2023 02:01:21.200	0.57	0.24	NRUNNING 0	20.65	ALARM 0 T	ALARM 0 T	NRUNNING 0	53.2 T	0.29	0.87	4125 T	NAUTO 0	-9.8 T	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	NAUTO 0	NORMAL 0
06/28/2023 02:01:20.975	0.57	0.24	NRUNNING 0	20.65	ALARM 0 T	ALARM 0 T	NRUNNING 0	53.2 T	0.29	0.87	4125 T	NAUTO 0	-9.8 T	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	NAUTO 0	NORMAL 0
06/28/2023 02:01:20.750	0.57	0.24	NRUNNING 0	20.65	ALARM 0 T	ALARM 0 T	NRUNNING 0	53.2 T	0.29	0.87	4125 T	NAUTO 0	-9.8 T	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	NAUTO 0	NORMAL 0
06/28/2023 02:01:20.525	0.57	0.24	NRUNNING 0	20.65	ALARM 0 T	ALARM 0 T	NRUNNING 0	53.2 T	0.29	0.87	4125 T	NAUTO 0	-9.8 T	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	NAUTO 0	NORMAL 0
06/28/2023 02:01:20.300	0.57	0.24	NRUNNING 0	20.65	ALARM 0 T	ALARM 0 T	NRUNNING 0	53.2 T	0.29	0.87	4125 T	NAUTO 0	-9.8 T	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	NAUTO 0	NORMAL 0
06/28/2023 02:01:20.075	0.57	0.24	NRUNNING 0	20.65	ALARM 0 T	ALARM 0 T	NRUNNING 0	53.2 T	0.29	0.87	4125 T	NAUTO 0	-9.8 T	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	NAUTO 0	NORMAL 0
06/28/2023 02:01:19.850	0.57	0.24	NRUNNING 0	20.65	ALARM 0 T	ALARM 0 T	NRUNNING 0	53.2 T	0.29	0.87	4125 T	NAUTO 0	-9.8 T	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	NAUTO 0	NORMAL 0
06/28/2023 02:01:19.625	0.57	0.24	NRUNNING 0	20.65	ALARM 0 T	ALARM 0 T	NRUNNING 0	53.2 T	0.29	0.87	4125 T	NAUTO 0	-9.8 T	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	NAUTO 0	NORMAL 0
06/28/2023 02:01:19.400	0.57	0.24	NRUNNING 0	20.65	ALARM 0 T	ALARM 0 T	NRUNNING 0	53.2 T	0.29	0.87	4125 T	NAUTO 0	-9.8 T	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	NAUTO 0	NORMAL 0
06/28/2023 02:01:19.175	0.57	0.24	NRUNNING 0	20.65	ALARM 0 T	ALARM 0 T	NRUNNING 0	53.2 T	0.29	0.87	4125 T	NAUTO 0	-9.8 T	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	NAUTO 0	NORMAL 0
06/28/2023 02:01:18.950	0.57	0.24	NRUNNING 0	20.65	ALARM 0 T	ALARM 0 T	NRUNNING 0	53.2 T	0.29	0.87	4125 T	NAUTO 0	-9.8 T	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	NAUTO 0	NORMAL 0
06/28/2023 02:01:18.725	0.57	0.24	NRUNNING 0	20.65	ALARM 0 T	ALARM 0 T	NRUNNING 0	53.2 T	0.29	0.87	4125 T	NAUTO 0	-9.8 T	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	NAUTO 0	NORMAL 0
06/28/2023 02:01:18.500	0.57	0.24	NRUNNING 0	20.65	ALARM 0 T	ALARM 0 T	NRUNNING 0	53.2 T	0.29	0.87	4125 T	NAUTO 0	-9.8 T	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	NAUTO 0	NORMAL 0
06/28/2023 02:01:18.275	0.57	0.24	NRUNNING 0	20.65	ALARM 0 T	ALARM 0 T	NRUNNING 0	53.2 T	0.29	0.87	4125 T	NAUTO 0	-9.8 T	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	NAUTO 0	NORMAL 0
06/28/2023 02:01:18.050	0.57	0.24	NRUNNING 0	20.65	ALARM 0 T	ALARM 0 T	NRUNNING 0	53.2 T	0.29	0.87	4125 T	NAUTO 0	-9.8 T	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	NAUTO 0	NORMAL 0
06/28/2023 02:01:17.825	0.57	0.24	NRUNNING 0	20.65	ALARM 0 T	ALARM 0 T	NRUNNING 0	53.2 T	0.29	0.87	4125 T	NAUTO 0	-9.8 T	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	NAUTO 0	NORMAL 0

