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

October 17, 2023

Alfonso Rodriguez
Plant Manager
Delta Energy Center
1200 Arcy Lane,
Pittsburg, CA 94565

SUBJECT: **Generation Audit of Delta Energy Center - Audit Number GA2023-15DE**

Dear Mr. Rodriguez:

On behalf of the Electric Safety and Reliability Branch (ESRB) of the California Public Utilities Commission (CPUC), Stephen Lee, Stephen Hur, and Emmanuel Salas of ESRB staff conducted a generation audit of the Delta Energy Center from August 14 through August 17, 2023.

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 November 14, 2023 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 to achieve full compliance with GO 167-B.

Please submit your response to Stephen Lee at Stephen.Lee@cpuc.ca.gov. Please note that although Delta Energy Center 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.

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". The request should be sent to Stephen Lee with a copy to me and the GO 167 inbox GO167@cpuc.ca.gov by October 31, 2023.

Thank you for your courtesy and cooperation throughout the audit process. If you have any questions concerning this audit, please contact Stephen Lee at Stephen.Lee@cpuc.ca.gov or (916) 661-2353.

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

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 (Supervisor), ESRB, SED, CPUC
Stephen Lee, Senior Utilities Engineer (Specialist), ESRB, SED, CPUC
Stephen Hur, Utilities Engineer, ESRB, SED, CPUC
Emmanual Salas, Utilities Engineer, ESRB, SED, CPUC

CPUC AUDIT FINDINGS OF
DELTA ENERGY CENTER
AUGUST 14 – AUGUST 17, 2023

I. Findings

Finding 1: The Plant's Emergency Evacuation Map and Hazardous Materials Map indicate inconsistent locations for spill kits and windsocks.

GO 167-B, Appendix E, Operation Standard (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 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. Among other things, the GAO: […]*
>
> *C. Ensures provision of emergency information and materials to personnel."*

ESRB identified that the locations of spill kits and windsocks indicated on the Plant's Emergency Evacuation Map and Hazardous Materials Map are inconsistent. [redacted] The Plant must create a plan to correct these discrepancies and verify that the maps accurately reflect the physical locations of the equipment.

Additionally, the Plant must install evacuation maps on or near all exit doors in buildings that are normally occupied by Plant personnel, such as office buildings. ESRB did not observe any evacuation maps posted inside the maintenance staff's building.

Finding 2: The Plant must continue to maintain and replace missing or deteriorated signage.

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."*

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. The company behavior ensures that individuals at all levels of the organization consider safety*

as the overriding priority."

GO 167-B, Appendix D, MS 4: Problem Resolution and Continuing Improvement states:

"The company values and fosters an environment of continuous improvement and timely and effective problem resolution."

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 safe, reliable and efficient operation."

ESRB observed several deteriorating and missing signs and labels, including pipe labels and chemical identification labels. These signs help inform employees, contractors, and visitors who may be unfamiliar with the equipment of their inherent dangers. The Plant must continue to perform routine inspections to identify damaged, degraded, or missing signs and it must immediately replace the following missing or deteriorated signs:

1. There was an unlabeled chemical container [redacted]. The Plant must confirm the contents of the container and relabel it.

Figure 1: Unlabeled chemical storage container [redacted].

2. [redacted].

