PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

August 27, 2024

David King
Plant Director
Sunrise Power Plant
12857 Sunrise Power Rd.
Fellows, CA 93224

SUBJECT: **Generation Audit of Sunrise Power Plant (Sunrise) - Audit Number GA2024-12SP**

Dear Mr. King:

On behalf of the Electric Safety and Reliability Branch (ESRB) of the California Public Utilities Commission (CPUC), Brandon Vazquez, Christopher Villalobos, and Evan Coughran of ESRB staff conducted a generation audit of Sunrise Power from June 10, 2024 through June 13, 2024.

During the audit, ESRB observed plant operations, inspected equipment, reviewed data, interviewed plant staff, and identified potential violations of General Order (GO) 167-B. A copy of the audit findings itemizing the violations is attached. Please advise me by email no later than September 27, 2024, by providing an electronic copy of all corrective actions and preventive measures taken and/or planned to be taken to resolve the violations.

Your response should include a Corrective Action Plan with a description and completion date of each action and measure completed. For any violations not corrected, please provide the projected completion dates to correct the violations and achieve full compliance with GO 167-B.

Please submit your response to Brandon Vazquez at Brandon.Vazquez@cpuc.ca.gov. Please note that although Sunrise Power has been given 30 days to respond, it has a continuing obligation to comply with all applicable GO 167-B requirements; therefore, the response period does not alter this continuing duty.

The CPUC intends to publish the audit report of Sunrise Power on the CPUC website. If you wish to make a claim of confidentiality covering any of the information in the report, you may submit a confidentiality request pursuant to Section 15.4 of GO 167-B, using the heading “General Order 167-B Confidentiality Claim" along with such redactions. Per GO 167-B Rule 15.4, the confidentiality claim should be for specific items and provide its corresponding justification, as opposed to a blanket confidentiality claim on the entire audit report. The request and redacted version of the audit report should be sent to Brandon Vazquez with a copy to me and the GO 167 inbox GO167@cpuc.ca.gov by September 27, 2024.

Please note that ESRB will also post Sunrise Power’s audit report response on the CPUC website. If there is any information in your response that you would like us to consider as confidential, we request that in addition to your confidential response, you provide us with a redacted version of your audit response that can be posted on the CPUC website.

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SAN FRANCISCO, CA 94102-3298

Thank you for your courtesy and cooperation throughout the audit process. If you have any questions concerning this audit, please contact Brandon Vazquez at Brandon.Vazquez@cpuc.ca.gov or (628) 249-2867.

Sincerely,

Banu Acimis, P.E.
Program and Project Supervisor
Electric Safety and Reliability Branch
Safety and Enforcement Division
California Public Utilities Commission

Attachment: CPUC Generation Audit Findings

Cc: Lee Palmer, Director, Safety and Enforcement Division, CPUC
Nika Kjensli, Program Manager, ESRB, SED, CPUC
Rickey Tse, Program and Project Supervisor, ESRB, SED, CPUC
Yi Yang, Senior Utilities Engineer- Supervisor, ESRB, SED, CPUC
Brandon Vazquez, Utilities Engineer, ESRB, SED, CPUC
Christopher Villalobos, Utilities Engineer, ESRB, SED, CPUC
Evan Coughran, Utilities Engineer, ESRB, SED, CPUC

CPUC AUDIT FINDINGS OF
SUNRISE POWER PLANT (SUNRISE)
June 10-13, 2024

I. Finding Requiring Corrective Action

Finding 1: The Plant requires improvement to equipment failure and incident tracking and reporting to the CPUC.

General Order (GO) 167-B, Appendix D, Maintenance Standard (MS) 1: Safety states in part:

> *"The protection of life and limb for the work force is paramount. GAOs have a comprehensive safety program in place at each site. The company behavior ensures that personnel at all levels of the organization consider safety as the overriding priority. This is manifested in decisions and actions based on this priority."*

GO 167-B, Appendix D, MS 8: Maintenance Procedures and Documentation states:

> *"Maintenance procedures and documents are clear and technically accurate, provide appropriate direction, and are used to support safe and reliable plant operation. Procedures must be current to the actual methods being employed to accomplish the task and are comprehensive to ensure reliable energy delivery to the transmission grid."*

GO 167-B, Appendix D, MS 16: Regulatory Requirements states:

> *"Regulatory compliance is paramount in the operation of the generating asset. Each regulatory event is properly identified, reported and appropriate action taken to prevent recurrence."*

GO 167-B Section 10.4 Safety-Related Incidents states in part:

> *"Within 24 hours of its occurrence, a Generating Asset Owner shall report to the Commission's emergency reporting web site any safety-related incident involving a Generating Asset."*

Sunrise Power, "The Plant", had two significant equipment failures for which the Plant did not have any records of their occurrence or of resulting investigations or analysis reports. The failures that occurred are a failed breaker in the switchyard and a liberated blade from the Water Cooling Tower. The Plant was transparent and forthcoming regarding the failures that occurred, but the Plant was unable to provide specific details, any failure analysis reports, or investigation records for the incidents. Proper investigation is critical after a significant failure of a component to ensure the event is not repeated. Additionally, incidents related to equipment failures that meet GO 167-B §10.4 Safety-Related Incidents reporting criteria should be reported to the CPUC via the emergency reporting website. Due to the lack of documentation related to the incidents it is uncertain if these failures met the reportable incident criteria set in GO 167-B §10.4. The Plant must review the reporting criteria and report safety-related incidents that meet the criteria in the future.

The Plant has an established Emergency Response Plan addressing plausible emergency situations. The California Public Utilities Commission must be added to the notifications and communications section of the Emergency Response Plan to ensure notification of safety-related incidents. GO 167-B, Section 10.4 reportable incident criteria may also be listed to see if the event meets the reportable criteria here.

Finding 2: The Plant requires improvement to its work management organization and closeout.