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06/28/2023 02:00:03.350	17.55	9.54	RUNNING 1	1525.54	ALARM 0	ALARM 0	NRUNNING 0	59.9	-6.35	9.28	4125	NAUTO 0	-9.8	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	NAUTO 0	NRUNNING 0	NORMAL 0
06/28/2023 02:00:03.125	17.55	9.54	RUNNING 1	1525.54	ALARM 0	ALARM 0	NRUNNING 0	59.9	-6.35	9.28	4125	NAUTO 0	-9.8	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	NAUTO 0	NRUNNING 0	NORMAL 0
06/28/2023 02:00:02.900	17.55	75.03	RUNNING 1	2033.43	ALARM 0	ALARM 0	NRUNNING 0	59.9	-65.64	13.02	4125	NAUTO 0	-9.8	NSYNC 0	NSYNC 0	RUNNING 1	NRUNNING 0	NAUTO 0	NRUNNING 0	NORMAL 0
06/28/2023 02:00:02.675	17.55	75.03	RUNNING 1	2033.43	ALARM 0	ALARM 0	NRUNNING 0	59.9	-65.64	13.02	4125	NAUTO 0	-9.8	NSYNC 0	NSYNC 0	RUNNING 1	NRUNNING 0	NAUTO 0	NRUNNING 0	NORMAL 0
06/28/2023 02:00:02.450	17.55	75.03	RUNNING 1	2033.43	ALARM 0	ALARM 0	NRUNNING 0	59.9	-65.64	13.02	4125	NAUTO 0	-9.8	NSYNC 0	NSYNC 0	RUNNING 1	NRUNNING 0	NAUTO 0	NRUNNING 0	NORMAL 0
06/28/2023 02:00:02.225	17.55	75.03	RUNNING 1	2033.43	ALARM 0	ALARM 0	NRUNNING 0	59.9	-65.64	13.02	4125	NAUTO 0	-9.8	SYNC 1	SYNC 1	RUNNING 1	NRUNNING 0	NAUTO 0	NRUNNING 0	NORMAL 0
06/28/2023 02:00:02	17.55	75.03	RUNNING 1	2033.43	ALARM 0	ALARM 0	NRUNNING 0	59.9	-65.64	13.02	4125	NAUTO 0	-9.8	SYNC 1	SYNC 1	RUNNING 1	NRUNNING 0	NAUTO 0	NRUNNING 0	NORMAL 0
06/28/2023 02:00:01.775	17.55	75.03	RUNNING 1	2076.00	ALARM 0	ALARM 0	NRUNNING 0	247.7	-57.97	13.02	4125	AUTO 1	-9.8	SYNC 1	SYNC 1	RUNNING 1	NRUNNING 0	NAUTO 0	NRUNNING 0	NORMAL 0
06/28/2023 02:00:01.550	17.55	75.03	RUNNING 1	2076.00	ALARM 0	ALARM 0	NRUNNING 0	247.7	-57.97	13.02	4125	AUTO 1	-9.8	SYNC 1	SYNC 1	RUNNING 1	NRUNNING 0	NAUTO 0	NRUNNING 0	NORMAL 0
06/28/2023 02:00:01.325	17.55	75.03	RUNNING 1	2076.00	ALARM 0	ALARM 0	NRUNNING 0	247.7	-57.97	13.02	4125	AUTO 1	-9.8	SYNC 1	SYNC 1	RUNNING 1	NRUNNING 0	NAUTO 0	NRUNNING 0	NORMAL 0
06/28/2023 02:00:01.100	17.55	75.03	RUNNING 1	2076.00	ALARM 0	ALARM 0	NRUNNING 0	247.7	-57.97	13.02	4125	AUTO 1	-9.8	SYNC 1	SYNC 1	RUNNING 1	NRUNNING 0	NAUTO 0	NRUNNING 0	NORMAL 0
06/28/2023 02:00:00.875	17.55	75.03	RUNNING 1	2123.15	ALARM 0	ALARM 0	NRUNNING 0	247.7	-49.00	13.02	4125	AUTO 1	-9.8	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	NRUNNING 0	NORMAL 0
06/28/2023 02:00:00.650	17.55	75.03	RUNNING 1	2123.15	ALARM 0	ALARM 0	NRUNNING 0	247.7	-49.00	13.02	3392	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	NRUNNING 0	NORMAL 0
06/28/2023 02:00:00.425	17.55	75.03	RUNNING 1	2123.15	ALARM 0	ALARM 0	NRUNNING 0	247.7	-49.00	13.02	3392	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	NRUNNING 0	NORMAL 0
06/28/2023 02:00:00.200	17.55	75.03	RUNNING 1	2123.15	ALARM 0	ALARM 0	NRUNNING 0	247.7	-49.00	13.02	3392	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	NRUNNING 0	NORMAL 0
06/28/2023 01:59:59.975	17.55	76.24	RUNNING 1	2181.75	ALARM 0	ALARM 0	NRUNNING 0	247.7	-37.36	13.02	3392	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	NRUNNING 0	NORMAL 0
06/28/2023 01:59:59.750	17.55	76.24	RUNNING 1	2181.75	ALARM 0	ALARM 0	NRUNNING 0	247.7	-37.36	13.02	3392	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	NRUNNING 0	NORMAL 0
06/28/2023 01:59:59.525	17.55	76.24	RUNNING 1	2181.75	ALARM 0	ALARM 0	NRUNNING 0	247.7	-37.36	13.02	3392	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	NRUNNING 0	NORMAL 0
06/28/2023 01:59:59.300	17.55	76.24	RUNNING 1	2181.75	ALARM 0	ALARM 0	NRUNNING 0	247.7	-37.36	13.02	3392	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	NRUNNING 0	NORMAL 0
06/28/2023 01:59:59.075	17.55	76.24	RUNNING 1	2181.75	ALARM 0	ALARM 0	NRUNNING 0	247.7	-37.36	13.02	3392	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	NRUNNING 0	NORMAL 0
06/28/2023 01:59:58.850	17.55	76.24	RUNNING 1	2261.17	ALARM 0	ALARM 0	NRUNNING 0	268.1	-20.54	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:58.625	17.55	76.24	RUNNING 1	2261.17	ALARM 0	ALARM 0	NRUNNING 0	268.1	-20.54	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:58.400	17.55	76.24	RUNNING 1	2261.17	ALARM 0	ALARM 0	NRUNNING 0	268.1	-20.54	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:58.175	17.55	76.24	RUNNING 1	2261.17	ALARM 0	ALARM 0	NRUNNING 0	268.1	-20.54	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:57.950	17.55	73.52	RUNNING 1	2343.34	ALARM 0	ALARM 0	NRUNNING 0	312.8	8.59	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:57.725	17.55	73.52	RUNNING 1	2343.34	ALARM 0	ALARM 0	NRUNNING 0	312.8	8.59	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:57.500	17.55	73.52	RUNNING 1	2343.34	ALARM 0	ALARM 0	NRUNNING 0	312.8	8.59	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:57.275	17.55	73.52	RUNNING 1	2343.34	ALARM 0	ALARM 0	NRUNNING 0	312.8	8.59	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:57.050	17.55	73.52	RUNNING 1	2343.34	ALARM 0	ALARM 0	NRUNNING 0	312.8	8.59	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:56.825	17.55	75.01	RUNNING 1	2358.44	ALARM 0	ALARM 0	NRUNNING 0	457.4	11.86	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:56.600	17.55	75.01	RUNNING 1	2358.44	ALARM 0	ALARM 0	NRUNNING 0	457.4	11.86	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:56.375	17.55	75.01	RUNNING 1	2358.44	ALARM 0	ALARM 0	NRUNNING 0	457.4	11.86	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:56.150	17.55	75.01	RUNNING 1	2358.44	ALARM 0	ALARM 0	NRUNNING 0	457.4	11.86	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:55.925	17.55	75.01	RUNNING 1	2358.44	ALARM 0	ALARM 0	NRUNNING 0	457.4	11.86	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:55.700	17.55	75.01	RUNNING 1	2358.44	ALARM 0	ALARM 0	NRUNNING 0	457.4	11.86	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:55.475	17.55	75.01	RUNNING 1	2358.44	ALARM 0	ALARM 0	NRUNNING 0	457.4	11.86	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:55.250	17.55	75.01	RUNNING 1	2358.44	ALARM 0	ALARM 0	NRUNNING 0	457.4	11.86	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:55.025	17.55	75.01	RUNNING 1	2358.44	ALARM 0	ALARM 0	NRUNNING 0	457.4	11.86	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:54.800	17.55	75.01	RUNNING 1	2359.82	ALARM 0	ALARM 0	NRUNNING 0	457.4	11.86	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:54.575	17.55	75.01	RUNNING 1	2359.82	ALARM 0	ALARM 0	NRUNNING 0	457.4	11.86	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:54.350	17.55	75.01	RUNNING 1	2359.82	ALARM 0	ALARM 0	NRUNNING 0	457.4	11.86	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:54.125	17.55	75.01	RUNNING 1	2359.82	ALARM 0	ALARM 0	NRUNNING 0	457.4	11.86	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:53.900	17.55	75.01	RUNNING 1	2357.76	ALARM 0	ALARM 0	NRUNNING 0	457.4	11.86	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:53.675	17.55	75.01	RUNNING 1	2357.76	ALARM 0	ALARM 0	NRUNNING 0	457.4	11.86	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:53.450	17.55	75.01	RUNNING 1	2357.76	ALARM 0	ALARM 0	NRUNNING 0	457.4	11.86	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:53.225	17.55	75.01	RUNNING 1	2357.76	ALARM 0	ALARM 0	NRUNNING 0	457.4	11.86	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:53	17.55	75.01	RUNNING 1	2357.76	ALARM 0	ALARM 0	NRUNNING 0	457.4	11.86	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:52.775	17.55	75.01	RUNNING 1	2359.13	ALARM 0	ALARM 0	NRUNNING 0	457.4	11.86	14.11	3031	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:52.550	17.55	75.01	RUNNING 1	2359.13	ALARM 0	ALARM 0	NRUNNING 0	457.4	11.86	14.11	3084	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:52.325	17.55	75.01	RUNNING 1	2359.13	ALARM 0	ALARM 0	NRUNNING 0	457.4	11.86	14.11	3084	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:52.100	17.55	75.01	RUNNING 1	2359.13	ALARM 0	ALARM 0	NRUNNING 0	457.4	11.86	14.11	3084	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:51.875	17.55	76.13	RUNNING 1	2359.13	ALARM 0	ALARM 0	NRUNNING 0	457.4	11.86	14.11	3084	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:51.650	17.55	76.13	RUNNING 1	2359.13	ALARM 0	ALARM 0	NRUNNING 0	457.4	11.86	14.11	3084	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:51.425	17.55	76.13	RUNNING 1	2359.13	ALARM 0	ALARM 0	NRUNNING 0	457.4	11.86	14.11	3084	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0
06/28/2023 01:59:51.200	17.55	76.13	RUNNING 1	2359.13	ALARM 0	ALARM 0	NRUNNING 0	457.4	11.86	14.11	3084	AUTO 1	-0.6	SYNC 1	SYNC 1	RUNNING 1	RUNNING 1	NAUTO 0	RUNNING 1	NORMAL 0

