CPUC AUDIT OF
RUSSELL CITY ENERGY CENTER
AUGUST 26 – AUGUST 29, 2024

I. Findings Requiring Corrective Action

Finding 1: A [redacted] cover with a faded confined space entry label was ajar.

General Order 167-B Appendix D, Maintenance Standard (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."*

California Code of Regulations (CCR) Title 8 § 5157 Permit Required Confined Space (c)(5)(B) states in part:

> "*When entrance covers are removed, the opening shall be promptly guarded by a railing, temporary cover, or other temporary barrier that will prevent an accidental fall through the opening and that will protect each employee working in the space from foreign objects entering the space."*

Electric Safety and Reliability Branch (ESRB) completed a site wide inspection of Russell City Energy Center (RCEC) and found a [redacted] cover ajar near [redacted], creating a significant safety hazard. An ajar [redacted] cover could result in an incident exposing an employee, contractor, or visitor to a significant injury. The cover is marked as a confined space and the method for preventing access to it must be maintained.

Figure 1: Confined Space [redacted] left ajar.

Finding 2: Emergency Personal Protective Equipment (PPE) lockers and their contents are not maintained.

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

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GO 167-B Appendix E, Operation Standard (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."*
>
> **Guidelines for Standard 2: Organizational Structure and Responsibilities** states in part:
>
> *"H. Personnel are adequately trained and equipped to mitigate the consequences of normal or emergency conditions and to manage reasonably anticipated emergency situations."*

Emergency PPE is staged around RCEC in critical and hazardous material handling areas, such as near the [redacted] and [redacted] tanks. RCEC PPE cabinets and the equipment within have become damaged and dysfunctional due to a lack of routine inspections and maintenance. Emergency PPE cabinets, as shown below, are essential in providing safety equipment for RCEC personnel doing rounds, contractors delivering hazardous materials, and visitors. The contents of these Emergency PPE cabinets have been allowed to deteriorate, becoming useless in an emergency. One cabinet was difficult to access due to rust, and another was locked and completely inaccessible. Emergency equipment must always be accessible and available. RCEC must restore the cabinets to their original operating condition and stock with new PPE.

Figure 2: PPE cabinets are rusted shut and difficult to open.

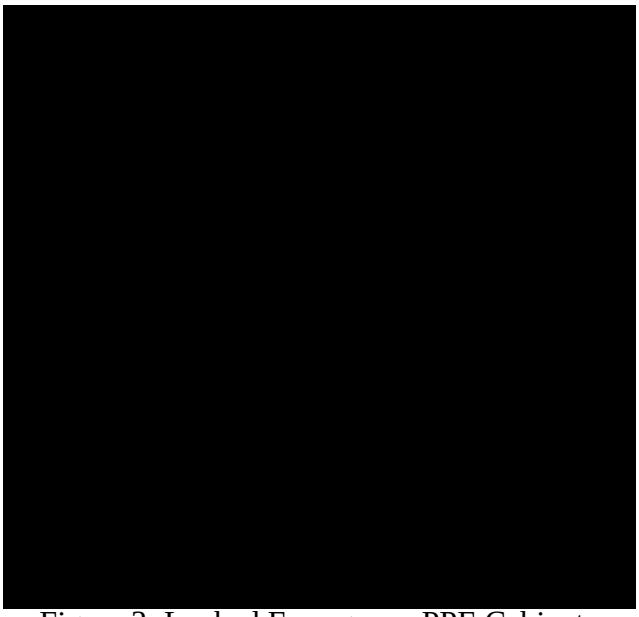

Figure 3: Locked Emergency PPE Cabinet.

Figure 4: Dysfunctional PPE include disorganized PPE, dissolved instruction sheets, rotted apron and boots.

Finding 3: [redacted] and [redacted] inspections and servicing practices are inadequate.

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 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."*

National Fire Protection Association (NFPA) 10: 7.1.3 Replacement Fire Extinguishers states:

> "*Fire extinguishers removed from service shall be immediately replaced with an extinguishers that are suitable for the type of hazard(s) being protected and shall be of at least equal rating"*

NFPA 10: 7.2.3 Corrective Action states:

> *"When an inspection of any fire extinguisher reveals a deficiency in any of the conditions in 7.2.2 (Inspection Procedures) or 7.2.2.4, immediate corrective action shall be taken."*

ESRB inspected numerous [redacted] placed strategically around the facility. At the time of the audit, RCEC was in the process of completing [redacted] inspections for [redacted], and one unit did not pass inspection. Figure 6 shows a [redacted], north of the [redacted] tanks near the south end of the [redacted] that did not pass its [redacted] inspection. Portable [redacted] that do not pass inspection must be removed from service and immediately replaced with a serviceable [redacted]. It is critical to remove and replace [redacted] that do not pass inspection to ensure fire safety and mitigate the risk of an incipient fire.

Additionally, ESRB found three [redacted] and a [redacted] that were missing or had outdated inspection tags. Inspection tags must be maintained and kept up to date.

1. [redacted] with a failed [redacted] inspection Tag.

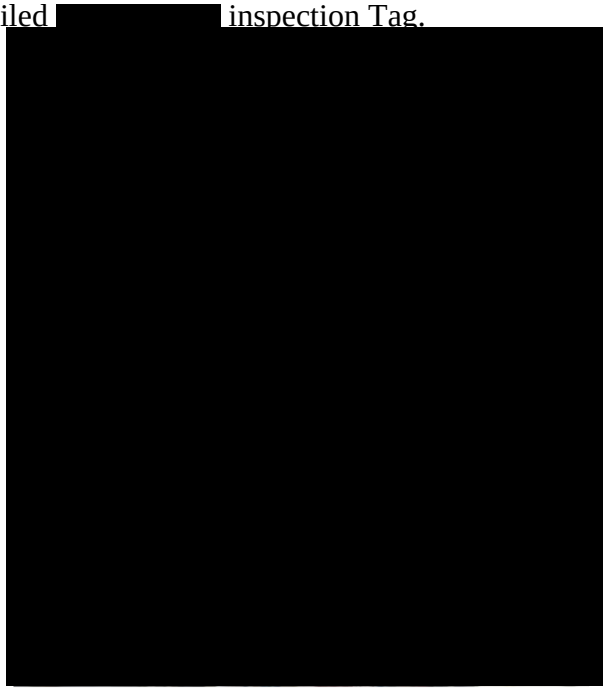

Figure 5: Portable [redacted] with failed [redacted] inspection.

2. The [redacted] is missing [redacted] checks. [redacted] checks must be completed.

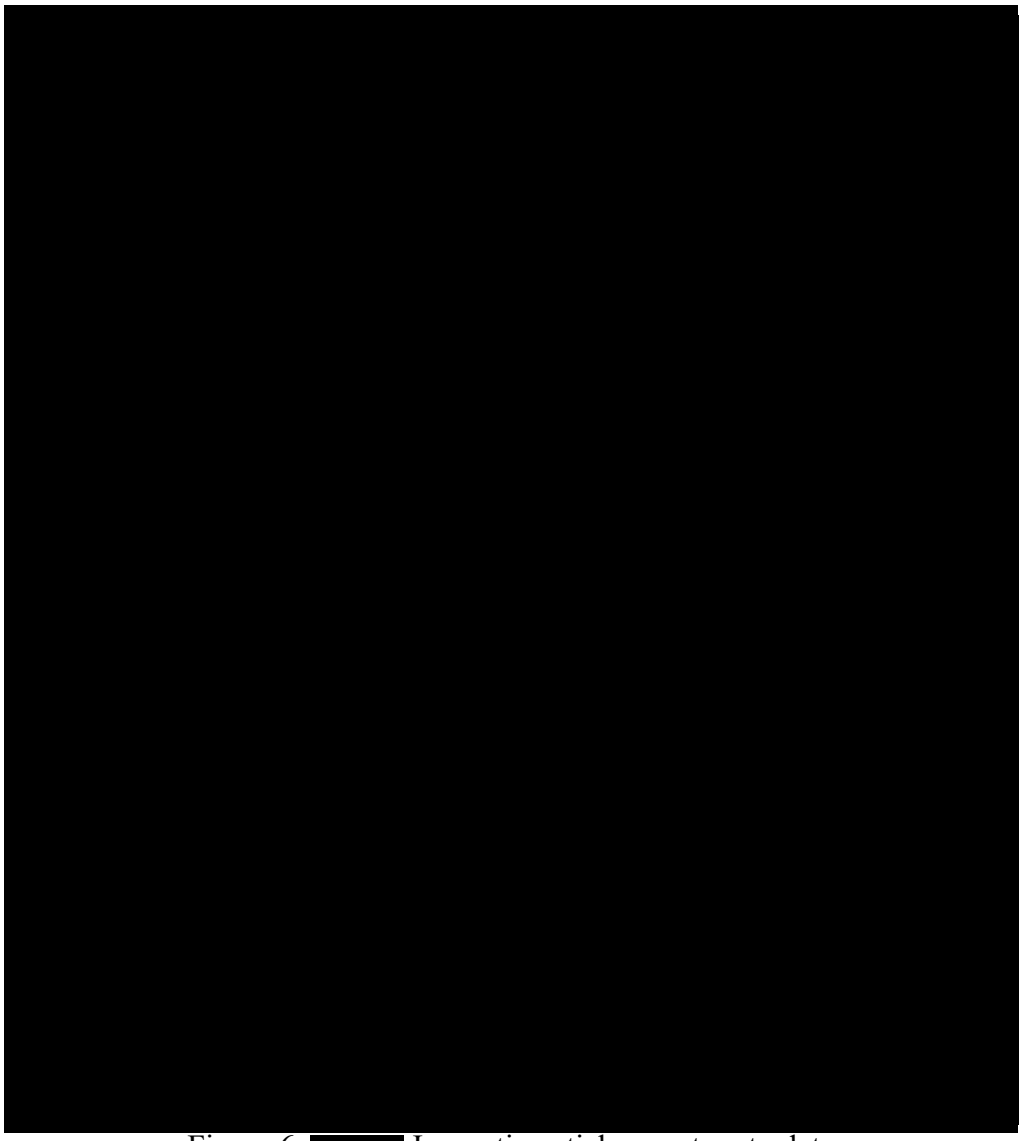

Figure 6: [redacted] Inspection stickers not up to date.

3. Missing [redacted] check

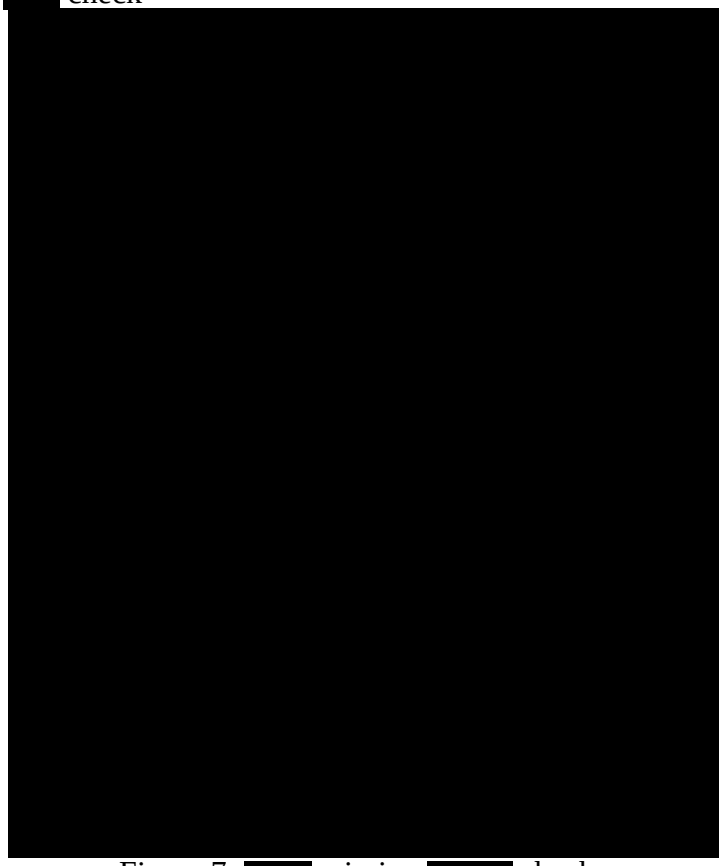

Figure 7: [redacted] missing [redacted] check.

4. Missing [redacted] checks

Figure 8: [redacted] Check required.

5. Monitor [redacted] are missing [redacted] inspection tags near [redacted].

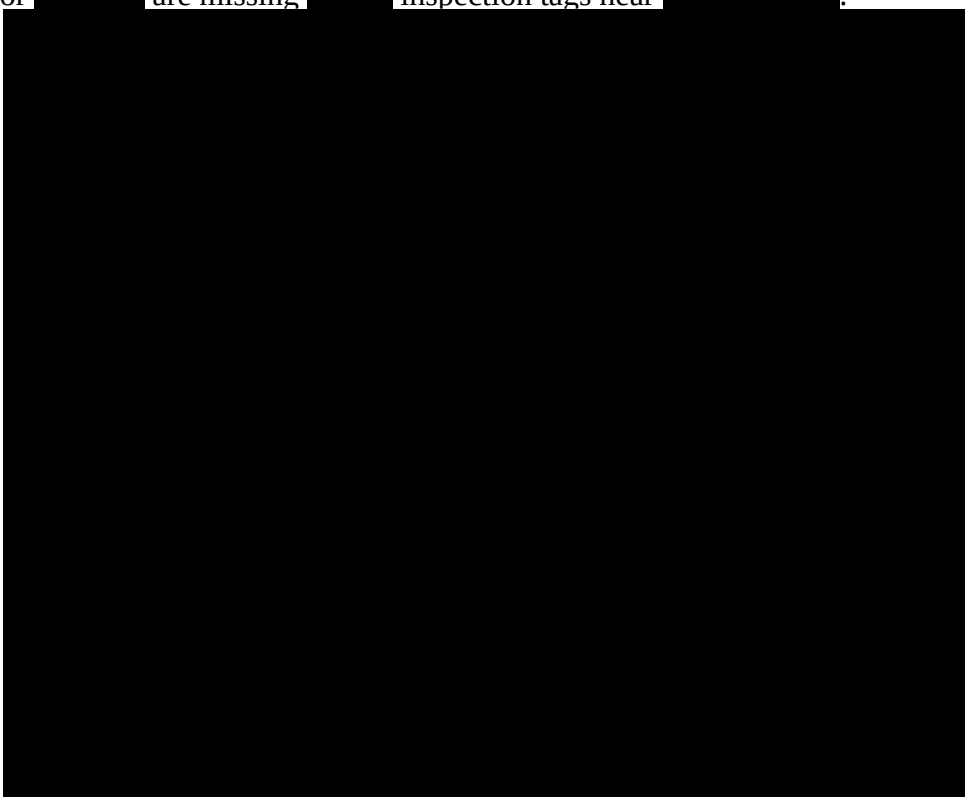

Figure 9: [redacted] missing [redacted] inspections.

Finding 4: RCEC has widespread housekeeping issues affecting health and safety.

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

> *"The protection of life and limb for the work force is paramount. The company's 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 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 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 3: Operations, Management and Leadership states:

> *"Operations management establishes high standards of performance and aligns the operations organization to effectively implement and control operations activities."*

Guideline to Standard 3 Operations, Management and Leadership states in part:

"D. Monitoring and Assessing

Operations management effectively monitors and assesses the performance of operations activities in the following areas:

13. General Area Housekeeping"

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

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

Guideline to Standard 11: Operations Facilities, Tools and Equipment states in part:

"C. Work areas are maintained in a clean and orderly condition."