GO 167-B, Appendix D, MS 8: Maintenance Procedures and Documentation states:

> *"Maintenance procedures and documents are clear and technically accurate, provide appropriate direction, and are used to support safe and reliable plant operation. Procedures must be current to the actual methods being employed to accomplish the task and are comprehensive to ensure reliable energy delivery to the transmission grid."*

GO 167-B, Appendix D, MS 10: Work Management states:

> *"Work is identified and selected based on value to maintaining reliable plant operation. Work is planned, scheduled, coordinated, controlled, and supported with resources for safe, timely, and effective completion."*

GO 167-B, Appendix E, Operation Standard (OS) 16: Participation by Operations Personnel in Work Orders states:

> *"Operations personnel identify potential system and equipment problems and initiate work orders necessary to correct system or equipment problems that may inhibit or prevent plant operations. Operations personnel monitor the progress of work orders affecting operations to ensure timely completion and closeout of the work orders, so that the components and systems are returned to service. Among other things:*
>
> *A. Operations personnel identify problems requiring work orders, and initiate work orders to correct those problems*
> *B. The operations manager or other appropriate operating personnel periodically review work orders that affect operations to ensure timely completion and closeout of the work orders, so that components and systems are returned to service.*
> *C. Personnel responsible for prioritizing work orders consult operations personnel to assure that work orders affecting the operations of the plant are properly prioritized.*
> *D. Appropriate personnel are trained in and follow procedures applicable to work orders."*

The Plant does not have an established plan or procedure to manage work orders. The Plant should create a work order procedure to establish criteria for priority levels, required completion time frames, backlogged work order management and the tracking of completed work. ESRB believes a work order procedure will help the Plant complete work orders in a timely manner and manage backlogged work orders. Plant management should also ensure technicians who are responsible for completing work orders closeout the work order soon after the work has been

completed. Upon review of the open work orders in Mainsaver and Maximo, some of the workorders that had been completed were left open creating inconsistencies in the tracking and record keeping of work orders. Adding to the complexity, when ESRB conducted the audit in June of 2024, the Plant was in a transition phase from Maximo to Mainsaver, resulting in work orders that had been completed in one system but was not reflected in the other.

The Plant has undergone various changes in work order management systems due to multiple changes in ownership in recent years. The Plant has used SAP, Maximo and Mainsaver as their work order management system. Due to these changes, the Plant had difficulty providing ESRB with work orders, records of maintenance and inspections when requested by the ESRB audit group. Records of maintenance or reports were stored in various locations including work order management system, E-mails, Shared Drives and Plant employee's computer local drive. Previously artifacts were stored on the Owners network storage drive, but after ownership change, the Plant lost access to these records. In the procedure to manage workorders, the Plant should establish a centralized location or repository for storing work artifacts such as reports, contractor work records or reports, and inspections and maintenance records.

Finding 3: Electrical equipment cabinets labeled with an Arc flash hazard sign and other high voltage electrical equipment must remain closed.

GO 167-B, Appendix D, MS 1: Safety states:

> *"The protection of life and limb for the work force is paramount. The company behavior ensures that individuals at all levels of the organization consider safety as the overriding priority. This is manifested in decisions and actions based on this priority. The work environment, and the policies and procedures foster such a safety culture, and the attitudes and behaviors of individuals are consistent with the policies and procedures."*

GO 167-B, Appendix D, MS 9: Conduct of Maintenance states:

> *"Maintenance is conducted in an effective and efficient manner so equipment performance and materiel condition effectively support reliable plant operation."*

GO 167-B, Appendix E, OS 4: Problem Resolution and Continuous Improvement states:

> *"The GAO values and fosters an environment of continuous improvement and timely and effective problem resolution."*

ESRB observed several electrical equipment cabinets labeled with an Arc flash hazard sign and other high voltage electrical equipment doors left open, depicted below in Figures 1 and 2 Open electrical equipment cabinets pose a safety hazard to life and limb for staff, contractors, and emergency personnel. The Plant must continuously monitor electrical equipment and ensure doors are properly closed.

Figure 1: Electrical hazard 110/206 V breaker box door was open in the Unit 1 MCC.

Figure 2: Electrical hazard door was open in the Cooling Tower I/O Building.

Finding 4: The maintenance of Safety Data Sheets (SDS) requires improved coordination and upkeep.

GO 167-B, Appendix D, MS 1: Safety states in part:

> *"The protection of life and limb for the work force is paramount. GAOs have a comprehensive safety program in place at each site. The company behavior ensures that personnel at all levels of the organization consider safety as the overriding priority. This is manifested in decisions and actions based on this priority."*

GO 167-B, Appendix E, OS 4: Problem Resolution and Continuous Improvement states:

> *"The GAO values and fosters an environment of continuous improvement and timely and effective problem resolution."*

GO 167-B, Appendix E, OS 20: Preparedness for On-Site and Off-Site Emergencies states in part:

> *"The GAO plans for, prepares for, and responds to reasonably anticipated emergencies on and off the plant site, primarily to protect plant personnel and the public, and secondarily to minimize damage to maintain the reliability and availability of the plant."*

ESRB reviewed the Manufacturer Safety Data Sheets (SDS). Upon review of the materials present at the facility and the SDSs, ESRB found that the Plant was missing the SDS for Permacare PC 7408. Plant staff stated that Permacare PC 7408 was no longer used but still on site. Because the chemical is present at the facility it is considered a risk as employees and contractors may encounter it. If the chemical is going to be stored at the facility, the staff must file an SDS for Permacare PC 7408. ESRB observed a combination of hard copy, online, and shared drive SDS records which resulted in difficulty locating specific SDSs requested by ESRB. The Plant requires improvement to its SDS management and tracking. All SDSs should be stored in each repository the plant elects to upkeep (hardcopy binder, online, shared drive, or multiple locations) so SDSs can be easily found and reviewed in the event of an emergency.

Figure 3: Permacare PC 7408 Stored at Sunrise Power

Finding 5: Plant staff must adhere to the Plant's Lock Out Tag Out (LOTO) procedure and correctly fill out LOTO forms and complete an annual review.

GO 167-B, OS 2: Organizational Structure and Responsibilities states:

> *"The organization with responsibility and accountability for establishing and implementing an operation strategy to support company objectives for reliable plant operation is clearly defined, communicated, understood and is effectively implemented. Reporting relationships, control of resources, and individual authorities support and are clearly defined and commensurate with responsibilities."*

GO 167-B, OS 14: Clearances states:

> *"Work is performed on equipment only when safe. When necessary, equipment is taken out of service, de-energized, controlled, and tagged in accordance with a clearance procedure. Personnel are trained in the clearance procedure and its use, and always verify that equipment is safe before any work proceeds. Among other things:*
>
> A. *The GAO prepares and maintains a clearance procedure. The clearance procedure contains requirements for removing a component from service and/or placing a component back into service.*
> B. *The GAO ensures that personnel are trained in and follow the clearance procedure."*

OSHA Standard for Hazardous Energy Control Procedures 1910.269(d)(2)(v) states:

> *"The employer shall conduct a periodic inspection of the energy control procedure at least annually to ensure that the procedure and the provisions of paragraph (d) of this section are being followed."*

The Plant has an established Lockout-Tagout procedure that is followed and regularly reviewed. ESRB was able to review the procedure as well as the LOTO binder and archive used to store previous years LOTOs. Upon review of the LOTOs and the LOTO procedure, a section in the LOTO requests the associated work order number be recorded as part of the LOTO. After reviewing a sample representation of the LOTOs available, it was clear that the work order numbers are not being tracked on the LOTO paperwork as prescribed in the Plant's LOTO procedure and LOTO Request Form, depicted in Figure 4 below. ESRB discussed this with the Plant and learned listing all workorders on a sheet may not be practical due to one LOTO being used for many work orders, such as a prolonged outage. The Plant needs to adhere to the existing procedure and track work orders on the LOTO forms.