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Thursday, June 29, 2023

Trend

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Start Time : 06/28/2023 01:59:50
End Time : 06/28/2023 02:00:15

	G	Point Name	Historian	Processing Type	Description	Value	Units	S	Row	Point
On	(A)	3TCS-G9KRC LSD.U3@NWM3	Auto Historian	Actual	GEN BREAKER CLOSED	N.C.LSD	0.0	Off	0	4500
On	(A)	3ST1783-SEL.U3@NWM3	Auto Historian	Actual	TURBINE SPEED MEASUREMENT SELECTION	3644.1	RPM	On	0	300
On	(A)	3TE3101.U3@NWM3	Auto Historian	Actual	TURB BEARING TEMP 1	200.31	DEGF	On	0	300
On	(A)	3CHREC_TRB1BRNTMP.U3@NWM3	Auto Historian	Actual	TURB 1 HP BEARING TEMP	154.09	DEGF	On	0	300
On	(A)	3TE3102.U3@NWM3	Auto Historian	Actual	TURB BEARING TEMP 2	-131.29	DEGF	On	0	300
On	(A)	3TE3103.U3@NWM3	Auto Historian	Actual	TURB BEARING TEMP 3	-176.49	DEGF	On	0	300
On	(A)	3TE3104.U3@NWM3	Auto Historian	Actual	TURB BEARING TEMP 4	267.16	DEGF	On	0	300
On	(A)	3TE3105.U3@NWM3	Auto Historian	Actual	TURB BEARING TEMP 5	172.33	DEGF	On	0	300
On	(A)	3BN.U31-1X-HP.U3@NWM3	Auto Historian	Actual	BEARING 1X VIBRATION	1.991	MIL	On	0	15
On	(A)	3BN.U31-1Y-HP.U3@NWM3	Auto Historian	Actual	BEARING 1Y VIBRATION	2.296	MIL	On	0	15
					2.739					
On	(A)	3BN.U31-2Y-HP.U3@NWM3	Auto Historian	Actual	BEARING 2Y VIBRATION	2.512	MIL	On	0	15
On	(A)	3BN.U31-3X-HP.U3@NWM3	Auto Historian	Actual	BEARING 3X VIBRATION	3.288	MIL	On	0	15
On	(A)	3BN.U31-3Y-HP.U3@NWM3	Auto Historian	Actual	BEARING 3Y VIBRATION	2.358	MIL	On	0	15
On	(A)	3BN.U31-4X-GENUB.U3@NWM3	Auto Historian	Actual	BEARING 4X VIBRATION	5.726	MIL	On	0	15
On	(A)	3BN.U31-4Y-GENUB.U3@NWM3	Auto Historian	Actual	BEARING 4Y VIBRATION	6.037	MIL	On	0	15
On	(A)	3BN.U31-5X-GENOB.U3@NWM3	Auto Historian	Actual	BEARING 5X VIBRATION	3.302	MIL	On	0	15
On	(A)	3BN.U31-5Y-GENOB.U3@NWM3	Auto Historian	Actual	BEARING 5Y VIBRATION	2.577	MIL	On	0	15