ESRB witnessed excessive instances of poor housekeeping that require corrective actions. Trash, fan guards, washers, plastic bottles, rusted bars, excessive bird droppings and spider webs have gone unchecked. Trash and debris have clogged drains, and standing water, light fixture covers were evident in high traffic areas contributing to trip, slip, or fall hazards. The possible threat of Anaphylactic Shock from spider bites and the possible contraction of Histoplasmosis from bird droppings are evident. RCEC must establish procedures and training to correct widespread housekeeping issues to improve overall safety practices.

1. [redacted] and drains have trash and debris. The buildup of material can pose the risk of clogging the drains. The cleanliness of secondary containment areas and drains must be added to the RCEC's Spill Prevention, Control, and Countermeasure (SPCC) [redacted].

Figure 10: Debris flowing into and clogging drains

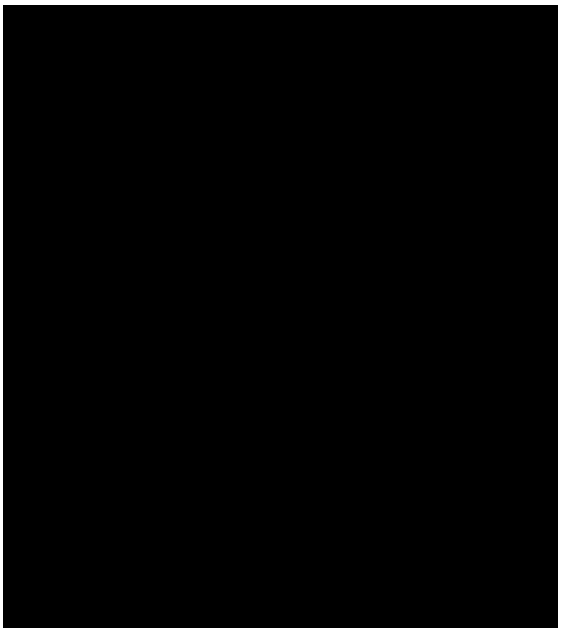

Figure 11: A completely clogged [redacted] drain with missing grate.

2. Water accumulation at the base of a ladder creates a trip and fall hazard. At the base of the ladder, there is indication of algal growth, which increases slip potential. RCEC needs to adopt a proactive response to water spills especially near ladders and stairs.

Figure 12: Water accumulation at the base of a ladder creates a hazard.

3. An excessive and uncontrolled spider infestation poses a health risk to RCEC. Spider bites can cause anaphylactic shock and hospitalization. Spiderwebs cover lighting, equipment, structures, safety equipment, and walkways. Examples are shown in the figures below. RCEC must implement a plan to clean the infestation and prevent future excessive infestations through proactive measures.

Figure 13: Infestation of spiderwebs on fire extinguishers and lighting

Figure 14: Spiderwebs on walkways and touch points.

4. Excessive bird droppings (guano) are evident near the [redacted]. Excessive guano, as shown below, creates a slip hazard when wet, corrosion of insulation coverings, and poses a health risk for personnel. Histoplasmosis is an infection caused by breathing in spores of a fungus often found in bird and bat droppings. Prolonged presence of guano increases the chances of infection occurring.

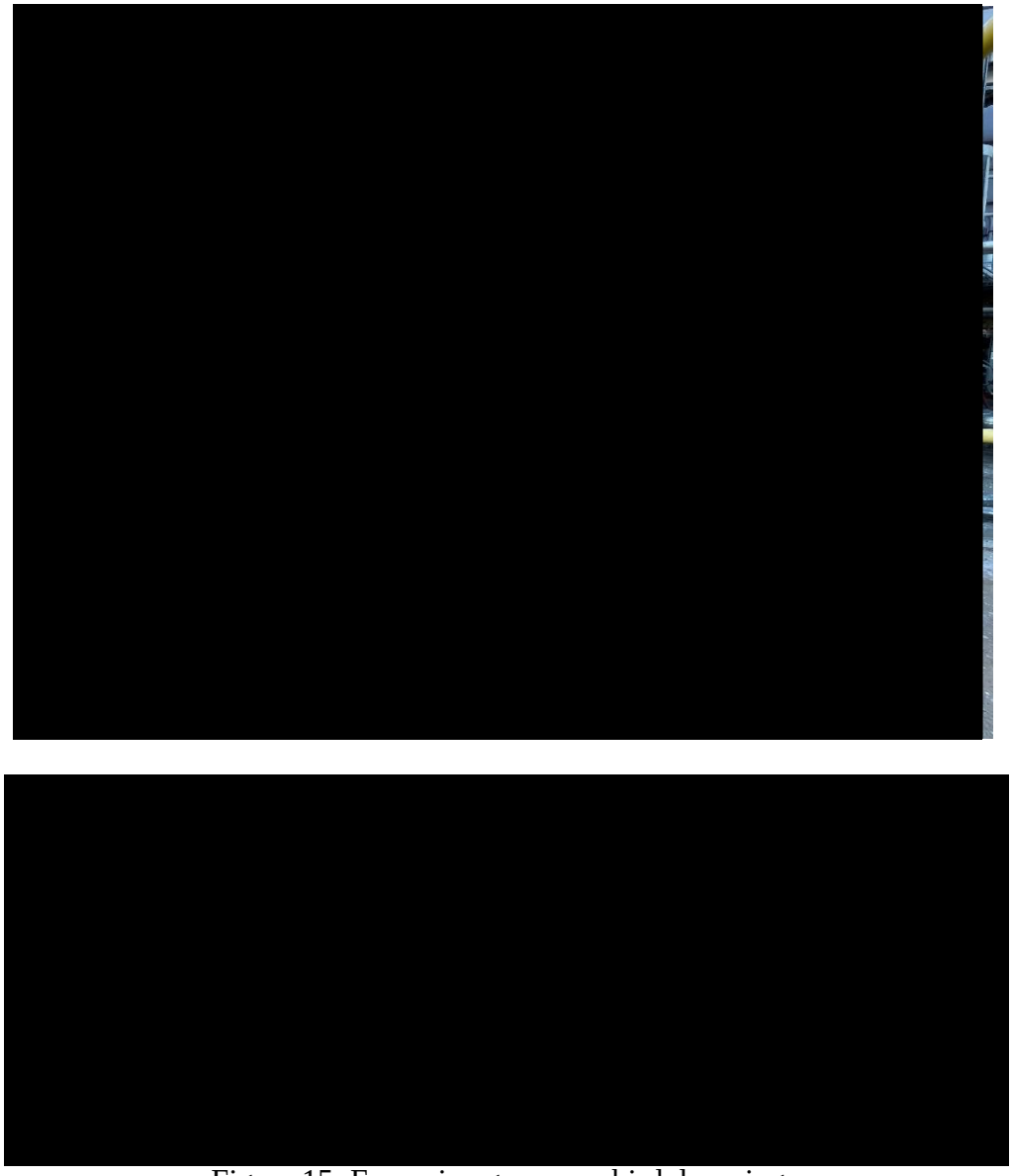

Figure 15: Excessive guano, or bird droppings

5. Light covers (metal guards) were dislodged and scattered throughout RCEC. The light fixtures are in disrepair and poor lighting contributes to trip and fall hazards.

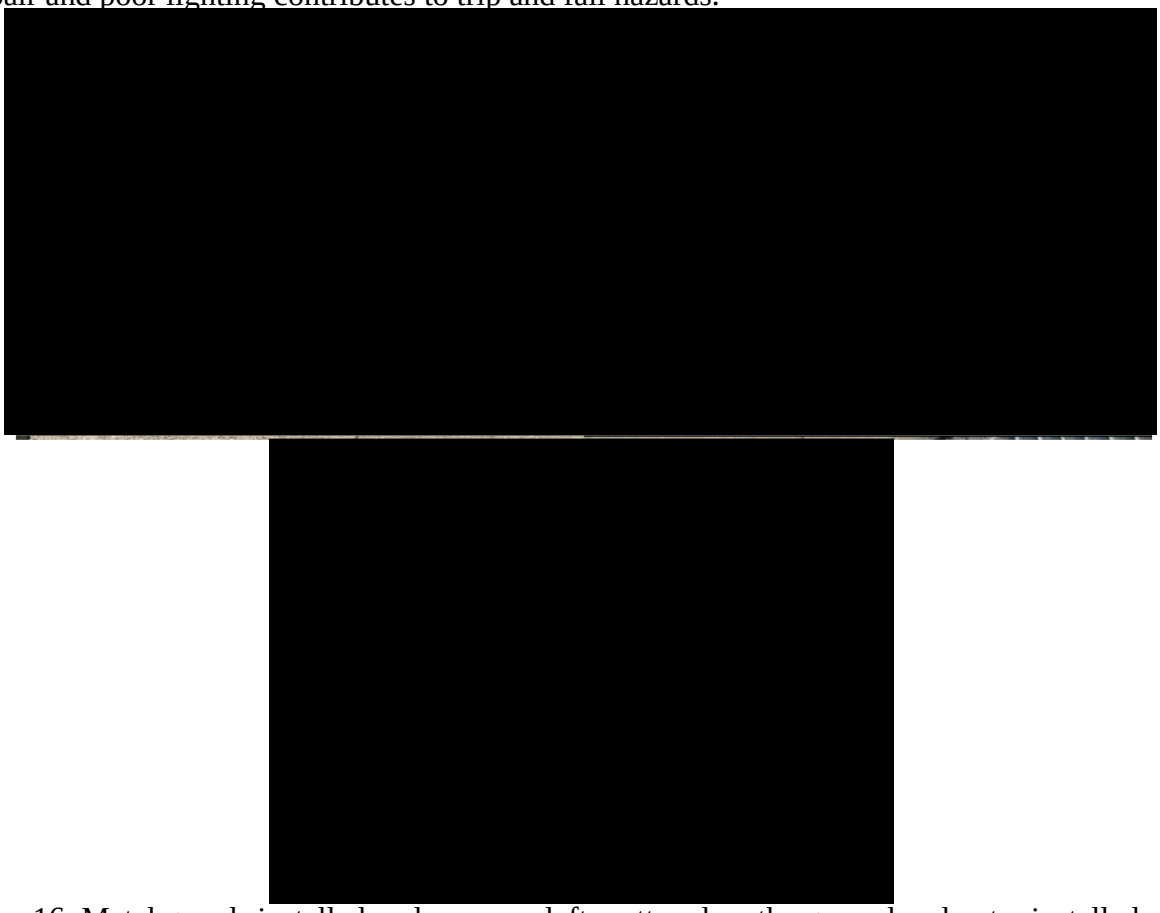

Figure 16: Metal guards installed on lamps are left scattered on the ground and not reinstalled on the lighting fixtures.

6. Debris is scattered around RCEC. General debris, consisting of trash, discarded supplies and rusted metal are evident across RCEC.

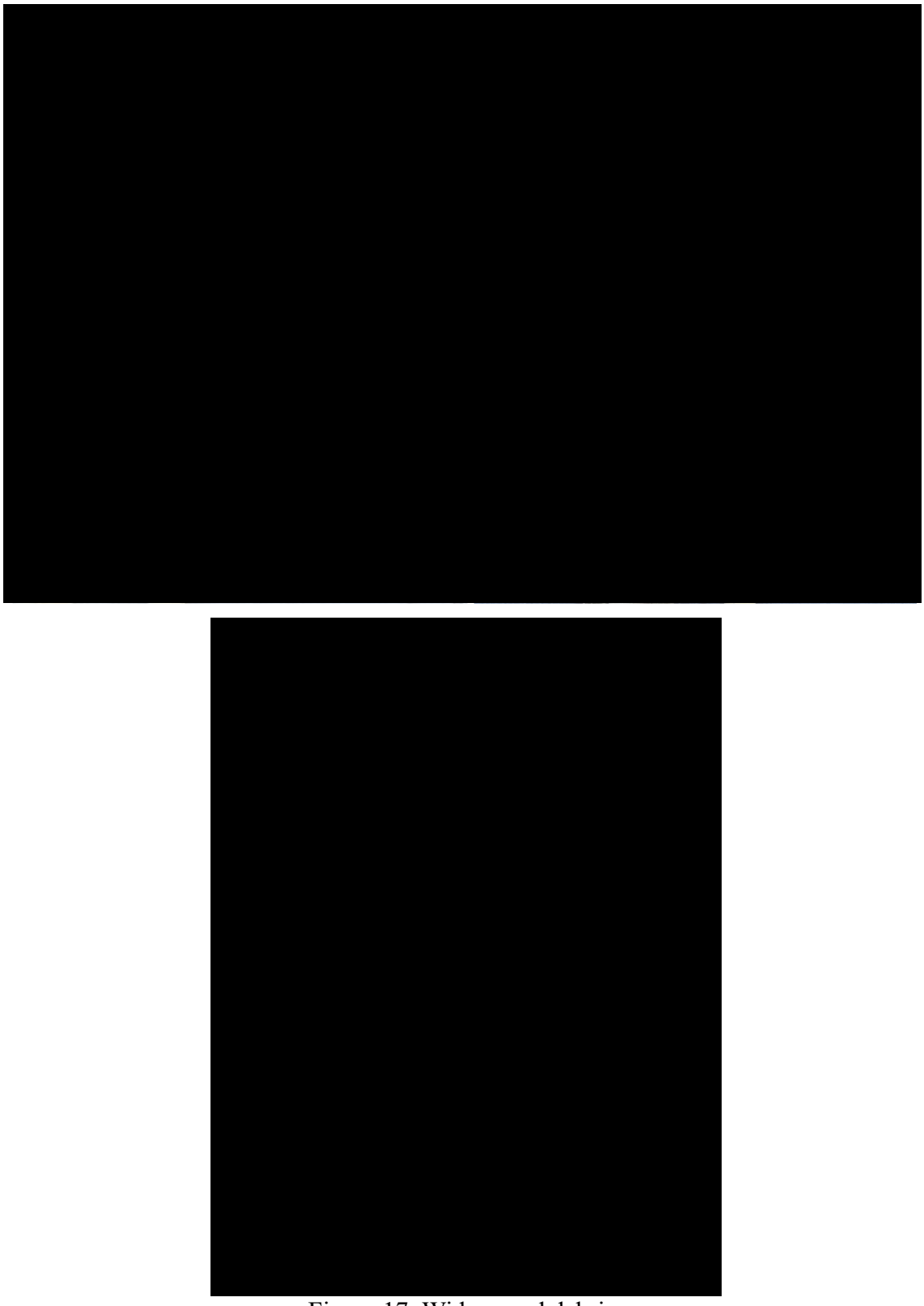

Figure 17: Widespread debris.

7. The [redacted] has significant amounts of residual oil dispersed across the top [redacted], seemingly from the yellow and black storage bin with hazardous materials. This is a slipping hazard.

Figure 18: Oil spread across the top [redacted] of the [redacted].

Figure 19: Oil is leaking from the [redacted] on top of the [redacted].

Finding 5: Safety practices in [redacted] environments must be improved and communicated to RCEC technical staff.

GO167-B Appendix E, OS 6: Training Support states in part:

"Personnel are trained commensurate with their duties."