Additionally, the Plant needs to conduct annual reviews of the LOTO procedure. In the LOTO provided to ESRB for the audit, the last annual peer review was completed on February 2, 2022, as seen in Figure 5. Per 1910.269(d)(2)(v), the approved Plant personnel are required to review the procedure at least annually.

Attachment 2 – LOTO Request Form

SUNRISE POWER LLC. LOTO REQUEST FORM

LOTO Request

Note: To be completed by LOTO Requestor and forwarded to the LOTO Authority

Requestor Name:		Submitted Date:	
Work Order (Attach if availalble, N/A if not):		Unit:	
LOTO to be Accepted and Reported on by:		Date LOTO needed:	Time LOTO needed:
Grounds Required? ☐ Yes ☐ No	Conditional? ☐ Yes ☐ No	Multi Shift Holder? ☐ Yes ☐ No	Modified work scope Request? ☐ Yes ☐ No
Equipment Description:			
Detailed Work Scope:			
Special Conditions of Equipment:			

LOTO Approval

Note: To be completed by LOTO Authority

LOTO Authority Request Approved Signature:		Date/Time:
Isolation Procedure: ☐ Approved ESIP ☐ New/Modified ESIP ☐ Active LOTO	1st LOTO Autority ESIP Approved Signature:	Date/Time:
LOTO Procedure Name:		LOTO Number:

NOTE: IF USING A NEW OR MODIFIED ESIP A WALKDOWN OF EID(s) SHALL BE PERFORMED.
THE WALKDOWN SHOULD INCLUDE A REVIEW OF DRAWINGS AND MANUALS.

Figure 4: LOTO Request form

PEER REVIEW TABLE

Title	Operator	Procedure Admin	Operations Manager
Initial/ Date:	EC 2-3-22	MA 2.2.22	MB 2.2.22

LOTO

Figure 5: LOTO Procedure Annual Review Table

Finding 6: The Plant must conduct an evacuation drill and provide a written critique of the drill.

GO 167-B, Appendix E, OS 1: Safety states:

> *"The protection of life and limb for the work force is paramount. GAOs have a comprehensive safety program in place at each site. The company behavior ensures that personnel at all levels of the organization consider safety as the overriding priority. This is manifested in decisions and actions based on this priority. The work environment and the policies and procedures foster such a safety culture, and the attitudes and behaviors of personnel are consistent with the policies and procedures."*

GO 167-B, Appendix E, OS 17: Records of Operation states:

> *"The GAO assures that data, reports and other records reasonably necessary for ensuring proper operation and monitoring of the generating asset are collected by trained personnel and retained for at least five years, and longer if appropriate."*

GO 167-B, Appendix E, OS 20: Preparedness for On-Site and Off-Site Emergencies states in part:

> *"The GAO plans for, prepares for, and responds to reasonably anticipated emergencies on and off the plant site, primarily to protect plant personnel and the public, and secondarily to minimize damage to maintain the reliability and availability of the plant.*
>
> *A. Plans for the continuity of management and communications during emergencies, both within and outside the plant,*
> *B. Trains personnel in the emergency plan periodically, and*
> *C. Ensures provision of emergency information and materials to personnel."*

At the time of ESRB's audit, the Plant had not conducted an annual emergency evacuation drill with the last record being from 2022. The last completed record of an emergency evacuation drill and critique of the drill is from 2022 and was found in the Work Order Management system. The Plant does have an evacuation drill procedure from a previous owner, NRG, with a checklist however the drill procedure checklist was not completed in 2023 so ESRB was unable to verify an emergency evacuation drill was conducted. The Plant stated that an evacuation drill was completed within the last calendar year; however, there was no evidence of the drill occurring in the work order management system, the Plant's logbook, or other paper record of the event. The Plant must conduct an annual emergency evacuation drill and provide a critique of the drill, and retain a record that a drill was conducted. Additionally, ESRB recommends labeling the muster points used during an emergency evacuation.

Finding 7: First aid kits are not labeled on the Plant's evacuation maps.

GO 167-B, Appendix D, MS 1: Safety states in part:

> *"The protection of life and limb for the work force is paramount. GAOs have a comprehensive safety program in place at each site. The company behavior ensures that personnel at all levels of the organization consider safety as the overriding priority. This is manifested in decisions and actions based on this priority."*

GO 167-B, Appendix D, OS 20: Preparedness for On-Site and Off-Site Emergencies states in part:

> *"The GAO plans for, prepares for, and responds to reasonably anticipated emergencies on and off the plant site, primarily to protect plant personnel and the public, and secondarily to minimize damage to maintain the reliability and availability of the plant."*

ESRB observed that first aid kits were not indicated on the Plant's evacuation maps, depicted in Figure 6 below. The evacuation map is up to date and highlights the correct evacuation plans and routes for the plant. However, the Plant must include first aid kits on its evacuation maps in case of emergencies for visitors and contractors.