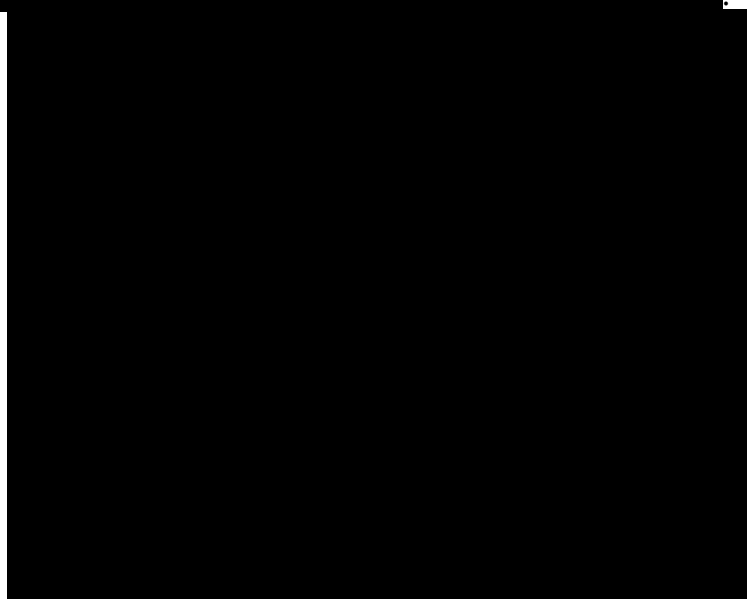

Figure 2: Illegible labels [redacted].

3. Various [redacted] labels [redacted] were damaged.

Figure 3: Various damaged labels [redacted].

Finding 3: [redacted] Fire Suppression need to be made compliant with GO 167-B.

GO 167-B Guidelines for Appendix E, OS 28: Equipment and Systems states in part:

"GAO complies with these Operation Standards (1-27) considering the design bases (as defined in the Appendix) of plant equipment and critical systems. The GAO considers the design basis of power plant equipment when as required by other standards it, among other things:

Z. Fire Protection System

f. Fire Protection Equipment Markings

1. Locations employing low-pressure and high-pressure water systems clearly differentiate each system.

2. Fire protection equipment, including but not limited to fire blanket boxes, pumps, hose locations, hydrants, sirens, and extinguishers, are painted red."

[redacted] Fire Suppression System are missing proper demarcation. Non-plant personnel and contractors may accidentally cut or reroute fire suppression piping while performing services. Proper demarcation of the fire suppression system, specifically being painted red or being properly labeled, will prevent such costly errors.

[redacted]

Figure 4: View of [redacted] unlabeled fire suppression system.

Figure 5: The fire suppression systems [redacted] are not properly demarcated. The approximate paths of the fire suppression piping are annotated with red dashed lines.

Finding 4: The Plant needs to replace defective indicator lights.

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 observed that status indicator lights on panels throughout the plant were not working. [redacted]. The Plant repaired the burned-out light [redacted] during the audit. Moving forward, the Plant must continue to identify and repair defective control panel lights to ensure there is an additional way to verify the operational status of the equipment.

Figure 6: Broken [redacted] status light.

Figure 7: Lights on the [redacted] are not working.

Finding 5: The Plant did not identify equipment deficiencies and abnormal conditions during its regular routine inspections.

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 8: Plant Status and Configuration states:

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

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

"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."

During the tour of the Plant's facilities, ESRB observed conditions that required repairs. These included findings such as broken gauges and oil leaks. The Plant must continue to conduct thorough routine inspections to identify abnormal conditions. The following findings must be addressed:

1. There was an unsecured wire dangling outside of the [redacted]. During the audit, the Plant confirmed the wire was not in use and removed it.

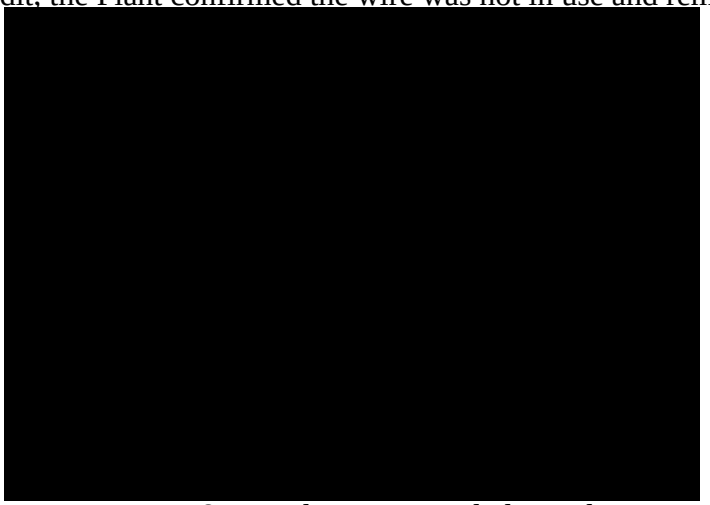

Figure 8: Dangling wire circled in red

2. The pressure gauge [redacted] was maxed out. The Plant must repair, replace, or recalibrate the gauge so the values can be easily observed locally at the equipment and recorded [redacted] as needed.