Occupational Safety and Health Administration (OSHA) Code of Federal Regulation (CFR) 1910.1450 Occupational Exposure to Hazardous Chemicals in laboratories states in part**:**

"(f)(1) *The employer shall provide employees with information and training to ensure that they are apprised of the hazards of chemicals present in their work area."*

> *"*(f)(2) *Such information shall be provided at the time of an employee's initial assignment to a work area where hazardous chemicals are present and prior to assignments involving new exposure situations. The frequency of refresher information and training shall be determined by the employer*."

RCEC must provide First Aid Kits and Chemical Spill kits in areas where reagents and caustics are in use. ESRB also found four examples where RCEC management must provide additional Training and reinforce prudent safety practices. In the [redacted], a technician was observed not wearing safety glasses in an environment where reagents and caustics are present. On the counter space of the [redacted], burns and counter stains indicate that [redacted] hygiene and safety practices must be improved. The counterspace of the [redacted] was covered with boxes and reagents while not in use. The [redacted] in the [redacted] was missing key safety and emergency response equipment, including a First Aid Kit and Chemical Spill kit.

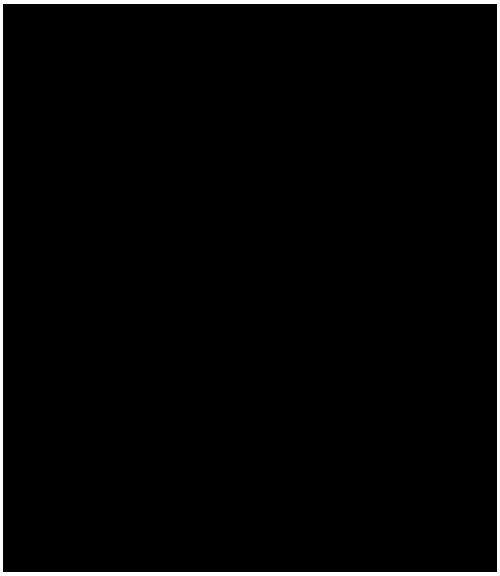

Figure 20: Poor [redacted] Hygiene is exhibited by counter stains, and oxidation.

Figure 21: Clutter in [redacted] space.

Finding 6: The site-specific [redacted] is missing some critical information for contractors and visitors.

GO 167-B Appendix D, 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. 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."*

ESRB reviewed RCEC's [redacted] and identified several deficiencies. The video fails to indicate the importance or location of windsocks in case of toxic air emissions, does not identify the location of Contractor Laydown Areas, does not outline requirements for working at heights including fall protection and rigging, and does not include coordination between RCEC and contractors for the use of Ground Fault Circuit Interrupts (GFCI) on tools and extension cords that outside contractors bring into RCEC. RCEC must revise its [redacted] to address the identified deficiencies, including information on windsocks, laydown areas, work at heights, and GFCI coordination.

Finding 7: RCEC has implemented temporary solutions to equipment issues that are unacceptable.

GO 167-B Appendix D, MS 3: Maintenance Management and Leadership states:

> *"Maintenance managers establish high standards of performance and align the maintenance organization to effectively implement and control maintenance activities."*

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

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

GO 167-B, Appendix E, OS 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."*

ESRB observed three temporary solutions being left in place to resolve or repair equipment issues. The issues identified must be addressed and repaired with appropriate Original Equipment Manufacturer (OEM),or equivalent, parts and more permanent and robust solutions.

1. In an [redacted], a Panel was labeled with duct tape. Panel labels must be replaced or repaired with permanent solutions to clearly identify the panel. Temporary panels can prove to be unreliable and result in improper identification of equipment.

Figure 22: [redacted] Panel labeled with Duct Tape.

2. [redacted] had plastic bags wrapped around the [redacted] as a temporary solution. The issue should be resolved with a more permanent solution and the plastic bags should be removed.

Figure 23: Plastic Bags on [redacted] outside of the [redacted].

3. On the [redacted], a [redacted] is being left in place supporting what appears to be a dynamic structural member. These types of tools (a hand operated [redacted]) are an unacceptable replacement for OEM dynamic supports.

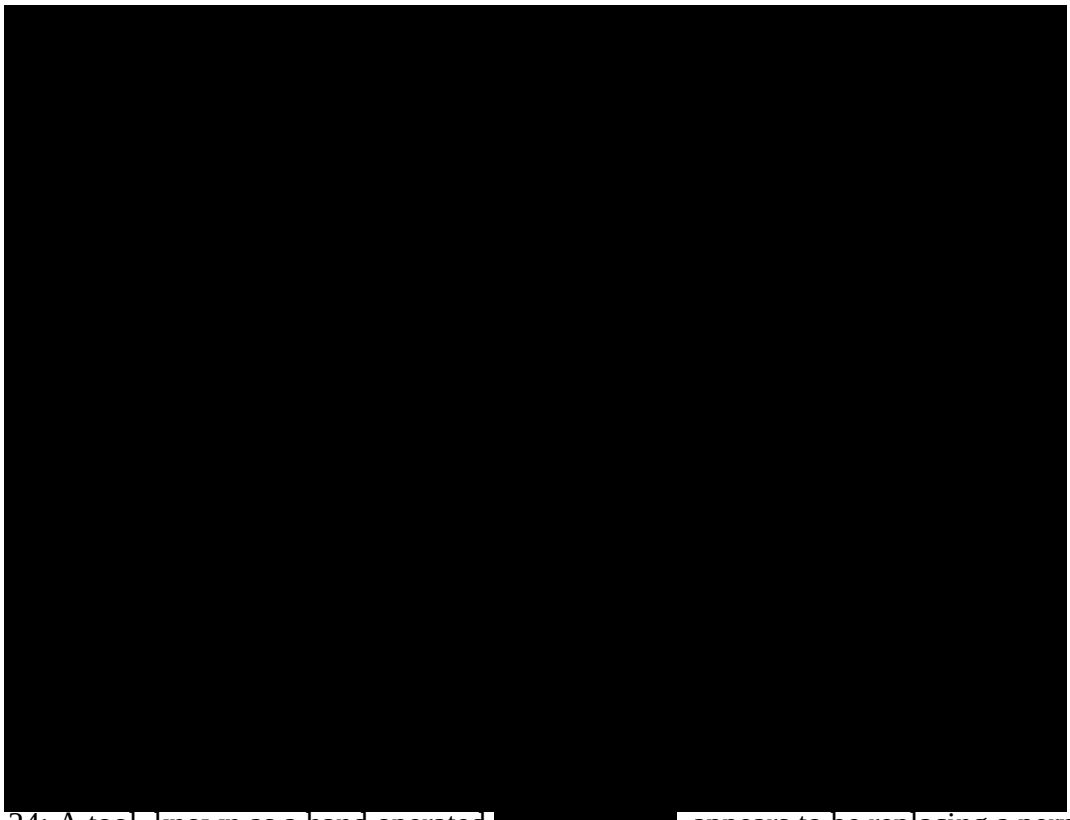

Figure 24: A tool, known as a hand operated [redacted], appears to be replacing a permanent dynamic support.

Finding 8: RCEC staff need to address equipment alarms in a more proactive and timely manner.

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.*
>
> *Among other things, the GAO creates, maintains, and implements routine inspections by:*
>
> *A. Identifying systems and components critical to system operation (such as those identified in the guidelines to Standard 28).*
> *B. Establishing procedures for routine inspections that define critical parameters of these systems, describe how those parameters are monitored, and delineate what action is taken when parameters meet alert or action levels.*
> *C. Training personnel to conduct routine inspections.*
> *D. Monitoring routine inspections.*
>
> **Guidelines for Standard 13: Routine Inspections** states in part:
> *"A. In the case of data monitored automatically, plant control systems act to warn personnel via the alarms or other appropriate notices evident to personnel. Personnel take appropriate action in response to alarms or notices. Data is filed in accordance with plant procedures."*

ESRB noted eight pieces of equipment with active operational alarms. ESRB also identified alarm panels and annunciators with system alarms going unnoticed and uncorrected. RCEC must establish a precedence for acknowledging, addressing, and clearing alarms promptly.

1. The [redacted] displayed a blue light indicating service is needed.

Figure 25: [redacted] service light.

2. [redacted] trouble alert: initial alarm dated [redacted]; ESRB inspected RCEC on August 26.

Figure 26: Active Alerts in [redacted].

3. [redacted] dated [redacted] at 9:00 AM. ESRB inspected RCEC on August 26.

Figure 27: [redacted] trouble alert in [redacted].

4. The [redacted] and [redacted] alarms must be acknowledged or reset after starting. RCEC indicated the [redacted] and [redacted] alarms are activated after a standard operations procedure. The procedure must be updated to clear or acknowledge active faults as appropriate.

Figure 28: Active alarms.

5. On the field panels "[redacted]" and "[redacted]" warning lights and [redacted] are being ignored:

Figure 29: [redacted] lights are illuminated and need to be addressed.

6. [redacted] indicator is going unanswered ([redacted] indication light). Indicators must be addressed and cleared in a timely manner.

Figure 30: Operational indicators must be addressed.

7. The main panel for the [redacted] has an active alarm. Active alarms must be acknowledged and addressed.

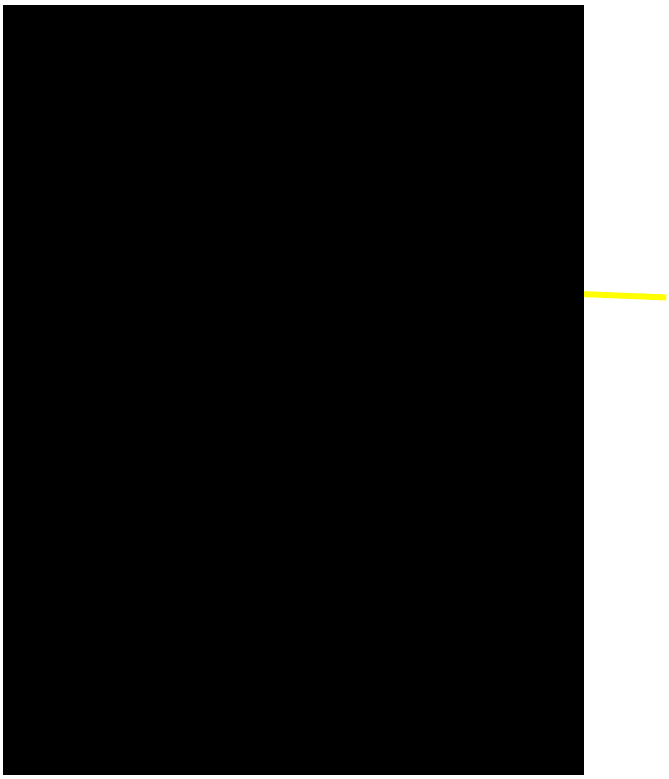

Figure 31: Active Alarm

Finding 9: RCEC has various hazards in the production area walkways.

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."*

Cal/OSHA §3272. Aisles, Walkways, and Crawlways states in part:

> *"(c) Permanent aisles, ladders, stairways, and walkways shall be kept reasonably clear and in good repair. Where, due to lack of proper definition, such aisles or walkways become hazardous, they shall be clearly defined by painted lines, curbing, or other method of marking."*
> *(d) Whenever aisles, walkways, or crawlways become slippery, high-friction surfaces, cleats, coverings, or other equivalent protection against slipping will be required.*

OSHA, 1910.22(a)(2) states:

> *"The floor of each workroom is maintained in a clean and, to the extent feasible, in a dry condition. When wet processes are used, drainage must be maintained and, to the extent feasible, dry standing places, such as false floors, platforms, and mats must be provided."*

Aisles in the [redacted] and platform elevation changes around RCEC must be made compliant with regulations. The [redacted] area platforms and [redacted] were covered with water and mats should be provided. Changes in elevation and curbs around RCEC need to be painted or highlighted in keeping with safety standards. Overhead obstacles need to be removed.

1. The access aisle along the [redacted] is missing curb marking.

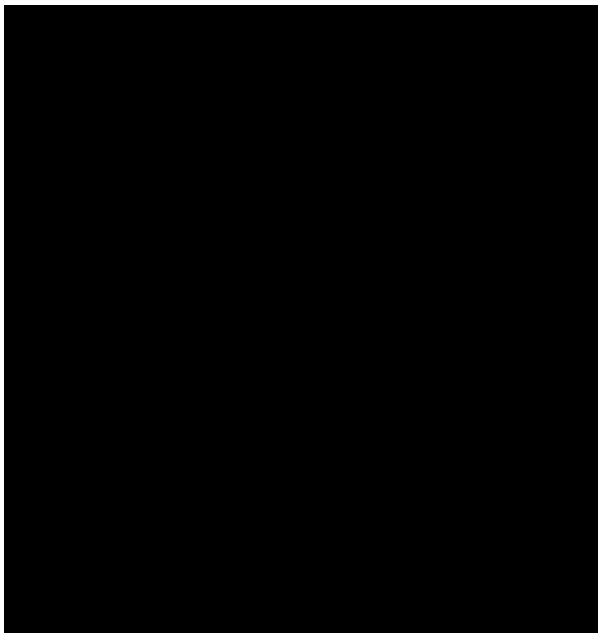

Figure 32: [redacted] Unmarked Curbs.

2. Changes in elevation, such as curbs and platforms, need to be painted.

Figure 33: Curb near entrance to [redacted].

3. An abandoned hose reel is creating a protruding hazard along a walkway and must be removed.

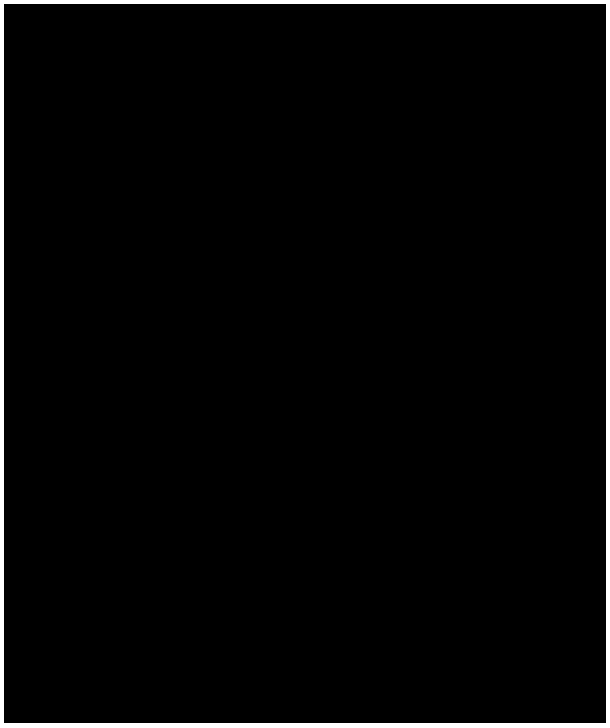

Figure 34: Fire hose reel in walkway.