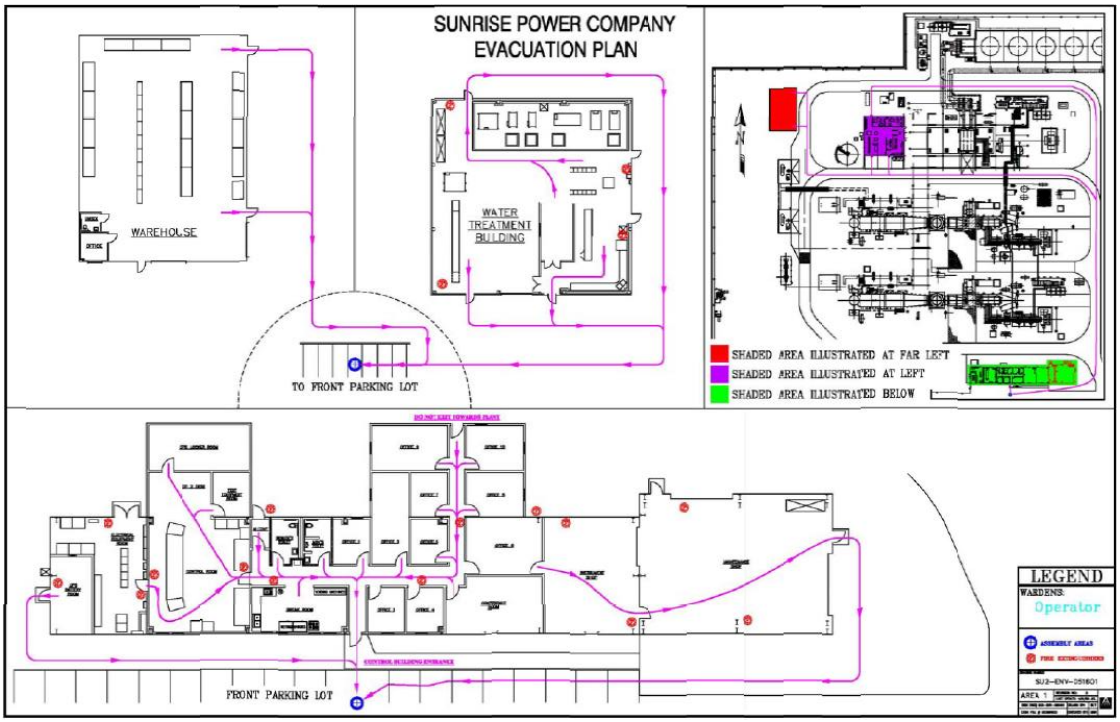

Figure 6: Plant evacuation map missing first aid kits.

Finding 8: ESRB staff observed various unlocked Post Indicator Valves (PIV) throughout the Plant.

GO 167-B, Appendix E, OS 1: Safety states in part:

> *"The protection of life and limb for the work force is paramount. GAOs have a comprehensive safety program in place at each site..."*

National Fire Protection Association (NFPA) 25 13.3.1.3 states:

> *"Each normally open valve shall be secured by means of a seal or a lock or shall be electrically supervised in accordance with the applicable NFPA standard"*

ESRB staff observed unlocked PIVs in the Plant as depicted in Figures 7 and 8. In one instance, the PIV had a lock, but the lock was not closed and in another instance the lock was missing. During the audit, Plant staff corrected the issue by replacing and adding locks where applicable. The Plant must conduct routine inspections of their PIV's and ensure that the valves are in their correct positions and are locked.

Figure 7: PIV with open lock.

Figure 8: PIV with no lock.

Finding 9: The Plant requires improved tracking for inspections of emergency safety equipment.

GO 167-B, Appendix D, MS 1: Safety states in part:

> *"The protection of life and limb for the work force is paramount. GAOs have a comprehensive safety program in place at each site. The company behavior ensures that personnel at all levels of the organization consider safety as the overriding priority. This is manifested in decisions and actions based on this priority."*

GO 167-B, Appendix D, MS 9: Conduct of Maintenance states:

> *"Maintenance is conducted in an effective and efficient manner so equipment performance and materiel condition effectively support reliable plant operation."*

GO 167-B, Appendix E, OS 11: Operations Facilities, Tools and Equipment states:

> *"Facilities and equipment are adequate to effectively support operations activities."*

GO 167-B, Appendix E, OS 20: Preparedness for On-Site and Off-Site Emergencies states in part:

> *"The GAO plans for, prepares for, and responds to reasonably anticipated emergencies on and off the plant site, primarily to protect plant personnel and the public, and secondarily to minimize damage to maintain the reliability and availability of the plant."*

At the time of ESRB's inspection in June of 2024, ESRB observed two escape respirators missing a May 2024 monthly inspection at the Unit 1 and 2 Ammonia Skids, depicted below in Figure 9. Escape respirators are used by personnel to evacuate the area in the event of an emergency or ammonia release. All escape respirators should be inspected monthly to ensure

they will function in the event of an emergency. The Plant stated that the individual in charge of escape respirators inspections no longer works at the Plant, resulting in the unperformed inspections. The Plant must complete regular inspections of safety equipment regardless of personnel changes and keep better track of emergency safety inspections in the future, so inspections are not missed.

Figure 9: Two escape respirators are missing May 2024 monthly inspections.

Finding 10: The Plant must repair and conduct routine visual inspections of windsocks.

GO 167-B, Appendix D, MS 1: Safety states in part:

> *"The protection of life and limb for the work force is paramount. GAOs have a comprehensive safety program in place at each site. The company behavior ensures that personnel at all levels of the organization consider safety as the overriding priority. This is manifested in decisions and actions based on this priority."*

GO 167-B, Appendix D, MS 9: Conduct of Maintenance states:

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> *"Facilities and equipment are adequate to effectively support operations activities."*

GO 167-B, Appendix E, OS 20: Preparedness for On-Site and Off-Site Emergencies states in part:

> *"The GAO plans for, prepares for, and responds to reasonably anticipated emergencies on and off the plant site, primarily to protect plant personnel and the public, and secondarily to minimize damage to maintain the reliability and availability of the plant."*

ESRB observed a damaged/deteriorated windsock, depicted in Figure 10 below. Windsocks are important for emergency evacuation procedures in the event of an ammonia release. The

windsocks placed around the site are used by plant staff to determine the direction of the wind so they can evacuate and avoid exposure to ammonia. The windsocks were deteriorated and would not be useful in determining the wind direction. The Plant must conduct routine visual inspections of windsocks and repair damaged windsocks to ensure proper operation in case of an emergency.

Figure 10: Damaged/deteriorated windsock on the west side of the property.

Finding 11: The Plant must perform repairs to fire safety equipment.

GO 167-B, Appendix D, MS 1: Safety states in part:

> *"The protection of life and limb for the work force is paramount. GAOs have a comprehensive safety program in place at each site. The company behavior ensures that personnel at all levels of the organization consider safety as the overriding priority. This is manifested in decisions and actions based on this priority."*

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> *"The GAO plans for, prepares for, and responds to reasonably anticipated emergencies on and off the plant site, primarily to protect plant personnel and the public, and secondarily to minimize damage to maintain the reliability and availability of the plant."*

Electric Safety and Reliability Branch (ESRB) observed a smoke detector in the Motor Control Center (MCC) that was suspended by internal wiring that are not intended to be load bearing,

depicted in Figure 11. Plant should correct issues with safety related equipment, including smoke detectors so Plant staff can be alerted to smoke or other safety issues as they occur. The Plant should correct the issue and conduct inspections of other safety-related equipment.