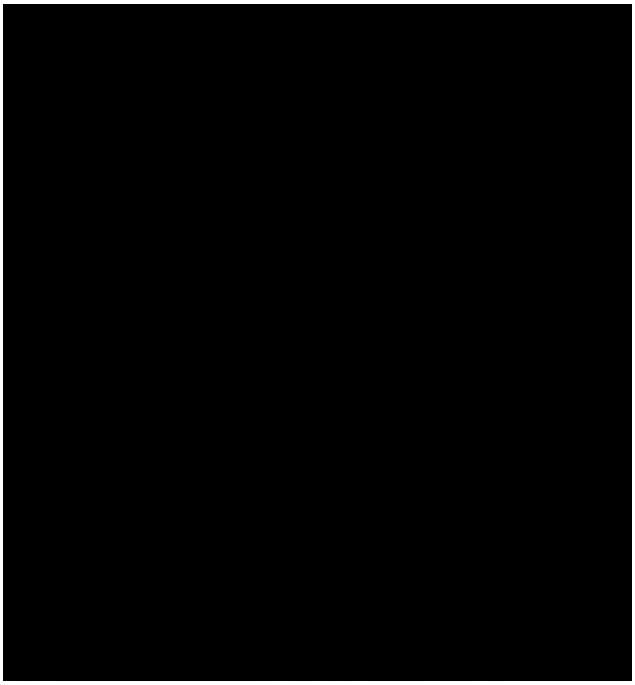

Figure 9: Topped out pressure gauge [redacted].

3. The thermocouple [redacted] had exposed electrical contacts due to a missing protective cover. The Plant must install a new cover over the thermocouple.

Figure 10: Missing protective cap over a thermocouple.

4. The [redacted] motor had an oil leak. There was no work order to track the leak. During the audit, the Plant created a new work order to track and monitor the issue. Moving forward, the Plant must enter all known equipment deficiencies into its work management system in a timely manner to ensure all issues are documented, tracked, and corrected.

Figure 11: Leaking oil [redacted] motor, evidenced by soiled absorbent pads and oil droplets on the piping.

5. ESRB identified oil drip marks and oil sheen [redacted]. The Plant must continue to monitor the area to ensure there are no active oil leaks.

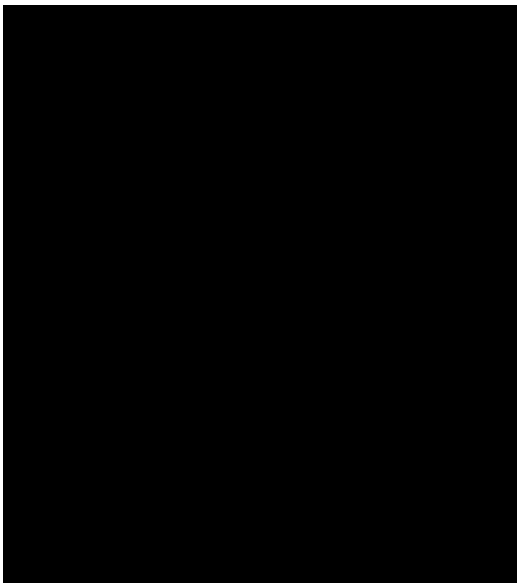

Figure 12: Oil drips [redacted].

6. The pipe insulation on [redacted] had evidence of damage. Piping systems may not be designed to support unintended loads, which can lead to damaged insulation, damaged pipes, or damaged pipe supports. The Plant must continue to inform all employees and contractors not to step on or lay equipment on top of insulated piping.

Figure 13: Deformed or crushed insulation [redacted].

Finding 6: The Plant must continue to monitor hotspots [redacted] and repair damaged insulation as needed.