Date Time	3TCS- G9KRC LSD.U3	3ST1783-SEL.U3@NWM3	3TE3101.U3@NWM3	3CHREC_TRB1BRNTMP.U3@NWM3	3TE3102.U3@NWM3	3TE3103.U3@NWM3	3TE3104.U3@NWM3	3BN.U31-1X- HP.U3@NWM3	3BN.U31-2Y- HP.U3@NWM3	3BN.U31-3Y- HP.U3@NWM3	3BN.U31-4X- GENUB.U3@NWM3	3BN.U31-4Y- GENUB.U3@NWM3	3BN.U31-5X- GENOB.U3@NWM3	3BN.U31-5Y- GENOB.U3@NWM3				
06/28/2023 02:00:14.979	N_CLSD 0	3644.1	200.31	154.092	-131.29	-176.49	267.16	172.33	1.991	2.296	2.739	2.512	3.288	2.358	5.726	6.037	3.302	2.577
06/28/2023 02:00:14.958	N_CLSD 0	3644.1	200.31	154.092	-131.29	-176.49	267.16	172.33	1.991	2.296	2.739	2.512	3.288	2.358	5.726	6.037	3.302	2.577
06/28/2023 02:00:14.937	N_CLSD 0	3644.1	200.31	154.092	-131.29	-176.49	267.16	172.33	1.991	2.296	2.739	2.512	3.288	2.358	5.726	6.037	3.302	2.577
06/28/2023 02:00:14.916	N_CLSD 0	3644.1	200.31	154.092	-131.29	-176.49	267.16	172.33	2.014	2.274	2.767	2.422	3.157	2.203	5.829	6.195	3.452	2.577
06/28/2023 02:00:14.895	N_CLSD 0	3644.1	200.31	154.092	-131.29	-176.49	267.16	172.33	2.014	2.274	2.767	2.422	3.157	2.203	5.829	6.195	3.452	2.577
06/28/2023 02:00:14.875	N_CLSD 0	3644.1	200.31	154.092	-131.29	-176.49	267.16	172.33	2.014	2.274	2.767	2.422	3.157	2.203	5.829	6.195	3.452	2.577
06/28/2023 02:00:14.854	N_CLSD 0	3644.1	200.31	154.092	-131.29	-176.49	267.16	172.33	2.014	2.274	2.767	2.422	3.157	2.203	5.829	6.195	3.452	2.577
06/28/2023 02:00:14.833	N_CLSD 0	3644.1	200.31	154.092	-131.29	-176.49	267.16	172.33	2.014	2.274	2.767	2.422	3.157	2.203	5.829	6.195	3.452	2.577
06/28/2023 02:00:14.812	N_CLSD 0	3644.1	200.31	154.092	-131.29	-176.49	267.16	172.33	2.014	2.274	2.767	2.422	3.157	2.203	5.829	6.195	3.452	2.577
06/28/2023 02:00:14.791	N_CLSD 0	3644.1	200.31	154.092	-131.29	-176.49	267.16	172.33	2.014	2.274	2.767	2.422	3.157	2.203	5.829	6.195	3.452	2.577
06/28/2023 02:00:14.770	N_CLSD 0	3644.1	200.31	154.092	-131.29	-176.49	267.16	172.33	2.014	2.274	2.767	2.422	3.157	2.203	5.829	6.195	3.452	2.577
06/28/2023 02:00:14.750	N_CLSD 0	3644.1	200.31	154.092	-131.29	-176.49	267.16	172.33	2.014	2.274	2.767	2.422	3.157	2.203	5.829	6.195	3.452	2.577
06/28/2023 02:00:14.729	N_CLSD 0	3644.1	200.31	154.092	-131.29	-176.49	267.16	172.33	2.014	2.274	2.767	2.422	3.157	2.203	5.829	6.195	3.452	2.577
06/28/2023 02:00:14.708	N_CLSD 0	3644.1	200.31	154.092	-131.29	-176.49	267.16	172.33	2.014	2.274	2.767	2.422	3.157	2.203	5.829	6.195	3.452	2.577
06/28/2023 02:00:14.687	N_CLSD 0	3644.1	200.31	154.092	-131.29	-176.49	267.16	172.33	2.014	2.274	2.767	2.422	3.157	2.203	5.829	6.195	3.452	2.577
06/28/2023 02:00:14.666	N_CLSD 0	3644.1	200.31	154.092	-131.29	-176.49	267.16	172.33	2.014	2.274	2.767	2.422	3.157	2.203	5.829	6.195	3.452	2.577
06/28/2023 02:00:14.645	N_CLSD 0	3644.1	200.31	154.092	-131.29	-176.49	267.16	172.33	2.014	2.274	2.767	2.422	3.157	2.203	5.829	6.195	3.452	2.577
06/28/2023 02:00:14.625	N_CLSD 0	3640.6	200.31	154.092	-131.29	-176.49	267.16	172.33	2.014	2.274	2.767	2.422	3.157	2.203	5.829	6.195	3.452	2.577
06/28/2023 02:00:14.604	N_CLSD 0	3640.6	200.31	154.092	-131.29	-176.49	267.16	172.33	2.014	2.274	2.767	2.422	3.157	2.203	5.829	6.195	3.452	2.577
06/28/2023 02:00:14.583	N_CLSD 0	3640.6	200.31	154.092	-131.29	-176.49	267.16	172.33	2.014	2.274	2.767	2.422	3.157	2.203	5.829	6.195	3.452	2.577
06/28/2023 02:00:14.562	N_CLSD 0	3640.6	200.31	154.092	-131.29	-176.49	267.16	172.33	2.014	2.274	2.767	2.422	3.157	2.203	5.829	6.195	3.452	2.577
06/28/2023 02:00:14.541	N_CLSD 0	3640.6	200.31	154.092	-131.29	-176.49	267.16	172.33	2.014	2.274	2.767	2.422	3.157	2.203	5.829	6.195	3.452	2.577
06/28/2023 02:00:14.520	N_CLSD 0	3640.6	200.31	154.092	-131.29	-176.49	267.16	172.33	2.014	2.274	2.767	2.422	3.157	2.203	5.829	6.195	3.452	2.577
06/28/2023 02:00:14.500	N_CLSD 0	3640.6	200.31	154.092	-131.29	-176.49	267.16	172.33	2.014	2.274	2.767	2.422	3.157	2.203	5.829	6.195	3.452	2.577
06/28/2023 02:00:14.479	N_CLSD 0	3640.6	200.31	154.092	-131.29	-176.49	267.16	172.33	2.014	2.274	2.767	2.422	3.157	2.203	5.829	6.195	3.452	2.577