Figure 11: Loose smoke detector in the MCC.

Finding 12: The Plant requires improvement to the storage of hazardous chemicals in flammable storage containers.

GO 167-B, Appendix D, MS 1: Safety states:

> *"The protection of life and limb for the work force is paramount. The company behavior ensures that individuals at all levels of the organization consider safety as the overriding priority. This is manifested in decisions and actions based on this priority. The work environment, and the policies and procedures foster such a safety culture, and the attitudes and behaviors of individuals are consistent with the policies and procedures."*

GO 167-B, Appendix D, MS 9: Conduct of Maintenance states:

> *"Maintenance is conducted in an effective and efficient manner so equipment performance and materiel condition effectively support reliable plant operation."*

NFPA 1, Uniform Fire Code, Section 66.9.4.3 states in part:

> *"(2) Doors shall be well fitted, self-closing and equipped with a self-latching device"*

ESRB observed items stored on top of the machine shop flammable material cabinet, depicted in Figure 12 below. The flammable storage cabinet is labeled *"Do not Place Anything Above this Line!"* The Plant must properly dispose of and store equipment that is no longer in use, so that clutter is not created around the Plant or on top of the flammable storage cabinet.

Additionally, flammable storage containers should be equipped with self-closing and latching doors. Upon inspection of the flammable storage containers, the doors of the cabinet were opened and remained open. An example of this is shown in Figure 14. The Plant should conduct

a site wide inspection of flammable storage containers to ensure compliance with NFPA 1 Section 66.9.4.3.

Figure 12: Machine shop flammable material cabinet has items stored on top.

Figure 13: Flammable material cabinet has cardboard stored on top.

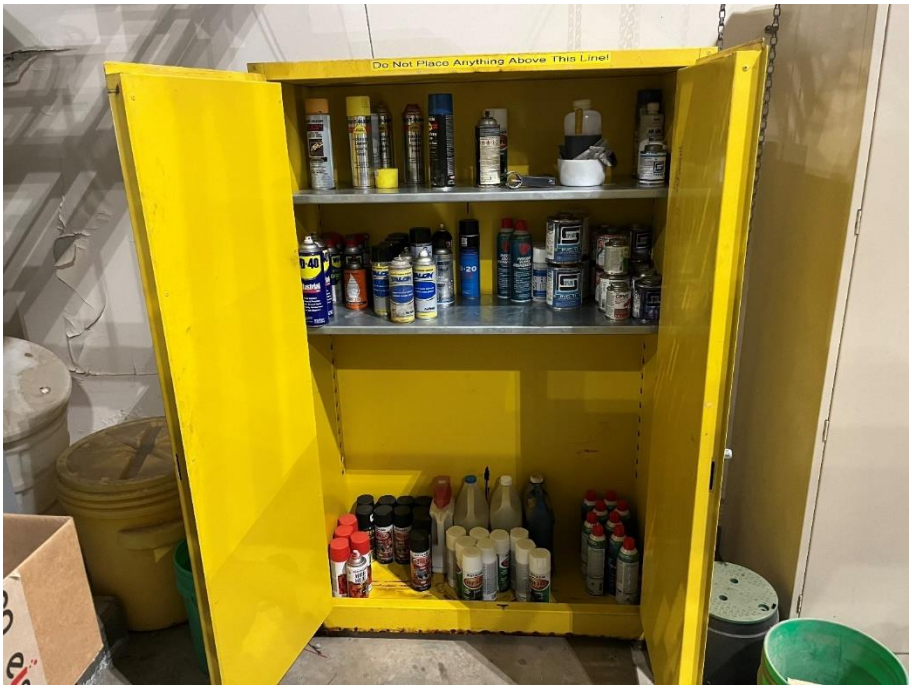

Figure 14: Flammable storage without self-closing doors.

Finding 13: Unit 1 Heat Recovery Steam Generator (HRSG) has heat damage and cracks along the fabric seal, in addition to cracking/corroded metal near the fabric seal.

GO 167-B, Appendix D, MS 1: Safety states:

"The protection of life and limb for the work force is paramount. The company behavior ensures that individuals at all levels of the organization consider safety as the overriding priority. This is manifested in decisions and actions based on this priority. The work environment, and the policies and procedures foster such a safety culture, and the attitudes and behaviors of individuals are consistent with the policies and procedures."

GO 167-B, Appendix D, MS 9: Conduct of Maintenance states:

"Maintenance is conducted in an effective and efficient manner so equipment performance and materiel condition effectively support reliable plant operation."

GO 167-B, Appendix E, OS 11: Operations Facilities, Tools and Equipment states:

"Facilities and equipment are adequate to effectively support operations activities."

ESRB observed significant heat damage and cracks along the Unit 1 HRSG fabric seal, as well as cracking/corroded metal, depicted in Figure 15 below. The Plant must address the heat damage to the fabric seal since corrosive seepage is causing corrosion/cracks to the metal structure and bolts near the fabric seal.

Figure 15: Heat damage and cracks along the fabric seal and cracking metal.

Finding 14: The Plant requires corrosion mitigation in certain areas.

GO 167-B, Appendix E, MS 9: Conduct of Maintenance states:

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GO 167-B, Appendix E, OS 1: Safety states in part:

"The protection of life and limb for the work force is paramount. GAOs have a comprehensive safety program in place at each site. The company behavior ensures that personnel at all levels of the organization consider safety as the overriding priority. This is manifested in decisions and actions based on this priority."

GO 167-B, Appendix E, OS 11: Operations Facilities, Tools and Equipment states:

"Facilities and equipment are adequate to effectively support operations activities."

ESRB observed moderate corrosion on pipes, structures, etc. throughout the Plant's facilities, depicted in Figures 16 to 18 below. Atmospheric corrosion mitigation is important to the safe and reliable operation of the Plant. The Plant must address corrosion on its facilities since it adversely impacts structural integrity and could lead to failure if not mitigated.

Figure 16: Flanges and piping at Unit 1 have moderate corrosion.

Figure 17: Flash drain for the evaporator cooler at Unit 1 and 2 has a hole due to corrosion.

Figure 18: Flanges and piping at Unit 2 have moderate corrosion.

Finding 15: The Plant must repair or replace missing, damaged, and deteriorated insulation.