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 8: Plant Status and Configuration states:

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

ESRB identified hot spots [redacted]. These hot spots were in excess of [redacted]°F and may indicate degradation of the internal [redacted] insulation. The Plant's [redacted]:

The hot spots that ESRB identified during the audit were also noted in prior 2022 [redacted] reports; however, the conditions still existed. The Plant must follow the respective [redacted] guidelines to inspect the insulation ASAP, reinspect the insulation at the first opportunity, or repair the insulation as needed.

1. The [redacted] has hot spots over [redacted]°F. [redacted]. The 2022 report recorded the maximum temperature as below [redacted]°F; however, ESRB found the temperature has since increased to above [redacted]°F and should be escalated to [redacted] based on the Plant's guidelines.

Figure 14: The [redacted] has hot spots over [redacted]°F.

2. The [redacted] is over [redacted]°F. This condition was also noted as [redacted] in the August 2022 [redacted] Report and was still present during the audit.

Figure 15: The [redacted] is over [redacted]°F.

3. The [redacted] shows signs of hot spot damage. The [redacted] also exceed [redacted]°F. These conditions were also noted as [redacted] in the August 2022 [redacted] Report and were still present during the audit.

Figure 16: The [redacted] shows signs of hot spot damage. The [redacted] also exceed [redacted]°F.

4. The [redacted] are damaged and exceed [redacted]°F. This condition was also noted as [redacted] in the August 2022 [redacted] Report and was still present during the audit.

Figure 17: The [redacted] are damaged, and temperature exceeds [redacted]°F.

Finding 7: **The [redacted] has an active oil leak since April 2018.**

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

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

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."*

The [redacted] has had an open work order since April 2018 for an oil leak. During the audit, ESRB identified the leak was still active [redacted]. [redacted] oil is essential to cool [redacted] and provide [redacted] insulation for the internal components. The Plant must repair this leak during the next outage or overhaul [redacted].

Figure 18: Active oil leak [redacted].

Finding 8: The Plant's Spill Prevention, Control, and Countermeasure (SPCC) Plan requires updates [redacted].

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 7: Operation Procedures and Documentation states in part:

> *"Procedures are current to the actual methods being employed to accomplish the task…"*

The Plant's current SPCC plan states that the [redacted] is equipped with a leak detection sensor with an associated alarm. During the audit, ESRB inspected the [redacted] with Plant staff and confirmed there was no dedicated leak detection sensor equipped. The Plant must update its SPCC to accurately reflect the equipment and alarms that are available on the [redacted]. Or if deemed necessary, the Plant may consider installing a leak detection sensor [redacted].

Finding 9: The Plant must update the references in its Physical Security Site Plan and also conduct annual security drills per its procedure.

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. Among other things, the GAO: […]"*

GO 167-B, Appendix E, OS 21: Plant Security states:

> *"To ensure safe and continued operations, each GAO provides a prudent level of security for the plant, its personnel, operating information and communications, stepping up security measures when necessary."*

ESRB identified that reference internet links in the Plant's Physical Security Site Plan are not working. Specifically, the linked references to North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection (CIP) Standards and the CPUC's Physical Security White Paper are broken.

Additionally, the Physical Security Site Plan references inactive NERC CIP Standards. The referenced CIP-006-5 Standard is inactive and must be updated to CIP-006-6. The referenced CIP-003-7 Standard is inactive and must be updated to CIP-003-8.

Lastly, the Physical Security Site Plan requires an annual security drill. ESRB did not identify any evidence the Plant was performing this annual security drill. The Plant must perform these annual security drills to ensure its personnel are prepared for any emergency situations.

Finding 10: The applicable Plant personnel are not performing required Contractor Safety management training.

GO 167-B, Appendix E, OS 6: Training Support states:

> *"A systematic approach to training is used to achieve, improve, and maintain a high level of personnel knowledge, skill, and performance. Each GAO provides a site-specific training program including on-the-job training, covering operations, including reasonably anticipated abnormal and emergency operations. Personnel are trained commensurate with their duties."*

[redacted]. ESRB did not identify any evidence that the Plant personnel took this refresher training. The Plant must continue to provide this required training. This will ensure personnel are trained to manage and monitor the work of contractors to minimize the potential of risks while working at the Plant.