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06/28/2023 02:00:08.208	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.399	1.976	2.531	2.232	2.899	1.995	6.035	5.778	4.067	3.214
06/28/2023 02:00:08.187	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.399	1.976	2.531	2.232	2.899	1.995	6.035	5.778	4.067	3.214
06/28/2023 02:00:08.166	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.399	1.976	2.531	2.232	2.899	1.995	6.035	5.778	4.067	3.214
06/28/2023 02:00:08.145	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.399	1.976	2.531	2.232	2.899	1.995	6.035	5.778	4.067	3.214
06/28/2023 02:00:08.125	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.399	1.976	2.531	2.232	2.899	1.995	6.035	5.778	4.067	3.214
06/28/2023 02:00:08.104	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.399	1.976	2.531	2.232	2.899	1.995	6.035	5.778	4.067	3.214
06/28/2023 02:00:08.083	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.399	1.976	2.531	2.232	2.899	1.995	6.035	5.778	4.067	3.214
06/28/2023 02:00:08.062	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.399	1.976	2.531	2.232	2.899	1.995	6.035	5.778	4.067	3.214
06/28/2023 02:00:08.041	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.399	1.976	2.531	2.232	2.899	1.995	6.035	5.778	4.067	3.214
06/28/2023 02:00:08.020	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.399	1.976	2.531	2.232	2.899	1.995	6.035	5.778	4.067	3.201
06/28/2023 02:00:08	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.399	1.976	2.531	2.232	2.899	1.995	6.035	5.778	4.067	3.201
06/28/2023 02:00:07.979	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.399	1.976	2.531	2.232	2.899	1.995	6.035	5.778	4.067	3.201
06/28/2023 02:00:07.958	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.399	1.976	2.531	2.232	2.899	1.995	6.035	5.778	4.067	3.201
06/28/2023 02:00:07.937	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.399	1.976	2.531	2.232	2.899	1.995	6.035	5.778	4.067	3.201
06/28/2023 02:00:07.916	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.895	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.875	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.854	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.833	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.812	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.791	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.770	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.750	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.729	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.708	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.687	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.666	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.645	N_CLSD 0	3672.3	186.68	154.092	181.78	-52.63	169.06	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.625	N_CLSD 0	3687.6	186.68	154.092	181.78	-52.63	169.06	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.604	N_CLSD 0	3687.6	186.68	154.092	181.78	-52.63	169.06	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.583	N_CLSD 0	3687.6	186.68	154.092	181.78	-52.63	169.06	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.562	N_CLSD 0	3687.6	186.68	154.092	181.78	-52.63	169.06	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.541	N_CLSD 0	3687.6	186.68	154.092	181.78	-52.63	169.06	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.520	N_CLSD 0	3687.6	186.68	154.092	181.78	-52.63	169.06	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.500	N_CLSD 0	3687.6	186.68	154.092	181.78	-52.63	169.06	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.479	N_CLSD 0	3687.6	186.68	154.092	181.78	-52.63	169.06	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.458	N_CLSD 0	3687.6	186.68	154.092	181.78	-52.63	169.06	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.437	N_CLSD 0	3687.6	186.68	154.092	181.78	-52.63	169.06	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.416	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.395	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.375	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.354	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.333	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.312	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.291	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.270	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.250	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.229	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.208	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.187	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201

06/28/2023 02:00:07.166	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.145	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.125	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.104	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.083	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.062	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.041	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07.020	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:07	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:06.979	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:06.958	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:06.937	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.321	1.869	2.134	1.953	2.314	1.848	5.980	5.739	3.851	3.201
06/28/2023 02:00:06.916	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.895	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.875	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.854	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.833	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.812	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.791	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.770	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.750	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.729	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.708	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.687	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.666	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.645	N_CLSD 0	3687.6	185.59	154.092	178.51	-130.26	167.97	166.88	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.625	N_CLSD 0	3715.2	185.59	154.092	178.51	-130.26	167.97	166.88	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.604	N_CLSD 0	3715.2	185.59	154.092	178.51	-130.26	167.97	166.88	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.583	N_CLSD 0	3715.2	185.59	154.092	178.51	-130.26	167.97	166.88	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.562	N_CLSD 0	3715.2	185.59	154.092	178.51	-130.26	167.97	166.88	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.541	N_CLSD 0	3715.2	185.59	154.092	178.51	-130.26	167.97	166.88	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.520	N_CLSD 0	3715.2	185.59	154.092	178.51	-130.26	167.97	166.88	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.500	N_CLSD 0	3715.2	185.59	154.092	178.51	-130.26	167.97	166.88	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.479	N_CLSD 0	3715.2	185.59	154.092	178.51	-130.26	167.97	166.88	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.458	N_CLSD 0	3715.2	185.59	154.092	178.51	-130.26	167.97	166.88	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.437	N_CLSD 0	3715.2	185.59	154.092	178.51	-130.26	167.97	166.88	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.416	N_CLSD 0	3715.2	185.59	154.092	14.95	84.48	166.88	165.79	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.395	N_CLSD 0	3715.2	185.59	154.092	14.95	84.48	166.88	165.79	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.375	N_CLSD 0	3715.2	185.59	154.092	14.95	84.48	166.88	165.79	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.354	N_CLSD 0	3715.2	185.59	154.092	14.95	84.48	166.88	165.79	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.333	N_CLSD 0	3715.2	185.59	154.092	14.95	84.48	166.88	165.79	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.312	N_CLSD 0	3715.2	185.59	154.092	14.95	84.48	166.88	165.79	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.291	N_CLSD 0	3715.2	185.59	154.092	14.95	84.48	166.88	165.79	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.270	N_CLSD 0	3715.2	185.59	154.092	14.95	84.48	166.88	165.79	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.250	N_CLSD 0	3715.2	185.59	154.092	14.95	84.48	166.88	165.79	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.229	N_CLSD 0	3715.2	185.59	154.092	14.95	84.48	166.88	165.79	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.208	N_CLSD 0	3715.2	185.59	154.092	14.95	84.48	166.88	165.79	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.187	N_CLSD 0	3715.2	185.59	154.092	14.95	84.48	166.88	165.79	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.166	N_CLSD 0	3715.2	185.59	154.092	14.95	84.48	166.88	165.79	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201
06/28/2023 02:00:06.145	N_CLSD 0	3715.2	185.59	154.092	14.95	84.48	166.88	165.79	2.008	1.800	2.184	1.871	2.174	1.911	5.995	5.728	3.763	3.201