GO 167-B, Appendix D, MS 1: Safety states:

"The protection of life and limb for the work force is paramount. The company behavior ensures that individuals at all levels of the organization consider safety as the overriding priority. This is manifested in decisions and actions based on this priority. The work environment, and the policies and procedures foster such a safety culture, and the attitudes and behaviors of individuals are consistent with the policies and procedures."

GO 167-B, Appendix D, MS 9: Conduct of Maintenance states:

"Maintenance is conducted in an effective and efficient manner so equipment performance and materiel condition effectively support reliable plant operation."

GO 167-B, Appendix E, OS 11: Operations Facilities, Tools and Equipment states:

"Facilities and equipment are adequate to effectively support operations activities."

ESRB noted that insulation for some piping at the second level of Unit 2 is damaged or missing as depicted in Figure 19. Proper insulation and the maintenance of the insulation is critical to the efficient operation of equipment. Plant must properly insulate piping and repair the damaged or missing insulation.

Figure 19: Piping insulation damaged/missing at second level of Unit 2.

Finding 16: Unit #1 and Unit #2 Preheater pumps have water leaks.

GO 167-B, Appendix D, MS 1: Safety states in part:

"The protection of life and limb for the work force is paramount. GAOs have a comprehensive safety program in place at each site. The company behavior ensures that personnel at all levels of the organization consider safety as the overriding priority. This is manifested in decisions and actions based on this priority."

GO 167-B, Appendix D, MS 9: Conduct of Maintenance states:

"Maintenance is conducted in an effective and efficient manner so equipment performance and materiel condition effectively support reliable plant operation."

GO 167-B, Appendix E, OS 11: Operations Facilities, Tools and Equipment states:

"Facilities and equipment are adequate to effectively support operations activities."

ESRB noted that Unit #1 and Unit #2 Preheater pumps have water leaks, shown in Figures 20 and 21. Leakage of water poses risks to worker safety and operational reliability. The Plant must repair these leaks to maintain safety, reliability, and efficiency of its facilities.

Figure 20: Boiler feed pump 201B has a water leak.

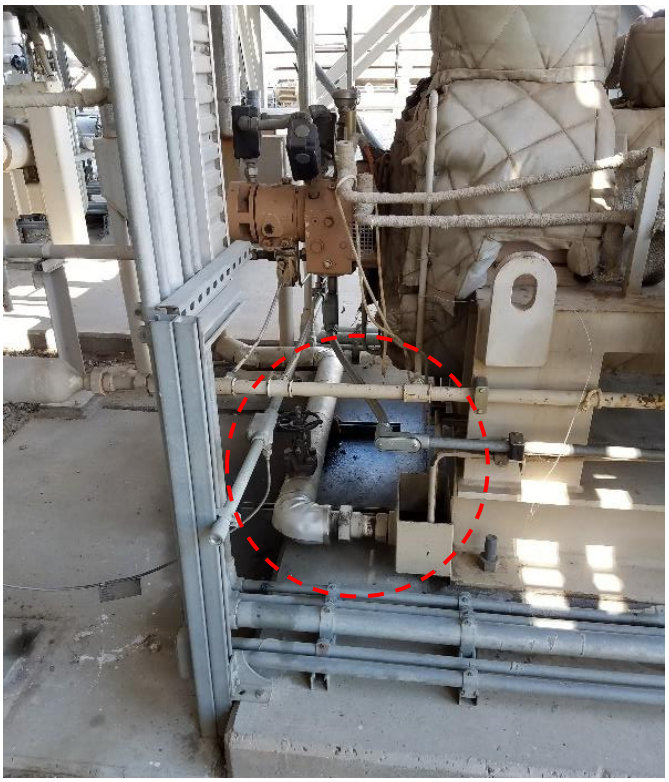

Figure 21: Boiler feed pump 201A has a water leak.

Finding 17: The Plant must improve inspections to better identify and correct corroded and illegible gauges.

GO 167-B, Appendix D, MS 1: Safety states in part:

"The protection of life and limb for the work force is paramount. GAOs have a comprehensive safety program in place at each site. The company behavior ensures that personnel at all levels of the organization consider safety as the overriding priority. This is manifested in decisions and actions based on this priority."

GO 167-B, Appendix D, MS 9: Conduct of Maintenance states:

"Maintenance is conducted in an effective and efficient manner so equipment performance and materiel condition effectively support reliable plant operation."

GO 167-B, Appendix E, OS 11: Operations Facilities, Tools and Equipment states:

"Facilities and equipment are adequate to effectively support operations activities."

ESRB noted that multiple gauges were corroded, broken, and/or illegible throughout the Plant's facilities, shown in Figures 22 through 24. The Plant must repair these gauges, so the gauge values can be easily observed and recorded during daily rounds as needed. ESRB understands many gauges at the Plant are able to be read from the Control Room; however, when working throughout the Plant or conducting inspections, properly legible gauges are important for Plant technicians.

Figure 22: A gauge missing the dial, indicator and cover near Steam Turbine Generator.

Figure 23: A gauge is filled with oil at boiler feed pump 201B.

Figure 24: HRC-CIRC water gauges have film making them illegible.

Finding 18: The Plant must improve storage of equipment when not in use.

GO 167-B, Appendix E, OS 1: Safety states:

> *"The protection of life and limb for the work force is paramount. GAOs have a comprehensive safety program in place at each site. The company behavior ensures that personnel at all levels of the organization consider safety as the overriding priority. This is manifested in decisions and actions based on this priority. The work environment and the policies and procedures foster such a safety culture, and the attitudes and behaviors of personnel are consistent with the policies and procedures."*

GO 167-B, Appendix E, OS 8: Plant Status and Configuration states:

> "*Station activities are effectively manage so plant status and configuration are maintained to support safe, reliable and efficient operation."*

ESRB observed large equipment resting on insulated pipes as shown in Figure 25. The apparatus was stored on the upper deck leading to the steam turbine generator. ESRB acknowledges it is not feasible to hoist large equipment to the top of work platform grating area each time it is used; however, the stored/idle tool or equipment should be stored in a position that does infringe upon regularly operating piping or equipment. Additionally, storing elsewhere may help prevent premature degradation of the insulation.

Figure 25: Equipment not in use stored against insulated pipes

Finding 19: Equipment on Unit 1's fuel heating station was left open and allowed for steam to escape.