4. A service hose in the [redacted] walkway is a tripping hazard.

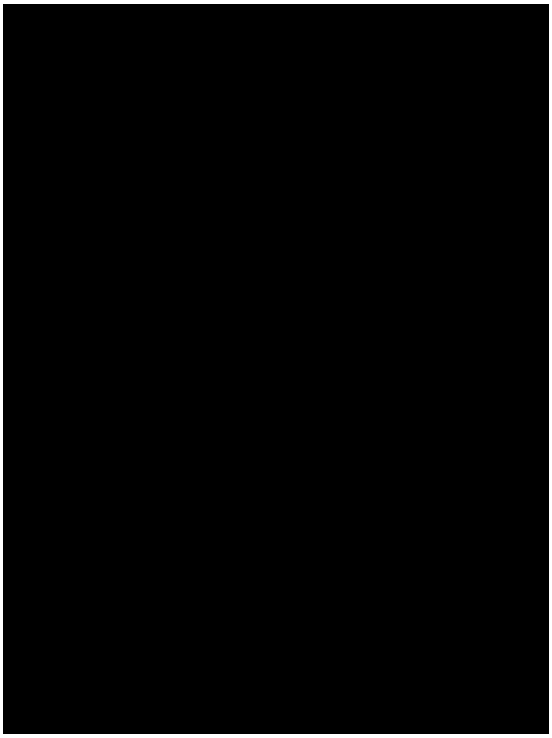

Figure 35: Hose in the [redacted] walkway.

5. In the [redacted] area, a chain hanging and an instrument display cover are sticking out into the walkway creating a head strike hazard. No photos were taken in the [redacted] area in compliance with [redacted].

Finding 10: Various equipment had active leaks that need to be addressed.

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

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

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

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

GO 167-B, Appendix D, MS 13: Equipment Performance and Materiel Condition states:

> *"Equipment performance and materiel condition support reliable plant operation. This is achieved using a strategy that includes methods to anticipate, prevent, identify, and promptly resolve equipment performance problems and degradation."*

GO 167-B, Appendix E, OS 9: Engineering and Technical Support states:

> *"Engineering activities are conducted such that equipment performance supports reliable plant operation. Engineering provides the technical information necessary for the plant to be operated and maintained within the operating parameters defined by plant design. Engineering provides support, when needed, to operations and maintenance groups to resolve operations and maintenance problems."*
>
> **Guideline for Standard 9: Engineering and Technical Support s**tates in part**:**
>
> *"N. Engineering and Technical Engineering programs, such as those for monitoring flow-accelerated corrosion, in-service testing and inspections, and leak rate testing, are clearly defined and effectively implemented."*

ESRB discovered numerous instances of equipment exhibiting signs of leakage at RCEC. To ensure optimal performance and maintain a safe working environment, RCEC must conduct thorough routine inspections to identify abnormal equipment conditions and must promptly address all leakage issues that are discovered. The following are example findings that RCEC must address:

1. [redacted] valve with identification tag [redacted] is leaking water.

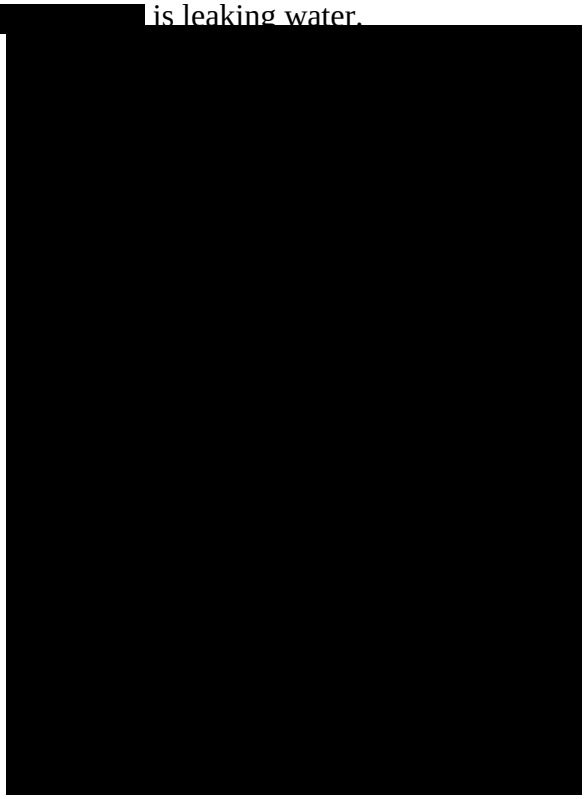

Figure 36: [redacted] valve [redacted] is leaking water.

2. [redacted] valve with identification tag [redacted] is leaking water.

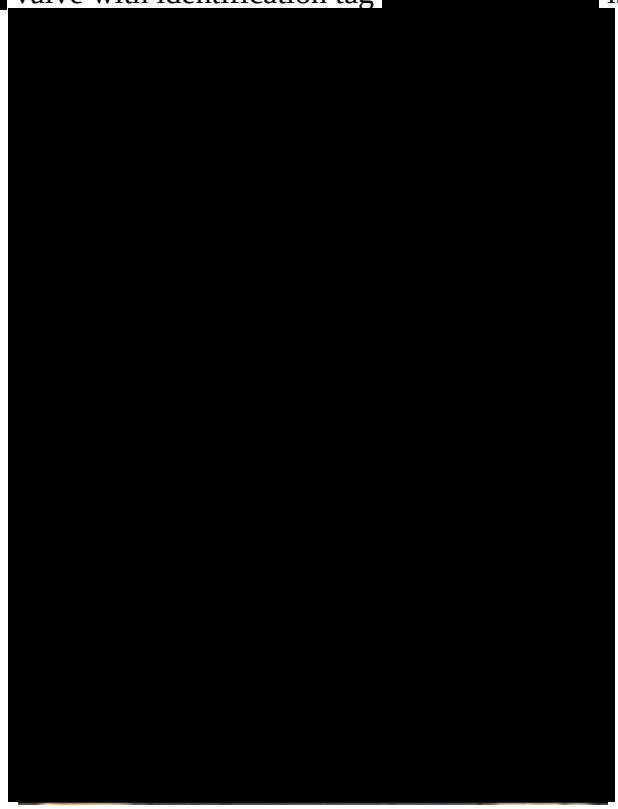

Figure 37: [redacted] valve [redacted] is leaking water.

3. [redacted] leaking water.

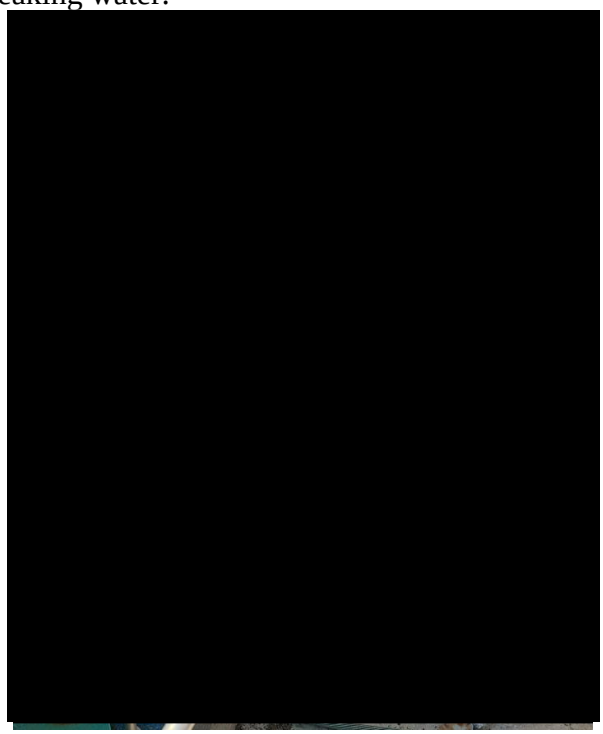

Figure 38: [redacted] leaking water

4. [redacted] drain next to the [redacted] drain is leaking.

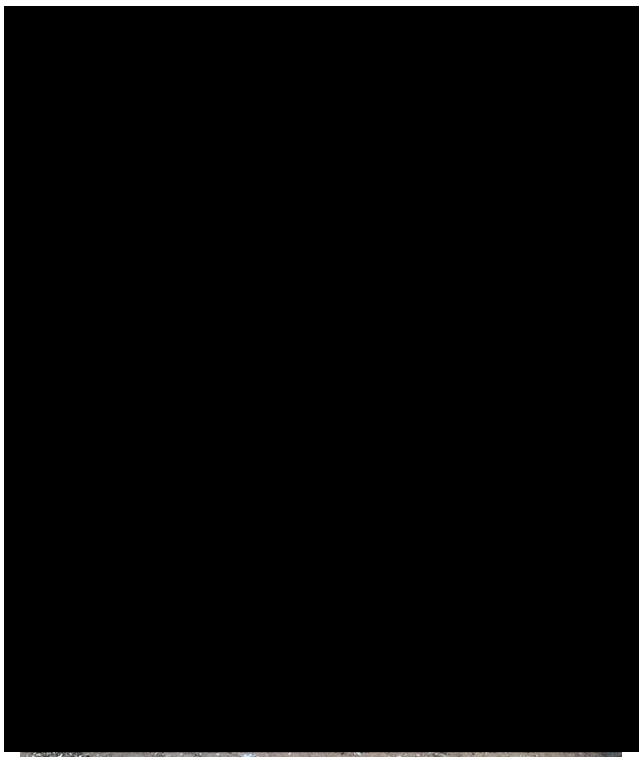

Figure 39: Leaking [redacted] drain.

5. The [redacted] is leaking.

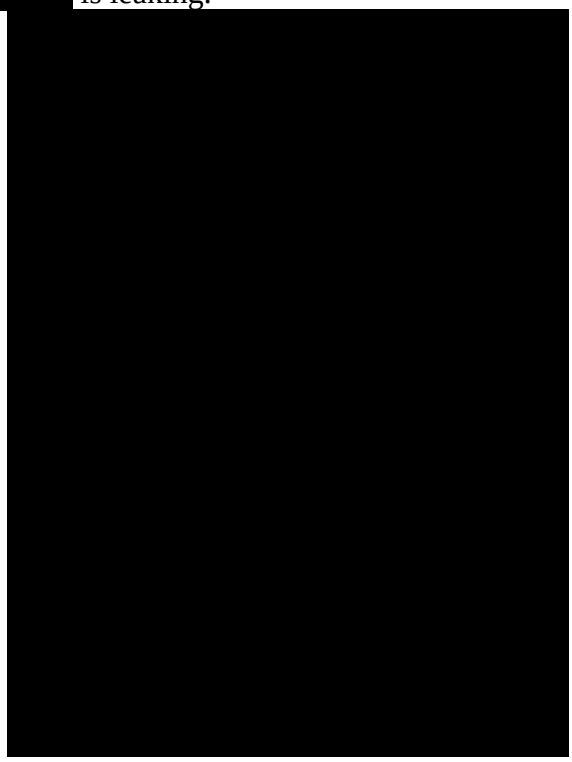

Figure 40: [redacted] leak.

6. The [redacted] system is leaking water.

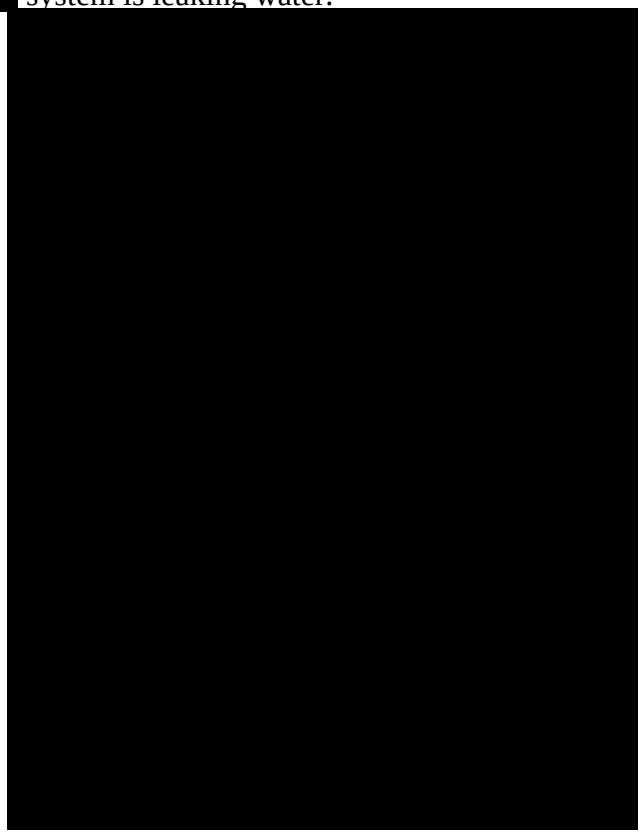

Figure 41: Leaking [redacted] system.

7. The [redacted] is leaking water from the [redacted].

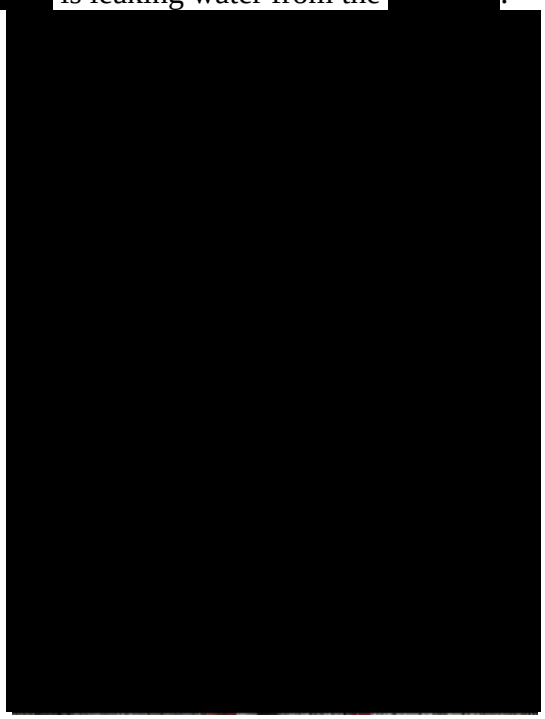

Figure 42: [redacted] is leaking water.

8. The [redacted] building is experiencing a leak at the base. The exact source of the leak could not be determined during the inspection. The prolonged leak has resulted in algal growth.

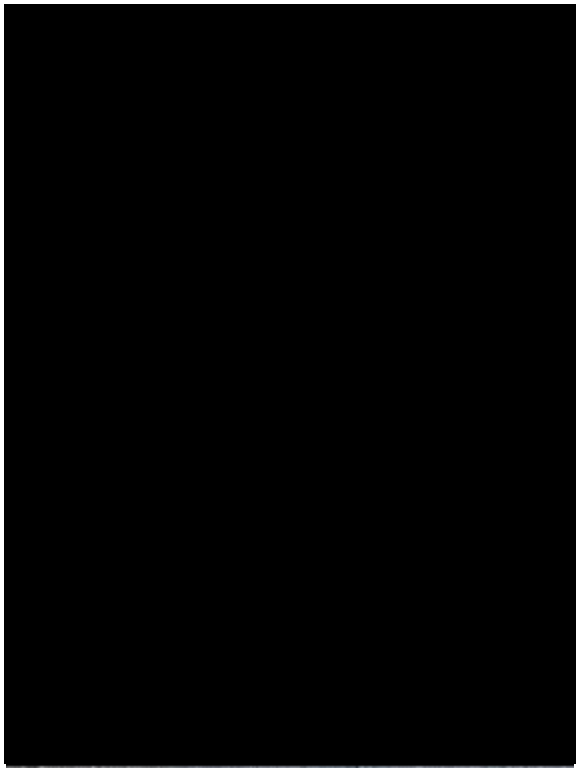

Figure 43: [redacted] building leaking water.