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Thursday, June 29, 2023

Trend

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Start Time : 06/28/2023 02:00:00
End Time : 06/28/2023 02:00:05

G	Point Name	Historian	Description	End Value	Units	S	Low Scale	High Scale
On	(A) 3ET1788A.LB@NMMB	Auto Historian	#3 MEGAWATTS	0.24	MW	On	0	150
On	(A) 3ST1783-SEL.LB@NMMB	Auto Historian	TURBINE SPEED MEASUREMENT SELECTION	3730.3	RPM	On	0	4500
On	(A) 3PT1679A.LB@NMMB	Auto Historian	BEARING OIL PRESS A	11.74	PSIG	On	0	50
On	(A) 3PT1679B.LB@NMMB	Auto Historian	BEARING OIL PRESS B	11.68	PSIG	On	0	50
On	(A) 3PT1679C.LB@NMMB	Auto Historian	BEARING OIL PRESS C	11.70	PSIG	On	0	50
On	(A) 3C-REC_GENH2.LB@NMMB	Auto Historian	GENERATOR % H2	99.033	PCT	On	0	100
On	(A) 3BN.LB1-1X-HP.LB@NMMB	Auto Historian	BEARING 1X VIBRATION	2.064	MIL	On	0	15
On	(A) 3BN.LB1-1Y-HP.LB@NMMB	Auto Historian	BEARING 1Y VIBRATION	1.766	MIL	On	0	15
On	(A) 3BN.LB1-2X-PLP.LB@NMMB	Auto Historian	BEARING 2X VIBRATION	1.627	MIL	On	0	15
On	(A) 3BN.LB1-2Y-PLP.LB@NMMB	Auto Historian	BEARING 2Y VIBRATION	1.814	MIL	On	0	15
On	(A) 3BN.LB1-3Y-LP.LB@NMMB	Auto Historian	BEARING 3Y VIBRATION	2.045	MIL	On	0	15
On	(A) 3BN.LB1-3Y-LP.LB@NMMB	Auto Historian	BEARING 3Y VIBRATION	2.129	MIL	On	0	15
On	(A) 3BN.LB1-4X-GENB.LB@NMMB	Auto Historian	BEARING 4X VIBRATION	6.113	MIL	On	0	15
On	(A) 3BN.LB1-4Y-GENB.LB@NMMB	Auto Historian	BEARING 4Y VIBRATION	5.697	MIL	On	0	15
On	(A) 3BN.LB1-5X-GENCB.LB@NMMB	Auto Historian	BEARING 5X VIBRATION	3.615	MIL	On	0	15
On	(A) 3BN.LB1-5Y-GENCB.LB@NMMB	Auto Historian	BEARING 5Y VIBRATION	3.151	MIL	On	0	15
On	(A) 3BN.LB1-1-ROTORPOS.LB@NMMB	Auto Historian	ROTOR POSITION 1	2.251	MIL	On	-25	25
On	(A) 3BN.LB1-2-ROTORPOS.LB@NMMB	Auto Historian	ROTOR POSITION 2	0.754	MIL	On	-25	25
On	(A) 3XL1160R.LB@NMMB	Auto Historian	BEARING SEAL OIL PUMP A RING	NRUNNING 0	On	NRUNNING	NRUNNING	NRUNNING
On	(A) 3XL1161R.LB@NMMB	Auto Historian	BEARING SEAL OIL PUMP B RING	NRUNNING 0	On	NRUNNING	NRUNNING	NRUNNING
On	(A) 3XL1159R.LB@NMMB	Auto Historian	BEARING SEAL OIL PUMP C RING	NRUNNING 0	On	NRUNNING	NRUNNING	NRUNNING
On	(A) 3HS1159-AUT.LB@NMMB	Auto Historian	BEARING SEAL OIL PUMP AUTO	false 0	On	false	true	true