GO 167-B, Appendix D, MS 1: Safety states in part:

> *"The protection of life and limb for the work force is paramount. GAOs have a comprehensive safety program in place at each site. The company behavior ensures that personnel at all levels of the organization consider safety as the overriding priority. This is manifested in decisions and actions based on this priority."*

GO 167-B, Appendix E, OS 1: Safety states:

> *"The protection of life and limb for the work force is paramount. GAOs have a comprehensive safety program in place at each site. The company behavior ensures that personnel at all levels of the organization consider safety as the overriding priority. This is manifested in decisions and actions based on this priority. The work environment and the policies and procedures foster such a safety culture, and the attitudes and behaviors of personnel are consistent with the policies and procedures."*

GO 167-B, Appendix D, MS 11: Plant Status and Configuration states:

> *"Station activities are effectively managed so plant status and configuration are maintained to support reliable and efficient operation."*

ESRB completed a walkthrough of the site and encountered a fuel heating station for the gas turbine. The fuel heating station heats the fuel using steam. Upon inspection, a lid to a vessel with steam was ajar, as seen in Figure 26, allowing for steam to escape. Allowing steam to escape can affect efficiency of the fuel heating system and is a safety risk for Plant staff or contractors. The lid should be secured and returned to the proper configuration.

Figure 26: Lid ajar at the Fuel Heating Station

Finding 20: The Plant needs to install and/or replace deteriorated confined space signs.

GO 167-B, Appendix E , OS 1: Safety states in part:

> *"The protection of life and limb for the work force is paramount. GAOs have a comprehensive safety program in place at each site. The company behavior ensures that personnel at all levels of the organization consider safety as the overriding priority. This is manifested in decisions and actions based on this priority."*

Occupational Safety and Health Administration (OSHA) Standard 1910.146(c)(2): Permit-required confined spaces states:

> *"If the workplace contains permit spaces, the employer shall inform exposed employees, by posting danger signs or by any other equally effective means, of the existence and location of and the danger posed by the permit spaces."*

ESRB staff identified multiple deteriorated/faded and missing confined space signs around the Plant, see Figures 27 and 28 below. Confined space signage is required for the operational safety of the Plant, so staff and contractors are aware of the potential safety hazards and the need to obtain a permit before entering a confined space. The Plant must continuously monitor the condition of all signage and replace them as needed.

Figure 27: The manhole by the Stage 1 air compressor has a faded confined space sign.

Figure 28: The manhole by Boiler Feed Pump 101A is missing a confined space sign.

Finding 21: The Plant must continue to maintain and replace missing/deteriorated signage.

GO 167-B, Appendix D, MS 1: Safety states in part:

> *"The protection of life and limb for the work force is paramount. GAOs have a comprehensive safety program in place at each site. The company behavior ensures that personnel at all levels of the organization consider safety as the overriding priority. This is manifested in decisions and actions based on this priority."*

GO 167-B, Appendix D, MS 9: Conduct of Maintenance states:

> *"Maintenance is conducted in an effective and efficient manner so equipment performance and materiel condition effectively support reliable plant operation."*

ESRB identified deteriorated/missing signage around the Plant's facilities. A few examples of the deteriorated and missing signage are depicted below in Figures 29 and 30. Signage is required to identify threats and safety hazards for staff, contractors, and emergency personnel. The Plant must continue to monitor the condition of all signage and replace as needed to aid with the efficient and effective identification of hazards.

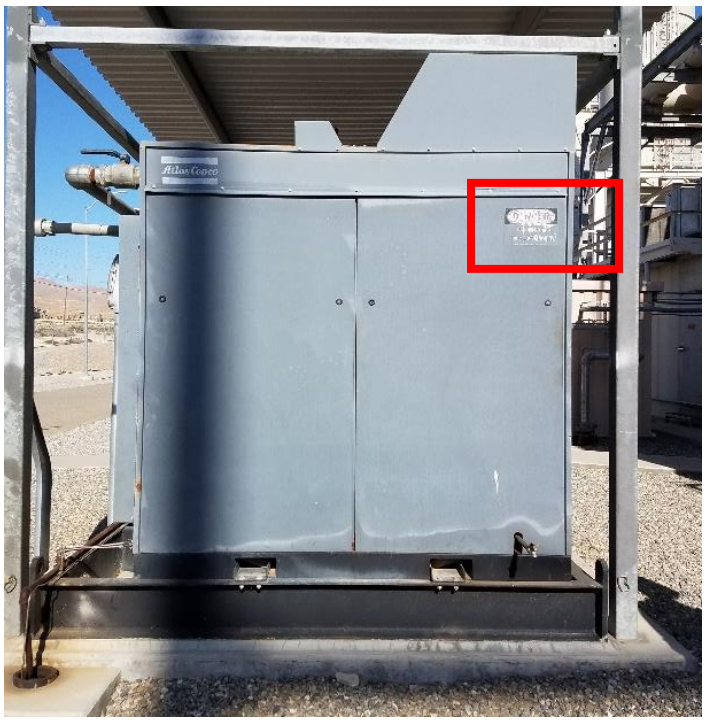

Figure 29: The Stage 1 air compressor has a faded/deteriorated danger sign.

Figure 30: The Unit 1 STG has a faded/deteriorated danger sign and hearing protection sign.

Finding 22: The Plant needs to install or replace NFPA 704 placards.

GO 167-B, Appendix E, OS 1: Safety states in part:

> *"The protection of life and limb for the work force is paramount. GAOs have a comprehensive safety program in place at each site. The company behavior ensures that personnel at all levels of the organization consider safety as the overriding priority. This is manifested in decisions and actions based on this priority."*

NFPA 704: 4.3 Location of Signs states:

> "*Signs shall be in locations approved by the authority having jurisdiction and as a minimum shall be posted at the following locations:*
>
> 1) *Two exterior walls or enclosures containing a means of access to a building or facility.*
> 2) *Each access to a room or area.*
> 3) *Each principal means of access to an exterior storage area."*

ESRB identified deteriorated, missing, and incorrect 704 signage around the Plant's facilities, listed below in Figures 31 through 34. Figure 31 shows an incorrect signage where the hazard indication numbers are displayed twice. Figure 32 shows a missing NFPA hazard placard at the main gate. Having an indication of the hazards present at the main gate is important so anyone who enters, including emergency responders are immediately aware of what hazards are present at the facility. Figure 33 shows a flammable storage cabinet without a hazard indicator, and ESRB did not observe posted on the building where the cabinet was located. Figure 34 shows the deteriorated NFPA placard for the ammonia tank. The numbers are faded and illegible. The NFPA signage is required to identify threats and safety hazards for staff, contractors, and emergency personnel. The Plant must correct the issues identified and monitor the condition of all signage at the Plant and replace as needed.

Figure 31: The PermaClean tank has an erroneous NFPA hazard diamond.