9. A liquid discharge was observed underneath the [redacted].

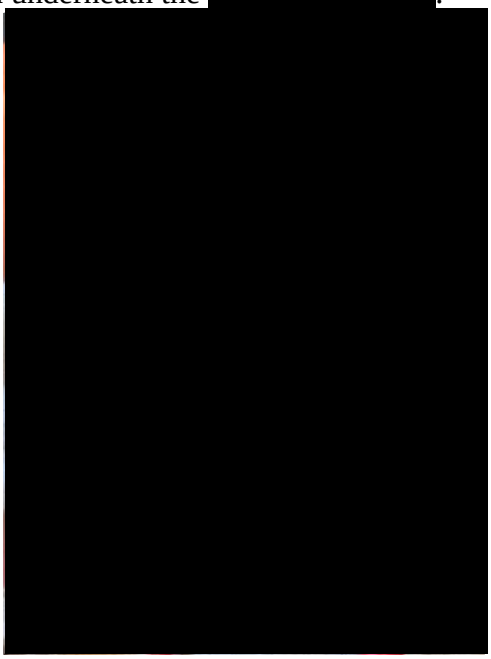

Figure 44: Liquid discharge under the [redacted].

10. Standing water on [redacted] needs to be corrected. The standing water has resulted in atmospheric corrosion. The issue must be mitigated to prevent accelerated degradation.

Figure 45: [redacted].

11. Standing water under operating equipment needs to be minimized and to prevent hazards to RCEC staff.

Figure 46: Standing water at RCEC.

12. Leaks were identified at the base of the [redacted]. If large leaks are not promptly resolved, they have the potential to degrade the integrity of the foundation.

Figure 47: [redacted] Leaks.

13. [redacted] is not draining properly and allowed to accumulate on the ground. The temporary measure of a wood board is in place is not sufficient. The issue must be addressed with an adequate permanent solution.

Figure 48: [redacted] drain overflow

Finding 11: RCEC corrosion control efforts are insufficient.

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

> *"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 Continuing Improvement states in part:

> *"The GAO values and fosters an environment of continuous improvement and timely and effective problem resolution."*
>
> **Guidelines for Standard 4: Problem Resolution and Continuing Improvement** states in part:
> *"A. Self-Assessment*
> *Self-assessment activities are used to compare actual performance to management's expectations, and to identify and correct areas needing improvement. While self-assessments, by definition, are driven from within, they may be used to measure internal performance to external criteria, such as CAISO, EPA or OSHA. Self-assessment is both a discreet activity and a continuous process that may include such activities as:*
>
> 8. *Operating Experience*
>   *Management processes exist to capture, evaluate, and initiate, required actions to incorporate lessons learned from other departments, stations or organizations (e.g., through a problem reporting/corrective action process, "best practices" etc.)."*

RCEC needs to address corrosion on numerous pieces of equipment. Although corrosion in some instances does not directly affect the equipment's ability to operate, it does have an adverse effect on RCEC personnel mindset. Corrosion contributes to a perception of complacency at RCEC and station maintenance activities are to be minimalized. This is evident by the numerous housekeeping issues uncovered during this audit. Painted surfaces and corrosion control not only contributes to station efficiency but also increases morale. In addition to morale, corrosion must be mitigated to ensure safe and reliable operation of RCEC.

1. Corrosion on the [redacted] box is not being remedied.

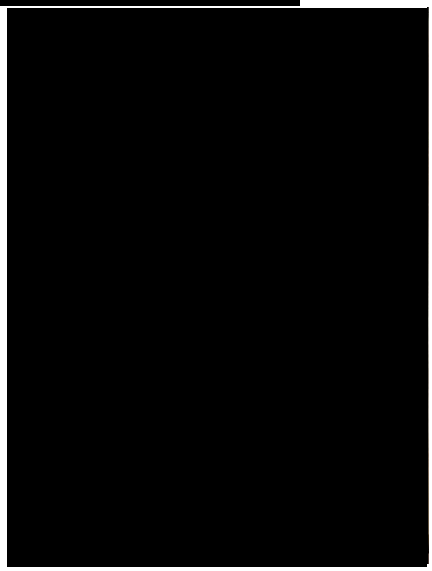

Figure 49: Corrosion on box

2. [redacted] Corrosion. The foundation of the [redacted] was extreme. RCEC provided ESRB with plans to replace the equipment.

Figure 50: Corroded [redacted]

3. Corrosion around the [redacted] must be addressed.

Figure 51: [redacted] corrosion.

4. [redacted] in the [redacted] are rusting and providing inadequate service and safety coverage.

Figure 52: [redacted] corrosion.

5. Corrosion on equipment valves must be addressed. Corrosion on touch points pose a safety concern and must be addressed.

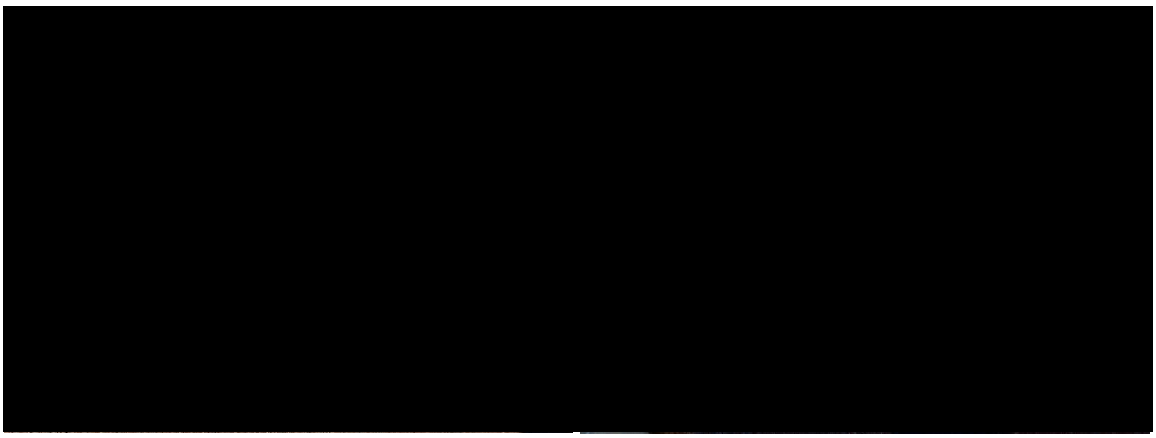

Figure 53: Valve handle extreme corrosion.

6. Corrosion on buildings and structures needs to be addressed.

Figure 54: Building corrosion.

7. The [redacted] tank has excessive corrosion, likely due to spills and releases over time. The cause of the issue must be identified and resolved, and the corrosion must be addressed.

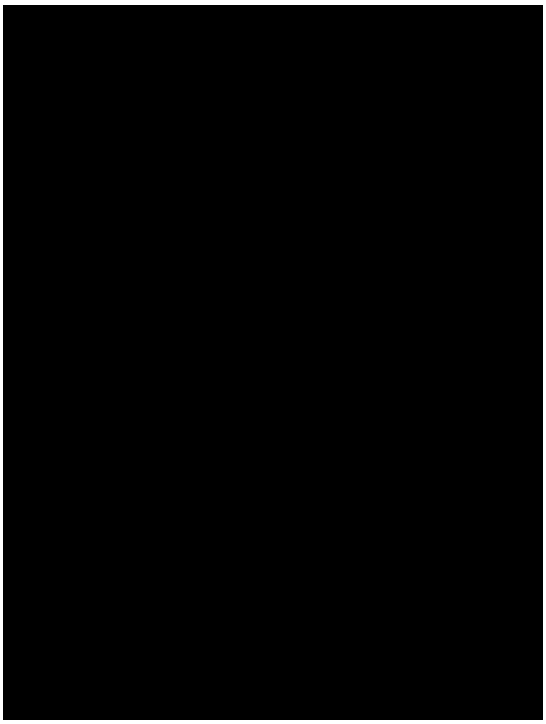

Figure 55: [redacted] Tank corrosion.

8. The [redacted] in front of the [redacted] need to be refreshed. Clearly defined [redacted] in red paint is critical for quick identification of such equipment.

Figure 56: [redacted] faded paint.

Finding 12: Maintenance activities for damaged peripheral equipment must be identified and resolved.

GO 167-B Appendix D, MS 3: Maintenance Management and Leadership states in part:

"Maintenance managers establish high standards of performance and align the maintenance organization to effectively implement and control maintenance activities."

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. Among other things, the GAO creates, maintains, and implements routine inspections by:

A. Identifying systems and components critical to system operation (such as those identified in the guidelines to Standard 28)."

ESRB noted 18 examples where RCEC is failing to provide appropriate and timely maintenance. This can be attributed to incomplete or the lack of routine inspections.

RCEC management must improve routine inspections in the [redacted] to discover and provide proper and more timely maintenance practices.

1. A ground connector on the [redacted] area was not connected to ground. An effective grounding system is critical to safety and to ensure RCEC's grounding system effectiveness, ground connections must be maintained as designed.

Figure 57: Detached and damaged Ground Connectors.

2. Missing [redacted] box covers were noted. [redacted] boxes without covers leaves the contents vulnerable to environmental conditions.

Figure 58: Missing [redacted] covers were noted.

3. [redacted] containing instruments and equipment are damaged leaving their contents vulnerable to environmental conditions. The [redacted] protective covers and weather seal and need to be maintained.

Figure 59: [redacted] requiring maintenance.

4. [redacted] had worn weather stripping. Worn weather stripping leaves the [redacted] susceptible to atmospheric conditions, including heat, cold and precipitation.

Figure 60: [redacted] Weather Stripping.

5. [redacted] are missing connectors such as U-bolts, clips and blocks. [redacted] must be supported or secured to prevent unintended stress, loads, and movement from being imparted to the equipment.

Figure 61: (Left) Missing U-Bolt [redacted] (Right) Missing fastener.

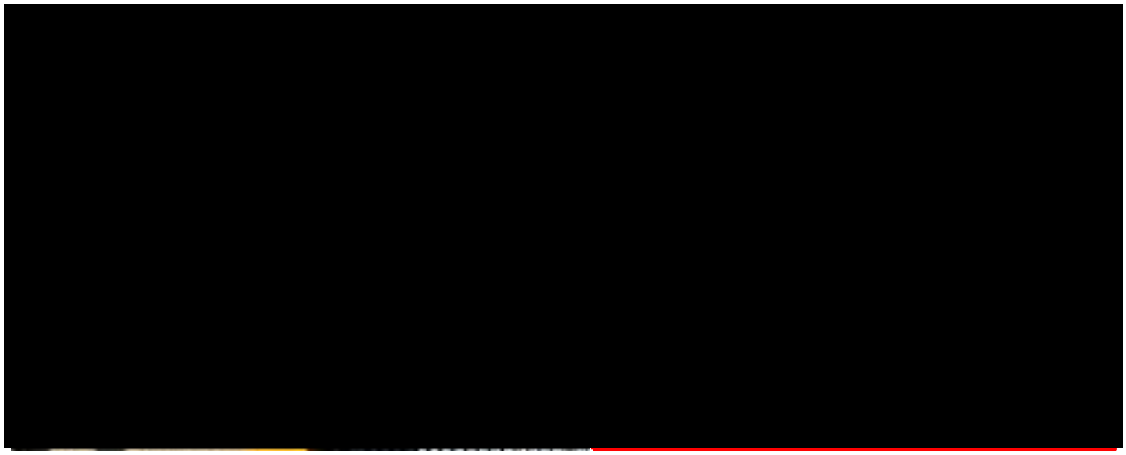

Figure 62: Deteriorating [redacted].

Figure 63: Missing [redacted] clip.

6. [redacted] access ports have missing and loose hardware. Hardware must be installed and torqued to design specifications

Figure 64: Loose and missing hardware.

7. Damaged [redacted] boxes atop the [redacted] are not being repaired.

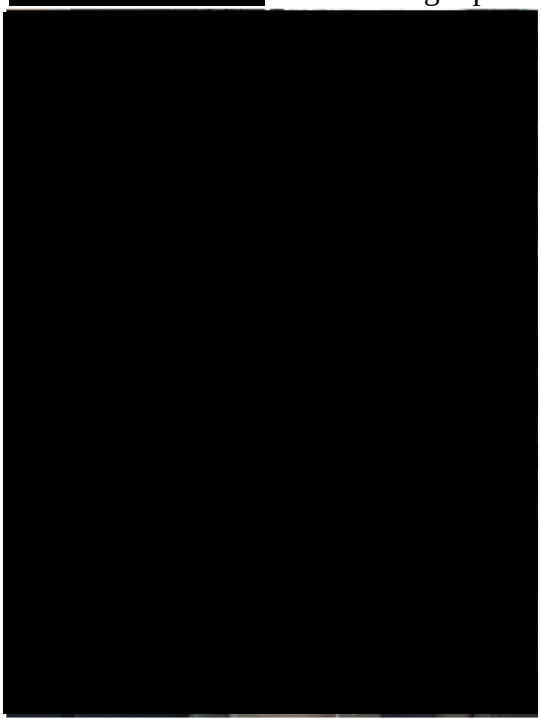

Figure 65: A [redacted] [redacted] box is damaged.

8. Emergency lighting is not working in several locations. Emergency lights must be tested and maintained to ensure exit routes are available in the event of an emergency.

Figure 66: Several non-working exit lights were observed: [redacted] (left) [redacted] (right).

9. Dysfunctional door closers are being left unrepaired. [redacted] are required to protect equipment from environmental harm, debris, and noise abatement.

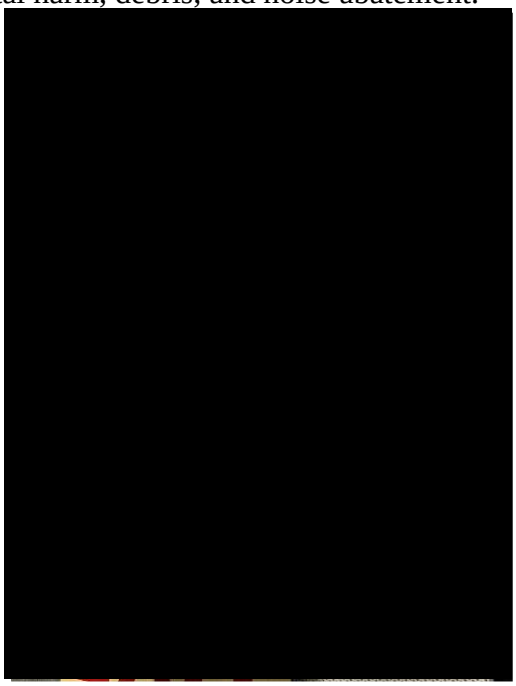

Figure 67: Damaged door closer in [redacted].

10. The door threshold of [redacted] has become dislodged and is no longer secured to the floor. The barrier must be a watertight threshold to keep [redacted] and water from the emergency shower from running out of the room.

Figure 68: (left) The [redacted] door threshold is broken, (right) Adjacent Emergency shower inside the [redacted].

11. Field gauges are not being maintained. Two [redacted] near the [redacted] are broken and requiring maintenance. The issues must be addressed promptly.

Figure 69: (Left) [redacted] requiring calibration (Right) Broken [redacted].

12. Damaged insulation could be seen in many areas of RCEC. Damaged insulation must be promptly reported and repaired. Damaged insulation can lead to inefficiency or corrosion under insulation. Damaged insulation may also demonstrate the need for a HFE to determine the cause and need for intervention. For example, if the cause of the damage appears to be due to foot traffic, then a protective walkway device should be installed.

Figure 70: Examples of Damaged Insulation.

13. Missing bolts were observed in a [redacted]. Hardware must be installed to design specifications.

Figure 71: Missing nuts and bolts.