Date Time	3ET1788A.LB@NMMB	3ST1783-SEL.LB@NMMB	3PT1679A.LB@NMMB	3PT1679B.LB@NMMB	3PT1679C.LB@NMMB	3C-REC_GENH2.LB@NMMB	3BN.LB1-1X-HP.LB@NMMB	3BN.LB1-1Y-HP.LB@NMMB	3BN.LB1-2X-PLP.LB@NMMB	3BN.LB1-2Y-PLP.LB@NMMB	3BN.LB1-3Y-LP.LB@NMMB	3BN.LB1-3Y-LP.LB@NMMB	3BN.LB1-4X-GENB.LB@NMMB	3BN.LB1-4Y-GENB.LB@NMMB	3BN.LB1-5X-GENCB.LB@NMMB	3BN.LB1-5Y-GENCB.LB@NMMB	3BN.LB1-1-ROTORPOS.LB@NMMB	3BN.LB1-2-ROTORPOS.LB@NMMB	3XL1160R.LB@NMMB	3XL1161R.LB@NMMB	3XL1159R.LB@NMMB	3HS1159-AUT.LB@NMMB
06/28/2023 02:00:04.991	0.24	3730.3	11.74	11.68	11.70	99.033	2.064	1.766	1.627	1.814	2.045	2.129	6.113	5.697	3.615	3.151	2.251	0.754	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.983	0.24	3730.3	11.74	11.68	11.70	99.033	2.064	1.766	1.627	1.814	2.045	2.129	6.113	5.697	3.615	3.151	2.251	0.754	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.975	0.24	3730.3	11.74	11.68	11.70	99.033	2.064	1.766	1.627	1.814	2.045	2.129	6.113	5.697	3.615	3.151	2.251	0.754	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.966	0.24	3730.3	11.74	11.68	11.70	99.033	2.064	1.766	1.627	1.814	2.045	2.129	6.113	5.697	3.615	3.151	2.251	0.754	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.958	0.24	3730.3	11.74	11.68	11.70	99.033	2.064	1.766	1.627	1.814	2.045	2.129	6.113	5.697	3.615	3.151	2.251	0.754	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.950	0.24	3730.3	11.74	11.68	11.70	99.033	2.064	1.766	1.627	1.814	2.045	2.129	6.113	5.697	3.615	3.151	2.251	0.754	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.941	0.24	3730.3	11.74	11.68	11.70	99.033	2.064	1.766	1.627	1.814	2.045	2.129	6.113	5.697	3.615	3.151	2.251	0.754	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.933	0.24	3730.3	11.74	11.68	11.70	99.033	2.064	1.766	1.627	1.814	2.045	2.129	6.113	5.697	3.615	3.151	2.251	0.754	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.925	0.24	3730.3	11.74	11.68	11.70	99.033	2.064	1.766	1.627	1.814	2.045	2.129	6.113	5.697	3.615	3.151	2.251	0.754	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.916	0.24	3730.3	11.74	11.68	11.70	99.033	1.816	1.766	1.638	1.766	2.045	2.159	6.045	5.669	3.639	3.151	3.193	1.561	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.908	0.24	3730.3	11.74	11.68	11.70	99.033	1.816	1.766	1.638	1.766	2.045	2.159	6.045	5.669	3.639	3.151	3.193	1.561	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.900	0.24	3730.3	11.74	11.68	11.70	99.033	1.816	1.766	1.638	1.766	2.045	2.159	6.045	5.669	3.639	3.151	3.193	1.561	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.891	0.24	3730.3	11.74	11.68	11.70	99.033	1.816	1.766	1.638	1.766	2.045	2.159	6.045	5.669	3.639	3.151	3.193	1.561	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.883	0.24	3730.3	11.74	11.68	11.70	99.033	1.816	1.766	1.638	1.766	2.045	2.159	6.045	5.669	3.639	3.151	3.193	1.561	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.875	0.24	3730.3	11.74	11.68	11.70	99.033	1.816	1.766	1.638	1.766	2.045	2.159	6.045	5.669	3.639	3.151	3.193	1.561	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.866	0.24	3730.3	11.74	11.68	11.70	99.033	1.816	1.766	1.638	1.766	2.045	2.159	6.045	5.669	3.639	3.151	3.193	1.561	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.858	0.24	3730.3	11.74	11.68	11.70	99.033	1.816	1.766	1.638	1.766	2.045	2.159	6.045	5.669	3.639	3.151	3.193	1.561	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.850	0.24	3730.3	11.74	11.68	11.70	99.033	1.816	1.766	1.638	1.766	2.045	2.159	6.045	5.669	3.639	3.151	3.193	1.561	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.841	0.24	3730.3	11.74	11.68	11.70	99.033	1.816	1.766	1.638	1.766	2.045	2.159	6.045	5.669	3.639	3.151	3.193	1.561	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.833	0.24	3730.3	11.74	11.68	11.70	99.033	1.816	1.766	1.638	1.766	2.045	2.159	6.045	5.669	3.639	3.151	3.193	1.561	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.825	0.24	3730.3	11.74	11.68	11.70	99.033	1.816	1.766	1.638	1.766	2.045	2.159	6.045	5.669	3.639	3.151	3.193	1.561	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.816	0.24	3730.3	11.74	11.68	11.70	99.033	1.816	1.766	1.638	1.766	2.045	2.159	6.045	5.669	3.639	3.151	3.193	1.561	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.808	0.24	3730.3	11.74	11.68	11.70	99.033	1.816	1.766	1.638	1.766	2.045	2.159	6.045	5.669	3.639	3.151	3.193	1.561	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.800	0.24	3730.3	11.74	11.68	11.70	99.033	1.816	1.766	1.638	1.766	2.045	2.159	6.045	5.669	3.639	3.151	3.193	1.561	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.791	0.24	3730.3	11.74	11.68	11.70	99.033	1.816	1.766	1.638	1.766	2.045	2.159	6.045	5.669	3.639	3.151	3.193	1.561	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.783	0.24	3730.3	11.74	11.68	11.70	99.033	1.816	1.766	1.638	1.766	2.045	2.159	6.045	5.669	3.639	3.151	3.193	1.561	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.775	0.24	3730.3	11.74	11.68	11.70	99.033	1.816	1.766	1.638	1.766	2.045	2.159	6.045	5.669	3.639	3.151	3.193	1.561	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.766	0.24	3730.3	11.74	11.68	11.70	99.033	1.816	1.766	1.638	1.766	2.045	2.159	6.045	5.669	3.639	3.151	3.193	1.561	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0
06/28/2023 02:00:04.758	0.24	3730.3	11.74	11.68	11.70	99.033	1.816	1.766	1.638	1.766	2.045	2.159	6.045	5.669	3.639	3.151	3.193	1.561	NRUNNING 0	NRUNNING 0	NRUNNING 0	false 0

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Thursday, June 29, 2023

Trend

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Start Time : 06/28/2023 01:59:17
End Time : 06/28/2023 02:01:27