Figure 32: The main gate does not have an NFPA hazard diamond to indicate hazards present at the Plant.

Figure 33: The machine shop flammable material cabinet is missing an NFPA hazard diamond.

Figure 34: The Ammonia tank has a faded NFPA hazard diamond

II. Recommendations

Recommendation 1: The Plant needs to conduct routine Infrared thermography scans of the switchyard equipment.

GO 167-B, Appendix E, OS 4: Problem Resolution and Continuous Improvement states:

> *"The GAO values and fosters an environment of continuous improvement and timely and effective problem resolution."*

GO 167-B, Appendix E, OS 13: Routine Inspections states in part:

> *"Routine inspections by plant personnel ensure that all areas and critical parameters of plant operations are continually monitored, equipment is operating normally, and that routine maintenance is being performed. Results of data collection and monitoring of parameters during routine inspections are utilized to identify and resolve problems, to improve plant operations, and to identify the need for maintenance. All personnel are trained in the routine inspections procedures relevant to their responsibilities."*

GO 167-B, Appendix E, OS 17: Records of Operation states:

> *"The GAO assures that data, reports and other records reasonably necessary for ensuring proper operation and monitoring of the generating asset are collected by trained personnel and retained for at least five years, and longer if appropriate."*

Infrared (IR) thermography scans are a common tool used by powerplants and utilities as a measure of predictive maintenance, commonly seen with transformers and switchyard equipment. Conducting IR scans can be a strong tool to aid in the prevention of equipment failure, such as the breaker failure that occurred at the Plant. ESRB noted that the most recent Infrared scans that the Plant was able to provide were from 2020. The Plant was unable to locate IR scans for 2021-2023. ESRB found that the Plant keeps record of annual IR scans via email and no report is generated by Plant staff, only IR scan photos are sent to identify issues. The files were difficult to find and traced back to individual staff email accounts. ESRB recommends that IR scan records be stored in a shared email, shared drive, or as an attachment to completed work orders in a work order management system so all staff can access and know where the records are located. Additionally, ESRB recommends that the Plant request the contractor develop a formalized findings or analysis report for IR scans listing the date of inspection, photos, issues identified, and resulting work orders.

III. Documents Reviewed

ESRB staff reviewed the following records and documents:

Category	Ref #	CPUC-Requested Documents
Safety	1	Orientation Program for Visitors and Contractors**
	2	Evacuation Procedure**
	3	Evacuation Map and Plant Layout
	4	Evacuation Drill Report & Critique (last 3 years)
	5	Hazmat Handling Procedure**
	6	MSDS for All Hazardous Chemicals**
	7	Injury & Illness Prevention Plan (IIPP)**
	8	OSHA Form 300 (Injury Log) in last 4 years**
	9	OSHA Form 301 (Incident Report) in last 4 years**
	10	List of all CPUC Reportable Incidents (last 5 years)
	11	Root Cause Analysis of all Reportable Incidents (if any)
	12	Fire Sprinklers Test Report (last 3 years)**
	13	Insurance Report / Loss Prevention / Risk Survey (last 3 years)
	14	Lockout / Tagout Procedure **
	15	Arc flash Analysis**
	16	Confined Space Entry Procedure**
	17	Plant Physical Security and Cyber Security Procedures and Records**
	18	Fire Protection System Inspection Record**
	19	Job Safety Analysis Program**
	20	Hot work Procedure**
Training	21	Safety Training Records*
	22	Skill-related Training Records*
	23	Certifications for Welders, Forklift & Crane Operators*
	24	Hazmat Training and Record*
Contractor	25	Latest list of Qualified Contractors*
	26	Contractor Selection / Qualification Procedure**
	27	Contractor Certification Records*
	28	Contractor Monitoring Program**
Regulatory	29	Daily CEMS Calibration Records**
	30	Air Permit*
	31	Water Permit*
	32	Spill Prevention Control Plan (SPCC)**
	33	RATA Test Results (past 5 years)**
	34	Hazardous Waste Transfer Manifests (past 5 years)**
	35	Daily Round Sheets / Checklists*
	36	Feedwater Grab-sample Test Records**

O&M	37	Water Chemistry Manual**
	38	Logbook**
	39	List of Open/Backlogged Work Orders*
	40	List of Closed/Retired Work Orders (last 4 quarters)*
	41	Work Order Management Procedure (last 3 revisions, if applicable)**
	42	Computerized Maintenance Management System (Demonstration Onsite)**
	43	All Equipment Failure Root Cause Analyses **
	44	Vegetation Inspection & Control Program Records*
Main Plant Compressor(s)	45	Inspection Procedures and Records*
Document	46	P&IDs*
	47	Vendor Manuals*
Spare Parts	48	Spare Parts Inventory List*
	49	Shelf-life Assessment Report*
Management	50	Employee Performance Review Procedures and Verifications**
	51	Organizational Chart*
Steam Piping	52	Scaling Inspection & Removal Program and Records*
	53	Safety Valve Test Records*
	54	Hot Spots / IR Inspection Reports*
	55	FAC Inspection Procedure & Measurements*
	56	Corrosion Under Insulation Inspection Program*
	57	Pipe Hangers / Support Calibration Records*
Steam Turbine	58	NDE Reports*
	59	Overspeed Trip Test Records*
	60	Bearing Lube Oil Analysis Reports*
	61	DC Lube Oil Pump Test Records*
	62	Emergency Stop Valve Test Records on Main Steam Line*
	63	Borescope Inspection Records*
	64	Most recent Major/Minor STG inspection reports*
Generator	65	Bearing Lube Oil Analysis*
	66	Maintenance & Inspection Procedures (or related documents)**
	67	Polarization Test Records*
Transformer	68	Hot Spots / IR Inspection Reports*
	69	Oil Analysis Reports*
Cathodic Protection	70	Procedures and Inspection Records*
Cooling Tower System	71	Cooling Fans & Motors Inspection Records*
	72	Cooling Tower Structural Integrity Assessment*
	73	Condensate Pumps Maintenance Records*
Reinjection Pumps	74	Maintenance & Inspection Procedures and Records*
Instrumentation	75	Instrument Calibration Procedures and Records*

Test Equipment	76	Calibration Procedures and Records*
Emission Control Equipment	77	Maintenance & Inspection Procedures and Records**
Internal Audit	78	Internal Audit Procedures and all Records**

* Provide data in a searchable format such as a searchable PDF, Word Document, Excel Spreadsheet, etc.

** These items may be provided on-site by the first day of the audit.