II. List of Documents Reviewed

Category	Reference #	CPUC-Requested Documents
Safety	1	Orientation Program for Visitors and Contractors (Onsite)
	2	Evacuation Procedure
	3	Evacuation Map and Plant Layout
	4	Evacuation Drill Report & Critique (last 3 years)
	5	Hazmat Handling Procedure
	6	SDS 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	All Root Cause Analyses (last 5 years)
	12	Fire Protection System Test Report and Inspection Record (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
	18	5-year Water Based Fire Protection System Inspection Record
Training	19	Safety Training Records*
	20	Skill-related Training Records*
	21	Certifications for Welders, Forklift & Crane Operators*
	22	Hazmat Training and Records*
Contractor	23	Latest list of Qualified Contractors*

	24	Contractor Selection / Qualification Procedure
	25	Contractor Certification Records
	26	Contractor Monitoring Program
Regulatory	27	Daily CEMS Calibration Records (Onsite)
	28	Air Permit
	29	Water Permit
	30	Spill Prevention Control Plan (SPCC)
	31	CalARP Risk Management Plan (RMP)
O&M	32	Daily Round Sheets / Checklists (Onsite)
	33	Feedwater Grab-sample Test Records
	34	Water Chemistry Manual
	35	Logbook (Onsite)
	36	List of Open/Backlogged Work Orders*
	37	List of Closed/Retired Work Orders*
	38	Work Order Management Procedure
	39	Computerized Maintenance Management System (Demonstration Onsite)
Gas Turbine	40	Maintenance & Inspection Procedures (or Related Documents)
	41	Borescope Inspection Reports (last 2 years)
	42	Hot Gas Path Inspection Reports
	43	Combustors Inspection Reports
	44	Intercooler Inspection Reports (if applicable)
	45	Overspeed Trip Test Records
	46	Bearing Lube Oil Analysis Reports
	47	DC Lube Oil Pump Test Records
Main Plant Air Compressors	48	Inspection Procedures and Records
Document	49	P&IDs*

	50	Vendor Manuals (Onsite)
Spare Parts	51	Spare Parts Inventory List
	52	Shelf-life Assessment Procedures and Reports
Management	53	Employee Performance Review Procedures and Verifications
	54	Organizational Chart
HRSG	55	Tube Analysis Report
	56	Tube Clean Records (Internal and/or external)
	57	Safety Valve Test Records
	58	Hot Spots / IR Inspection Reports
	59	Structural Integrity Assessment
HEP	60	FAC Inspection Procedure & Measurements
	61	Pipe Hangers / Support Calibration Records
Steam Turbine	62	NDE Reports
	63	Borescope Inspection Records
	64	Most recent major STG inspection report
	65	STG inspection reports
	66	Overspeed Trip Test Records
	67	Bearing Lube Oil Analysis Reports
	68	DC Lube Oil Pump Test Records
	69	Emergency Stop Valve Test Records on Main Steam Line
	70	Steam Turbine Water Induction Prevention Procedures
Generator (Combustion and Steam Turbine Generators)	71	Bearing Lube Oil Analysis
	72	Maintenance & Inspection Procedures (or related documents)
	73	Electrical Test Records (Reactive power verification, excitation control modeling, polarization, etc.)
Transformers (All)	74	Hot Spots / IR Inspection Reports
	75	Oil Analysis Reports

Cathodic Protection	76	Procedures and Inspection Records
Air Cooled Condenser System	77	Cooling Fans & Motors Inspection Records
	78	Cooling Tower Structural Integrity Assessment
	79	Circulating Water Pumps Maintenance Records
Instrumentation	80	Instrument Calibration Procedures and Records
Test Equipment	81	Calibration Procedures and Records
Emission Control Equipment (SCR, Ammonia, NOx, CO)	82	Maintenance & Inspection Procedures and Records
Internal Audit	83	Internal Audit Procedures and all Records