14. Crumbling concrete was left unrepaired beside a [redacted] area. The loose pieces of concrete can create a tripping hazard.

Figure 72: Crumbling concrete.

15. A main [redacted] is leaking and discharging [redacted] oil from its base.

Figure 73: Leaking [redacted] oil from [redacted] and [redacted] on [redacted].

Figure 74: [redacted] oil leak from a main [redacted].

16. ESRB found a broken valve that needs to be repaired in the [redacted]. Missing valve handles pose safety and operations concerns in case the valve must be manually actuated. No photos were taken in the [redacted] in compliance with [redacted].

Finding 13: RCEC does not properly store equipment and tools when not in use.

GO 167-B Appendix E, OS 9: Engineering and Technical Support states:

"Engineering activities are conducted such that equipment performance supports reliable plant operation. Engineering provides the technical information necessary for the plant to be operated and maintained within the operating parameters defined by plant design. Engineering provides support, when needed, to operations and maintenance groups to resolve operations and maintenance problems."

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

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

Guidelines for Standard 11: Operation Facilities, Tools and Equipment states in part:

"A. Facility size and arrangement promote safe and effective work and training activities. Human factors are considered when designing and arranging equipment. Appropriate facilities are provided for work on equipment involving hazardous materials."

"D. Suitable storage is provided for tools, supplies, and equipment. Necessary tools, jigs, and fixtures are identified and stored to permit ready retrieval."

"F. Rigging equipment and scaffolding are identified, tested, and properly stored."

ESRB found several instances where equipment was improperly stored and when not in use. ESRB found instances where scaffolding that is no longer used is still erected. Scaffolding left erected can lead to improper use and can block access to equipment. There were also several instances where unassembled, unsecured, pieces of scaffolding were stored at heights, creating unsafe conditions.

Additionally, ESRB observed five other examples of equipment and tools being improperly stored. Instances include an improperly stored ladder in the [redacted] area, an improperly stored [redacted] in the [redacted], mixed materials atop a welding cabinet, [redacted] plugs left out in the [redacted], and excess materials beside a [redacted]

When such equipment is left in place, RCEC must initiate a “Human Factors Evaluation” (HFE). A HFE evaluates, “Why materials, equipment or tools are being left out” and “Why it is needed”. RCEC workers typically leave scaffolding, ladders and tools in place to complete repetitive activities. HFE’s determine if such equipment poses a safety risk or if it can possibly cause damage or lead to unsafe behavior. RCEC must perform HFE to determine if there is a need to install permanent platforms where there is equipment such as scaffolding or ladders consistently in place. The temporary fixtures such as ladders and scaffolding must be identified and removed after use is completed.

1. Large scaffolds are being left in place from previous work that are no longer used or needed.

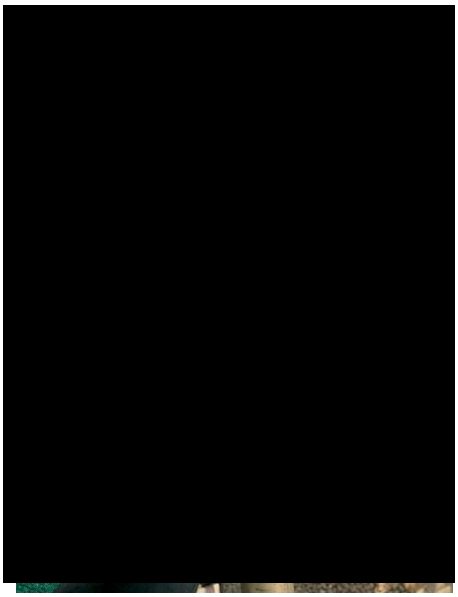

Figure 75: Old scaffolding with warning labels.

2. There is also scaffolding being stored near the guardrails nullifying the guardrail’s intended fall protection. The scaffolding is stored on top of the [redacted] and the [redacted].

Figure 76: Unsecured Scaffolding.

3. Small bits of plywood were being blown around from the scaffold pile close to the [redacted]. These bits of plywood are being scattered by the wind and could be dislodged and become falling objects for workers below.

Figure 77: Plywood stored on top of the [redacted].

4. The unsecured scaffolding is on the edge of a [redacted] towards a main walkway at RCEC. The unsecured scaffolding creates a falling object hazard.

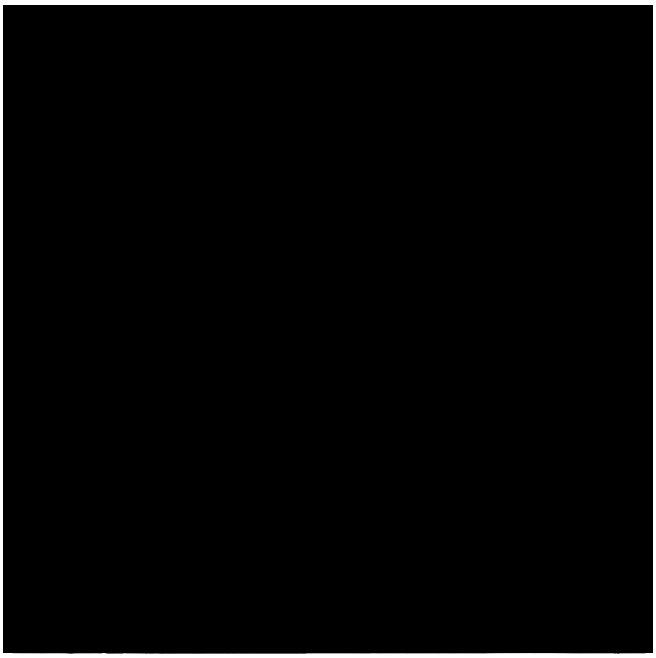

Figure 78: Scaffolding on the Edge of a [redacted]

5. There is an improperly stored ladder in the [redacted] Area.

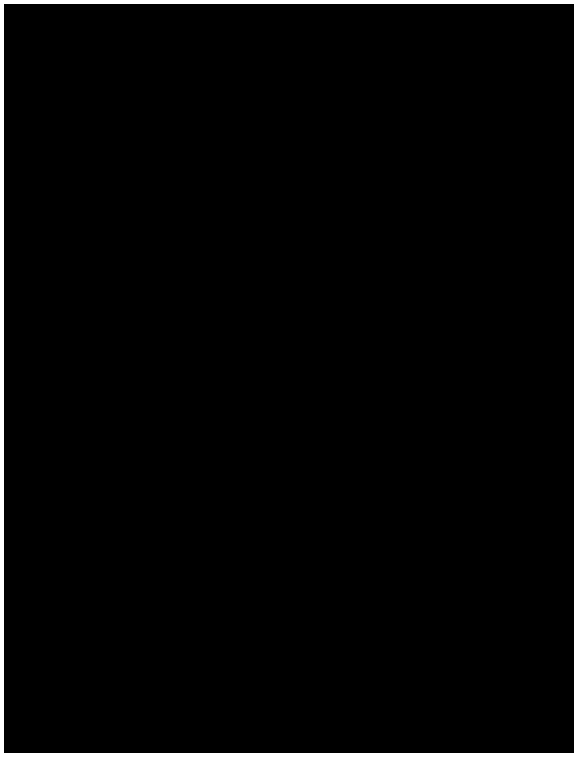

Figure 79: Improperly stored ladder

6. Improperly stored [redacted]. Wires are still connected, and extension cords are left connected and in disarray. The open cabinet door causes a “knee capping” safety hazard.

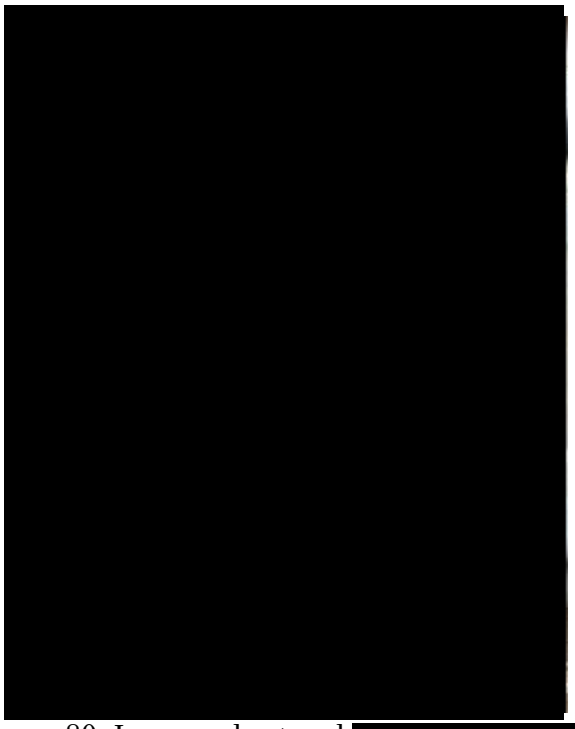

Figure 80: Improperly stored [redacted].

7. Improperly stored band saw blades and other mixed materials are being stored atop a [redacted].

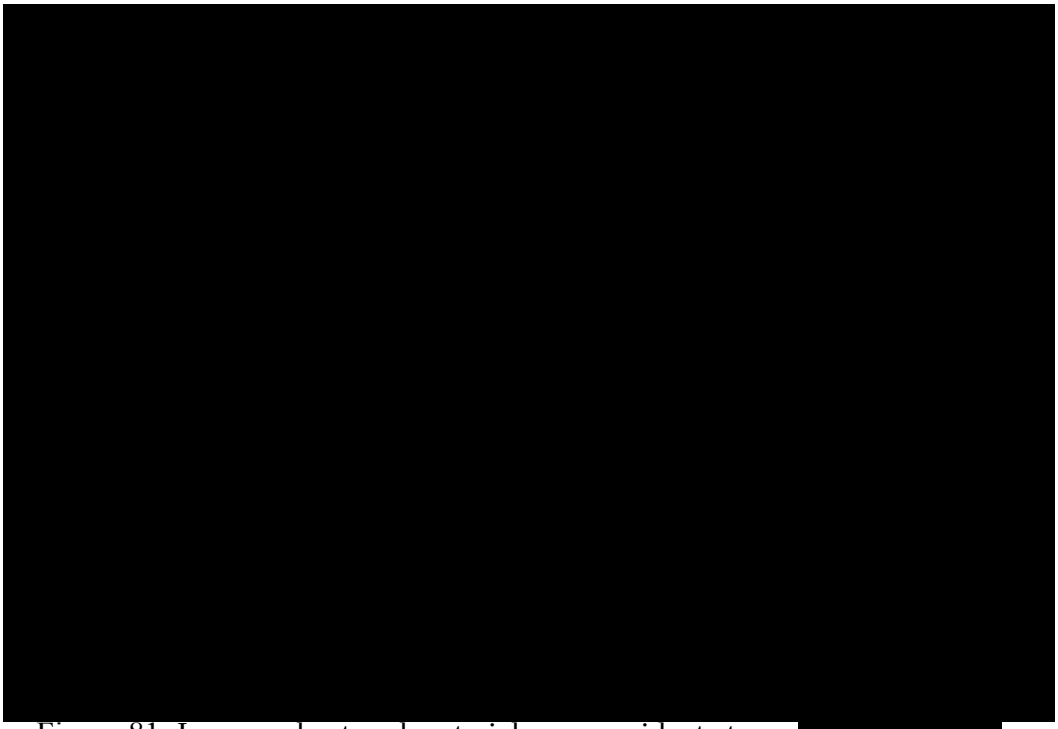

Figure 81: Improperly stored materials were evident atop a [redacted].

8. Improperly stored service devices with signs of degradation or corrosion in the [redacted].

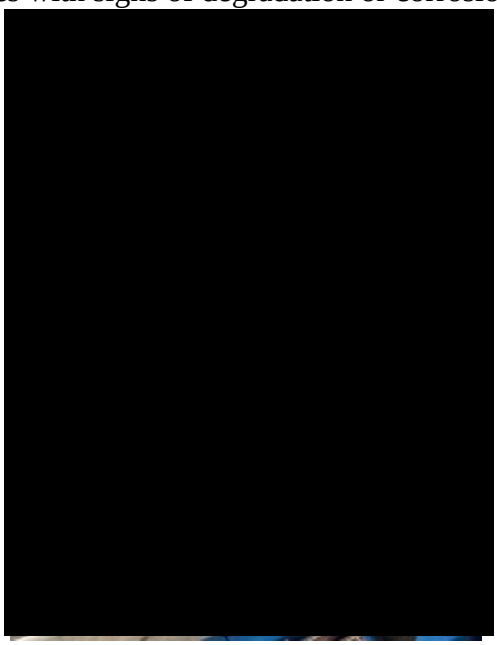

Figure 82: Improperly stored service devices were evident.

9. Improperly stored materials that need to be placed in the excess materials "[redacted]" area.

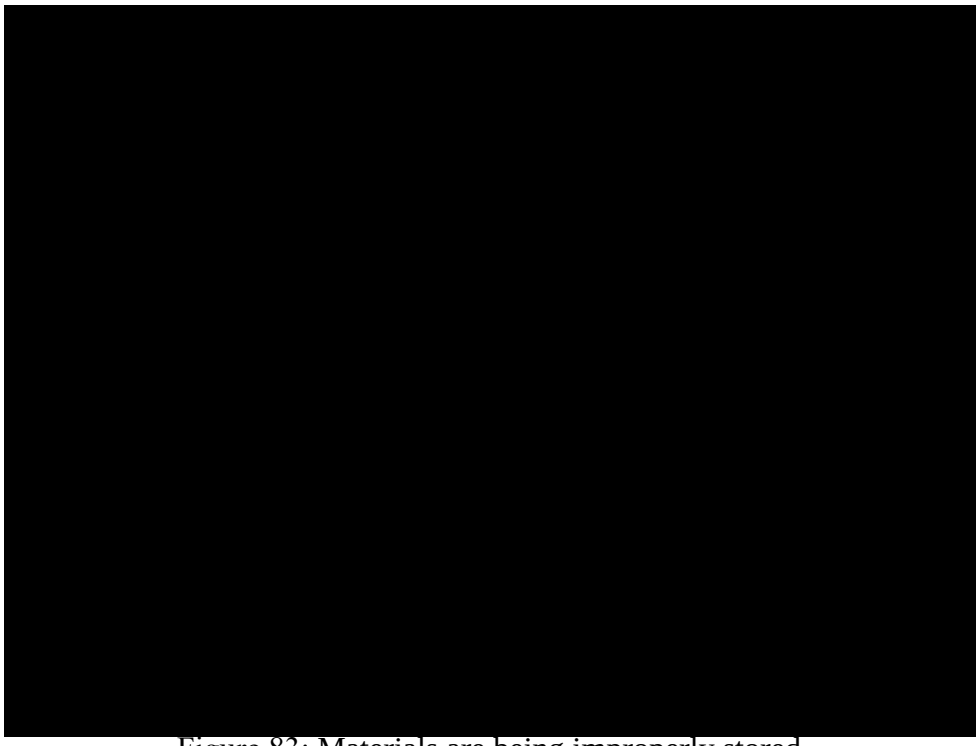

Figure 83: Materials are being improperly stored.

10. Rigging strap was noted in the [redacted] overhead structure.

Figure 84: Rigging strap left in place.

Finding 14: [redacted] near the [redacted] were equipped with a wrench used to open the valve.