G	Point Name	Historian	Processing	Description	Unit	Units	S	Low Scale	High
On	(A) 3XL1159R.LB@NWM3	Auto Historian	Actual	EMER BEARING & SEAL RING	TRIP	On	On	NRUNNING	NRUNNING
On	(A) 3XL1159S.LB@NWM3	Auto Historian	Actual	EMER BEARING & SEAL STOPPED	TRIP	On	On	NSTOPPED	NSTOPPED
On	(A) 3HS1159-AUT.LB@NWM3	Auto Historian	Actual	EMER BEARING SEAL OIL PUMP AUTO	TRIP	On	On	false	true
On	(A) 3HS1159R.LB@NWM3	Auto Historian	Actual	EMER BEARING SEAL OIL PUMP START	TRIP	On	On	NSTART	NSTART
On	(A) 3HS1159S.LB@NWM3	Auto Historian	Actual	EMER BEARING SEAL OIL PUMP FAIL TO STOP	TRIP	On	On	false	true
On	(A) 3HS1159-FST.LB@NWM3	Auto Historian	Actual	EMER BEARING SEAL OIL PUMP FAIL TO START	TRIP	On	On	false	true
On	(A) 3HS1159-TRP.LB@NWM3	Auto Historian	Actual	EMER BEARING SEAL OIL PUMP TRIPPED	TRIP	On	On	false	true
On	(A) 3XL1168C.LB@NWM3	Auto Historian	Actual	UNIT SYNC 721RB	TRIP	On	On	NSYNC	NSYNC
On	(A) 3XL1169C.LB@NWM3	Auto Historian	Actual	UNIT SYNC 818RB	TRIP	On	On	NSYNC	NSYNC
On	(A) 3XL1168B.LB@NWM3	Auto Historian	Actual	BEARING SEAL OIL PUMP ARNING	TRIP	On	On	NRUNNING	NRUNNING
On	(A) 3AVR_4IE_PACK2.LB@NWM3	Auto Historian	Actual	RECEIVED PLANT TRIP	TRIP	On	On	FALSE	TRUE
On	(A) 3AVR_UNIT_TRIP1.LB@NWM3	Auto Historian	Actual	AVR PROTECTION TRIP #1	TRIP	On	On	NORMAL	ACTIVE
On	(A) 3AVR_UNIT_TRIP2.LB@NWM3	Auto Historian	Actual	AVR PROTECTION TRIP #2	TRIP	On	On	NORMAL	ACTIVE
On	(A) 3AVR_PA_TEMP_TRIP.LB@NWM3	Auto Historian	Actual	AVR HIGH TEMP PROTECTION TRIP	TRIP	On	On	RESET	ACTIVE
On	(A) 3AVR_4IE_CLOSED.LB@NWM3	Auto Historian	Actual	4IE BEAR CLOSED	TRIP	On	On	OPENED	CLOSED
On	(A) 3HS1159-AUT.LB@NWM3	Auto Historian	Actual	EMER BEARING SEAL OIL PUMP AUTO	TRIP	On	On	false	true
On	(A) 3ST1793-SEL.LB@NWM3	Auto Historian	Actual	TURBINE SPEED MEASUREMENT SELECTION	TRIP	On	On	0	4500
On	(A) 3XS0631-2.LB@NWM3	Auto Historian	Actual	Point not found	TRIP	On	On	0	1
On	(A) 3XL1239C.LB@NWM3	Auto Historian	Actual	NORMAL SS ACB CLOSED	TRIP	On	On	NCLOSED	CLOSED
On	(A) 3XL1192C.LB@NWM3	Auto Historian	Actual	THROWOVER COUTOUT	TRIP	On	On	NOUTOUT	COUTOUT

Date Time	3XL1159R.LB@NWM3	3XL1159S.LB@NWM3	3HS1159-AUT.LB@NWM3	3HS1159R.LB@NWM3	3HS1159S.LB@NWM3	3XL1168C.LB@NWM3	3XL1169C.LB@NWM3	3XL1168B.LB@NWM3	3AVR_4IE_PACK2.LB@NWM3	3AVR_UNIT_TRIP1.LB@NWM3	3AVR_UNIT_TRIP2.LB@NWM3	3AVR_PA_TEMP_TRIP.LB@NWM3	3AVR_4IE_CLOSED.LB@NWM3	3HS1159-AUT.LB@NWM3	3ST1793-SEL.LB@NWM3	3XS0631-2.LB@NWM3	3XL1239C.LB@NWM3	3XL1192C.LB@NWM3	
06/28/2023 02:01:26.783	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3212.3
06/28/2023 02:01:26.566	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3222.3
06/28/2023 02:01:26.350	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3222.3
06/28/2023 02:01:26.133	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3222.3
06/28/2023 02:01:25.916	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3222.3
06/28/2023 02:01:25.700	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3222.3
06/28/2023 02:01:25.483	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3229.8
06/28/2023 02:01:25.266	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3229.8
06/28/2023 02:01:25.050	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3229.8
06/28/2023 02:01:24.833	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3229.8
06/28/2023 02:01:24.616	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3228.2
06/28/2023 02:01:24.400	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3228.2
06/28/2023 02:01:24.183	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3228.2
06/28/2023 02:01:23.966	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3228.2
06/28/2023 02:01:23.750	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3228.2
06/28/2023 02:01:23.533	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3235.3
06/28/2023 02:01:23.316	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3235.3
06/28/2023 02:01:23.100	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3235.3
06/28/2023 02:01:22.883	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3235.3
06/28/2023 02:01:22.666	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3235.3
06/28/2023 02:01:22.450	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3245.6
06/28/2023 02:01:22.233	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3245.6
06/28/2023 02:01:22.016	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3245.6
06/28/2023 02:01:21.800	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3245.6
06/28/2023 02:01:21.583	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3252.7
06/28/2023 02:01:21.366	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3252.7
06/28/2023 02:01:21.150	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3252.7
06/28/2023 02:01:20.933	NRUNNING 0	NSTOPPED 0	false 0	NSTART 0	true 1	false 0	false 0	false 0	NSYNC 0	NSYNC 0	NRUNNING 0	NRUNNING 0	FALSE 0 T	NORMAL 0 T	NORMAL 0 T	ACTIVE 1 T	CLOSED 1 T	false 0	3252.7

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