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

> *"Facilities and equipment are adequate to effectively support operations activities."*
> **Guidelines for Standard 11: Operation Facilities, Tools and Equipment** states:
> *"Suitable storage is provided for tools, supplies, and equipment. Necessary tools, jigs, and fixtures are identified and stored to permit ready retrieval."*

Hayward Municipal Code Chapter 11, Article 2, Section 11-2.24 states in part:

> *"Fire hydrants are provided for the sole purpose of extinguishing fires and are to be opened and used only by the City of Hayward Water System and City of Hayward Fire Department or such persons as may be officially authorized to do so."*

ESRB noted that [redacted] adjacent to the [redacted] were equipped with wrenches. The presence of these wrenches could facilitate unauthorized access and use of the [redacted]. Unauthorized use of [redacted] can lead to property damage and safety hazards. RCEC must ensure that [redacted] are kept free of attached wrenches until deemed necessary, and all wrenches must be securely stored in a designated location.

Figure 85: [redacted] Left) [redacted] (Right) with a wrench.

Finding 15: A Lockout Tagout lock (LOTO) was haphazardly left in the [redacted] since [redacted].

GO 167-B, Appendix E, OS 14: Clearances states in part:

> *"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."*

CCR, Title 8, § 3314 The Control of Hazardous Energy for the Cleaning, Repairing, Servicing, Setting Up, and Adjusting Operations of Prime Movers, Machinery and Equipment, Including Lockout/Tagout states in part:

> *"(i) Shift or Personnel Changes.*
>
> *Specific hazardous energy control procedures (i.e. lock-out/tag-out) shall be utilized during shift or personnel changes to ensure the continuity of lockout or tagout protection, including, but not necessarily limited to, provision for the orderly transfer of lockout or tagout device protection between off-going and oncoming employees, in order to minimize exposure to hazards from the unexpected energization or start-up of the machine or equipment, or the release of stored energy."*

In the RCEC [redacted], there are [redacted] used for work requiring the control of [redacted] or LOTO. ESRB reviewed the LOTOs currently in place by inspecting the [redacted] and discovered a [redacted] with a LOTO tag indicating it has been in place since [redacted]. The LOTO was no longer active, but the [redacted] was left in place from [redacted] to [redacted] when the ESRB conducted the audit. LOTOs need to be proactively removed when they are no longer active. Since [redacted], RCEC has completed [redacted] and [redacted] reviews providing ample opportunity to identify the obsolete LOTO. Additionally, CCR, Title 8, Section 3314 require special procedure for transfer of LOTOs between shifts and personnel changes. If this LOTO was active since [redacted], the continuous transfer of the LOTO across shifts would have alerted staff to the obsolete LOTO and initiated its removal. RCEC staff removed the LOTO during ESRB's audit after RCEC determined that the LOTO was obsolete.

Finding 16: Pipe Hangers require maintenance and routine inspections.

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 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."*

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

> *"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 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. Among other things, the GAO creates, maintains, and implements routine inspections by:*
>
> A. *Identifying systems and components critical to system operation (such as those identified in the guidelines to Standard 28)."*

ESRB recorded four [redacted] Pipe Hangers lacking proper markings of hot or cold. The lack of markings hinders RCEC's ability to perform visual inspections of the [redacted] to ensure they are within range of the operating parameters. Additionally, multiple [redacted] Pipe Hangers were found to be operating outside of their designated travel ranges, with many exhibiting signs of excessive stress by being bottomed out or topped out.

To address these issues, RCEC must inspect all [redacted] Pipe Hangers and supports to identify and rectify missing or deteriorated markings. All missing cold-hot markers must be corrected to enable personnel to readily identify discrepancies during [redacted] rounds or routine inspections. Additionally, implementing a routine [redacted] and [redacted], along with conducting routine visual inspections of [redacted] Pipe Hangers during [redacted] rounds, can help identify issues and detect potential failures before they occur. RCEC must fix all the [redacted] Pipe Hangers that are currently operating outside of their designated travel ranges or provide ESRB with a detailed plan with a timeline for periodic inspection and maintenance plans.

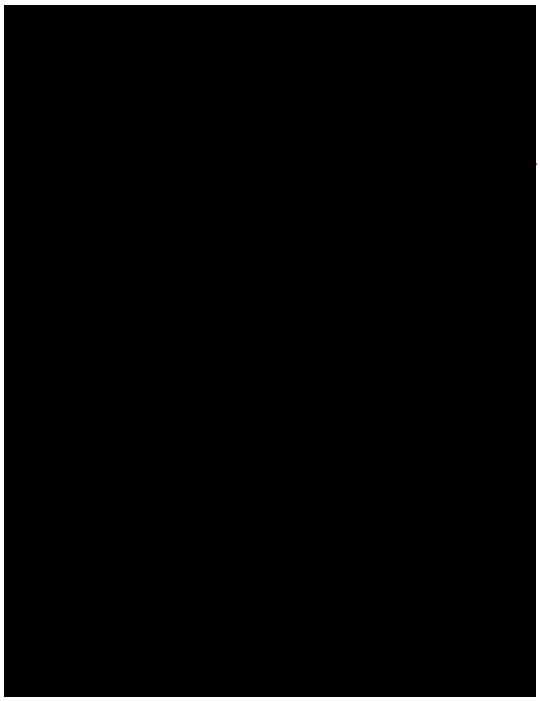

Figure 86: [redacted] pipe hanger [redacted] with missing hot and cold indicators. Adjacent is a [redacted] pipe hanger with damaged marking.

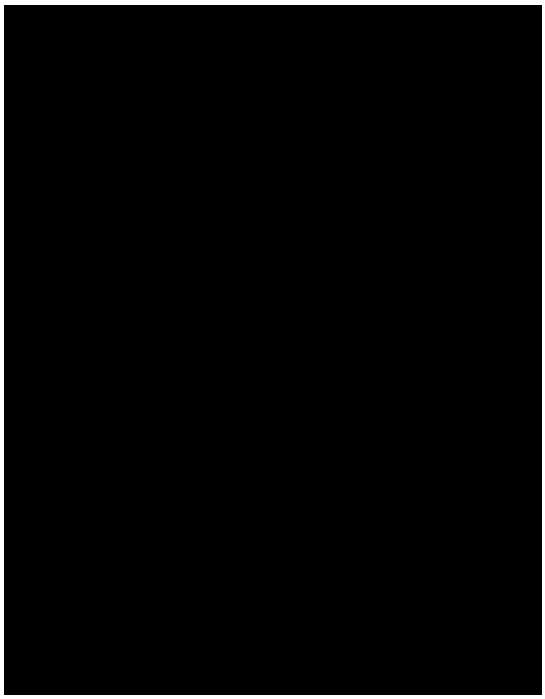

Figure 87: Unmarked [redacted] pipe hanger with missing hot and cold indicators.

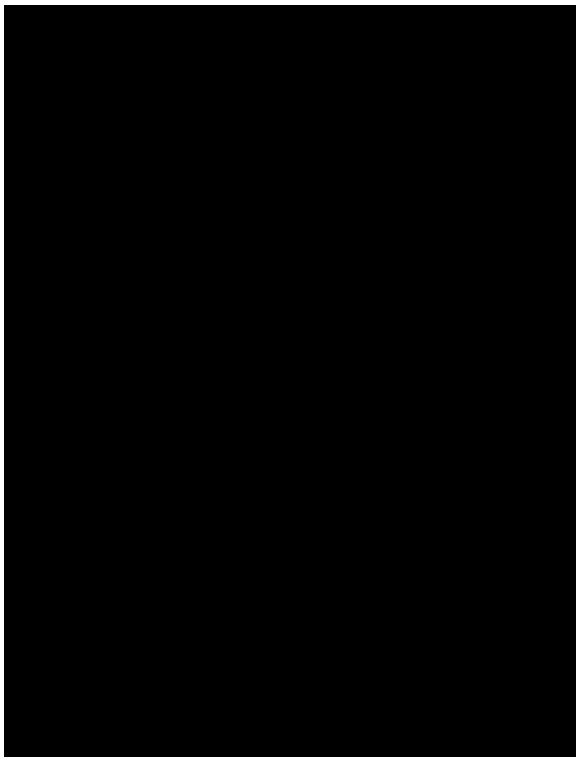

Figure 88: Unmarked and topped out [redacted] pipe hanger.

Finding 17: The condition and use of flammable storage cabinets must be improved.

GO 167-B, Appendix E, OS 10: Environmental Regulatory Requirements states in part:
"Environmental regulatory compliance is paramount in the operation of the generating asset."

NFPA 1 Fire Code Chapter 60 Hazardous Material 60.1.2.23 (d) states:
"Doors shall be well fitted, self-closing, and equipped with a self-latching device."

ESRB found dysfunctional latching mechanisms on two flammable storage cabinets. While the flammable materials storage cabinet was equipped with a self-closing mechanism, the cabinet failed to fully close and latch. To comply with NFPA regulations, all on-site flammable materials cabinets must be equipped with self-closing and self-latching devices. ESRB also noticed flammable material, carboard boxes, being stored atop a flammable storage locker. Such storage or "stacking" is prohibited. Flammable material on top of a flammable storage cabinet can be a source of fuel in the event of a fire. The flammable material must be removed.

The contents inside two flammable storage cabinets are overloaded, exceeding the cabinets capacity. Stacking, especially of aerosols is prohibited. These cabinets must be organized, and the volume of stored materials reduced.

1. Flammable materials storage cabinet without a latching mechanism.

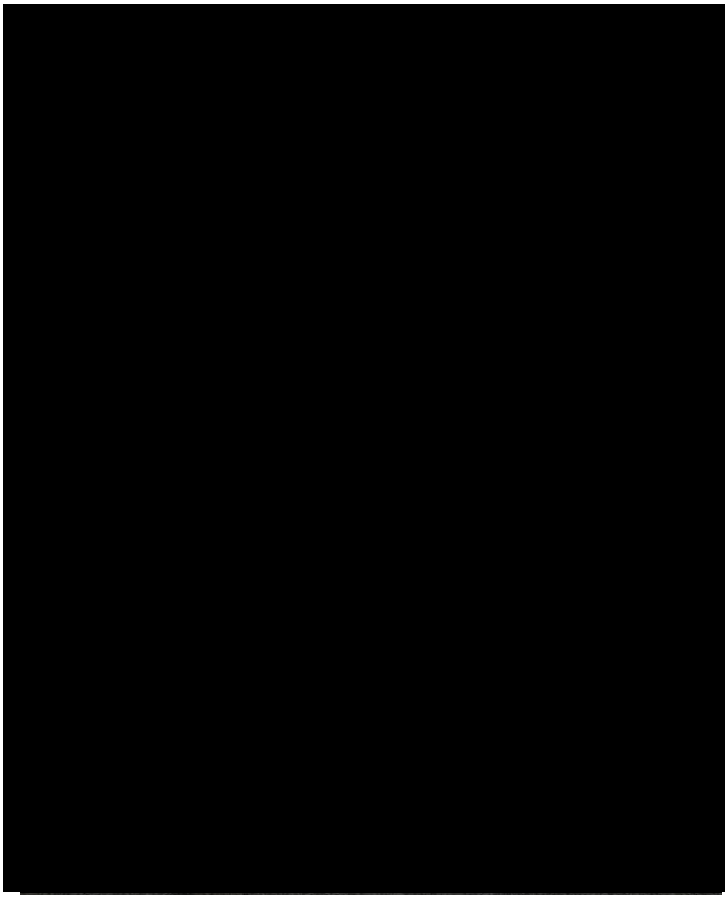

Figure 89: Flammable storage cabinet in the [redacted] area.

2. Stacking or storage atop flammable storage cabinets is prohibited

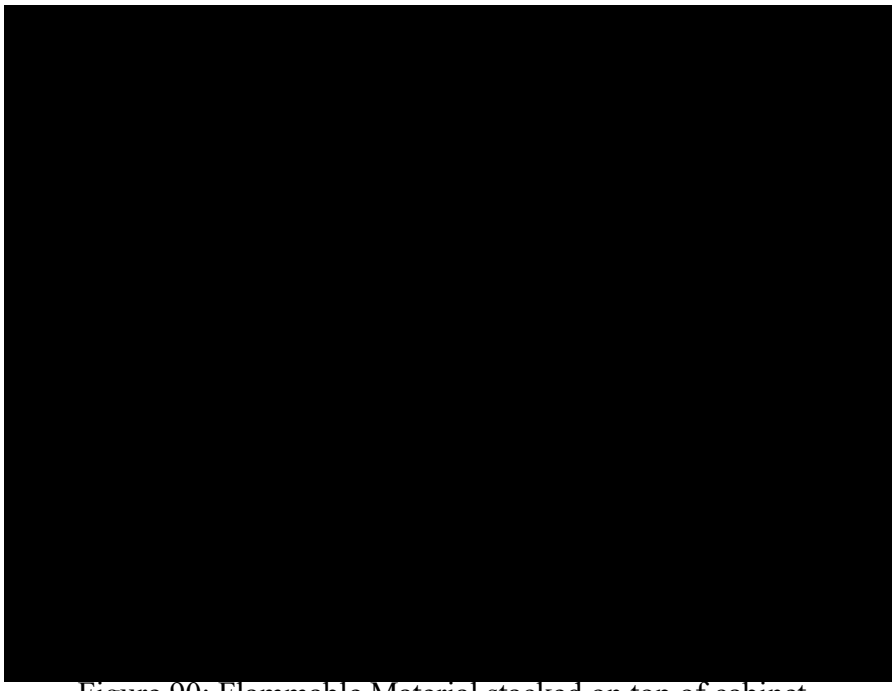

Figure 90: Flammable Material stacked on top of cabinet.

3. This cabinet is overloaded with bottles stacked atop aerosols.

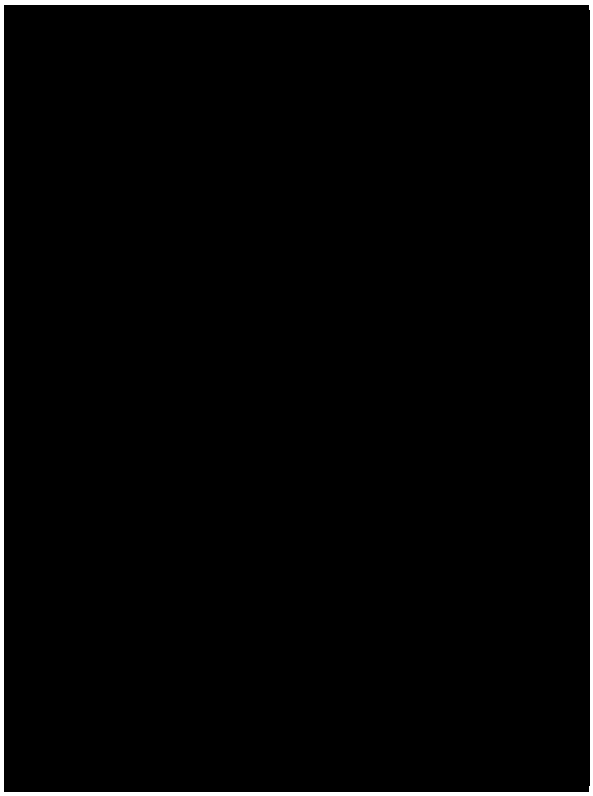

Figure 91: Disorganized flammable storge cabinet.

Finding 18: Empty [redacted] tanks are improperly stored.

GO 167-B, Appendix E, OS 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 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."*

CCR Title 8 § 4650 Storage, Handling, and Use of Cylinders (e) states in part:

> *"Compressed gas cylinders shall be stored or transported in a manner to prevent them from creating a hazard by tipping, falling or rolling."*

ESRB observed red [redacted] with "transit" (nylon fabric) constraints in use. These nylon constraints must be replaced with fireproof constraints. [redacted] pose a serious safety threat, including as projectiles if the nozzles are broken off. Falling [redacted] can also cause serious crushing injuries. [redacted], both full charged and empty, must be secured to prevent them from being knocked over and falling.

There were also empty [redacted] in an unmarked area and a [redacted] completely unsecured. Storage areas for empty tanks must be marked "Empty [redacted]" and all cylinders, even if empty, must be constrained from tipping or falling.

1. Constraints on the red tanks must be replaced with fireproof restraints.

Figure 92: Full [redacted] stored at RCEC.

2. Empty [redacted] are being stored near the [redacted] in an unmarked area.

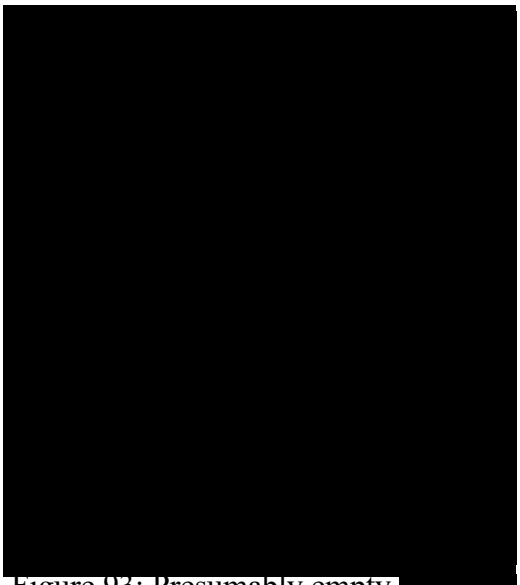

Figure 93: Presumably empty [redacted].

3. Empty [redacted] not securely stored. Empty [redacted] must be properly labeled and restrained.

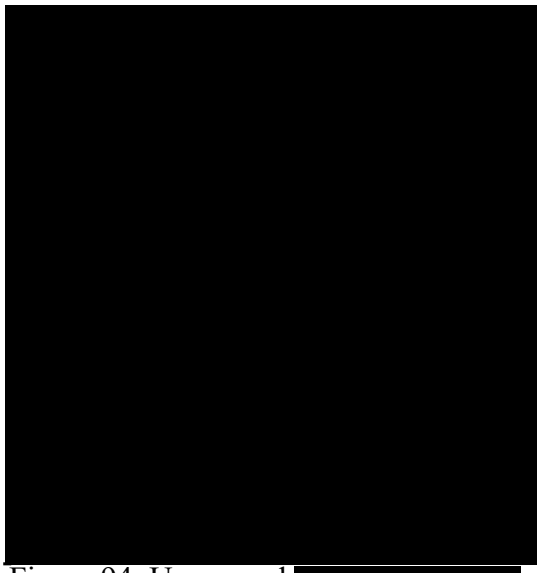

Figure 94: Unsecured [redacted].

Finding 19: SPCC kits need to be included on the site plan and inspected periodically.

GO 167-B, Appendix E, OS 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 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."

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."

CFR 40 § 112.7 General requirements for SPCC Plans states in part:

"As detailed elsewhere in this section, you must also:
Describe in your Plan the physical layout of the facility and include a facility diagram…"

CCR Title 8 § 5192. Hazardous Waste Operations and Emergency Response states in part:

"(q)(11)(B) All equipment to be used in the performance of the clean-up work shall be in serviceable condition and shall have been inspected prior to use."

ESRB noted several examples where SPCC need improvement. A map identifying SPCC kit location was available in the SPCC [redacted] located in the RCEC [redacted], but not the [redacted] copy of the SPCC provided to ESRB. The map identifying locations of the RCEC SPCC kits, must be added to the [redacted] copy of the RCEC SPCC to ensure the location of the kits are known. ESRB identified deficiencies with the inspection and inventory of the SPCC kits. RCEC must improve periodic inspections, maintenance and inventorying to address the issues presented.

1. Upon opening a "sealed" SPCC kit in the [redacted], ESRB found the kit to be incomplete. The SPCC kit was missing containment area [redacted]. Therefore, despite being "sealed" a work order schedule for "Periodic Inspections" must be established to ensure SPCC kits are properly stocked, and the contents are in serviceable condition.

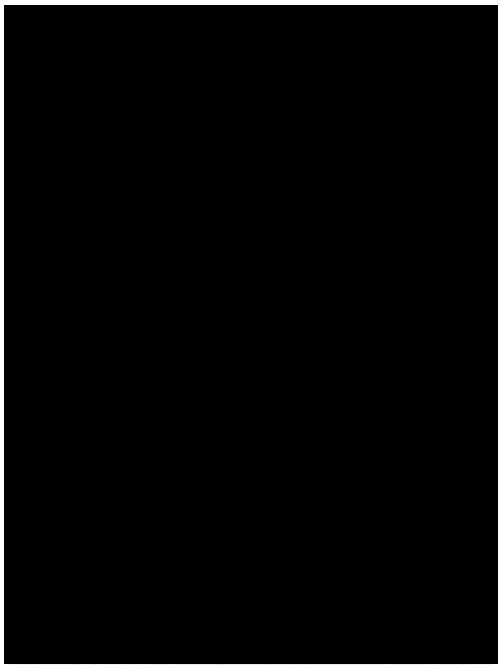

Figure 95: SPCC Oil Spill Kit missing [redacted]

2. A spill neutralizer needs to be added to the SPCC inventory list where batteries are located. Currently, the acid spill neutralizer is only available in the [redacted] area. The acid neutralizer must be distributed to locations where the applicable hazard is present and may be necessary for use.

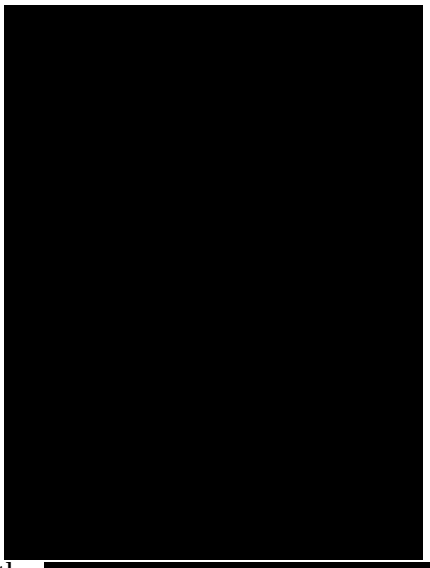

Figure 96: Acid neutralizer in the [redacted] area needs to be distributed.

3. Chemical spill kits with an acid neutralizer must be provided in all chemical handling areas, especially where caustics are used or stored.

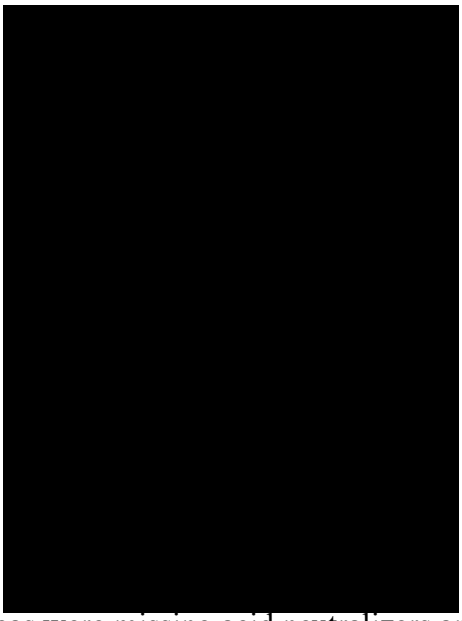

Figure 97: RCEC [redacted] areas were missing acid neutralizers and must be located near PPE.

Finding 20: Liquid dispensing without proper Bonding (grounding) is being performed in the [redacted].

GO 167-B Appendix E, OS 12: Operations Conduct states in part:

> *"To ensure safety, and optimize plant availability, the GAO conducts operations systematically, professionally, and in accordance with approved policies and procedures. The GAO takes responsibility for personnel actions, assigns personnel to tasks for which they are trained, and requires personnel to follow plant and operation procedures and instructions while taking responsibility for safety. Among other things:*
>
> *A. All personnel follow approved policies and procedures. Procedures are current, and include a course of action to be employed when an adopted procedure is found to be deficient."*

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

> *"The GAO values and fosters an environment of continuous improvement and timely and effective problem resolution."*
> **Guideline to Standard 4: Problem Resolution and Continuing Improvement** states in part:
>
> *"A. Self-Assessment*
> *Self-assessment activities are used to compare actual performance to management's expectations, and to identify and correct areas needing improvement. While self-assessments, by definition, are driven from within, they may be used to measure internal performance to external criteria, such as CAISO, EPA or OSHA. Self-assessment is both a discreet activity and a continuous process that may include such activities as:*
> *C. Operating Experience*
> *Management processes exist to capture, evaluate, and initiate, required actions to incorporate lessons learned from other departments, stations or organizations (e.g., through a problem reporting/corrective action process, "best practices," etc.)."*

ESRB found that a liquid dispensing system using [redacted] is being used without proper grounding. Additionally, the use of [redacted] results in the accumulation of hazardous residues on the top of the [redacted] tanks. This defeats secondary containment and contributes to surface and container cross contamination. Current industry best practices use commercially available horizontal drum racks with spigots and secondary containment.

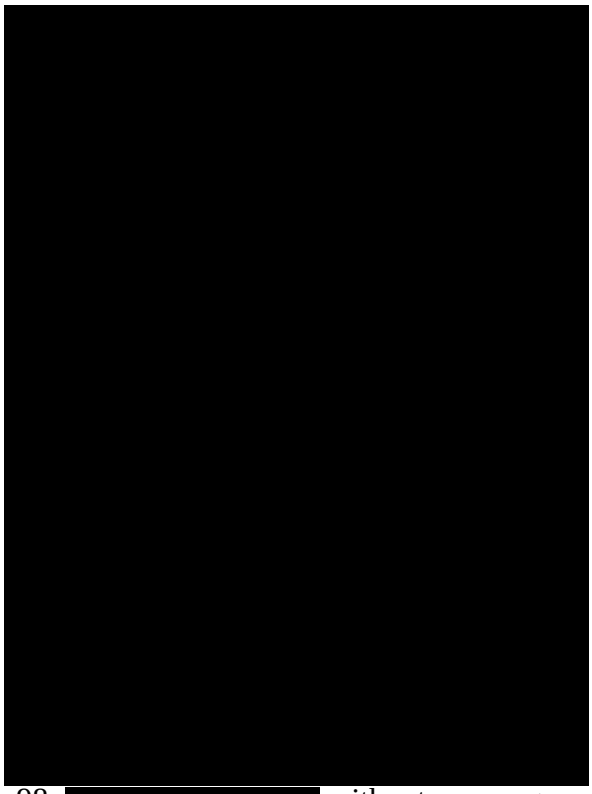

Figure 98: [redacted] without proper grounding.

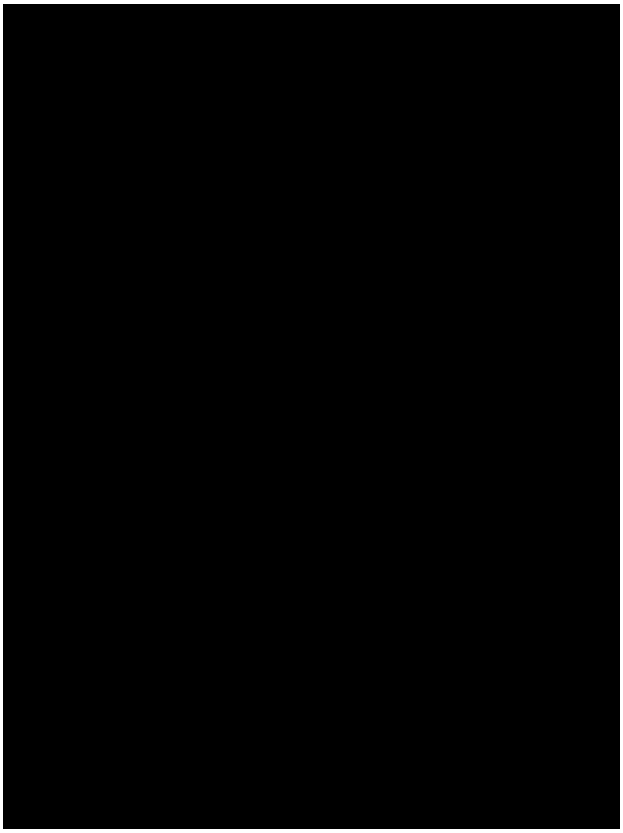

Figure 99: Residue is present from [redacted].

Finding 21: Blue drums and barrels of [redacted] do not have proper hazard identification labels.

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

> *"The protection of life and limb for the work force is paramount. The company's 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."*

CFR 49 SS 173: Marking (Hazardous Materials) states:

> *"Excepted quantities of hazardous materials packaged, marked, and otherwise offered and transported in accordance with this section must be durably and legibly marked with the following marking:*
>
> *(1) The must be replaced by the primary hazard class, or when assigned, the division of each of the hazardous materials contained in the package. The markings must be replaced by the name of the shipper or consignee if not shown elsewhere on the package.*
>
> *(2) The marking must be durable and clearly visible and in the form of a square. The hatching must be of the same color, black or red on white or a suitable contrasting background. The minimum dimensions must not be less than 100 mm (3.9 inches) by 100 mm (3.9 inches) as measured from the outside of the hatching forming the border. Where dimensions are not specified, all features shall be in approximate proportion to those shown. For domestic transportation, packaging marked prior to January 1, 2017, and in conformance with the requirements of this paragraph in effect on December 31, 2014, may continue in service until the end of its useful life."*

ESRB found three blue barrels and multiple Barrels of [redacted] missing required labeling. Labels for barrels must be compliant with hazardous material marking requirements. RCEC must implement and maintain a practice of labeling storage drums.

1. This blue 55-gallon drum was in a [redacted] area lacking proper labeling.

Figure 100: Blue 55-gallon drum lacking proper labeling.

2. Barrels of [redacted] in the [redacted] area do not have labels with authorized person, date or Safety Data Sheet pictographs.

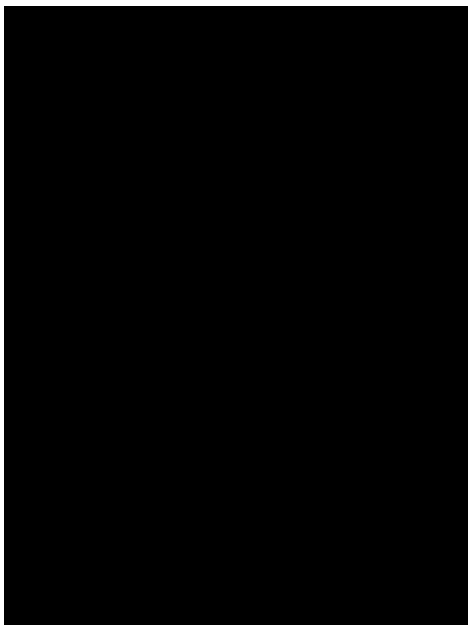

Figure 101: [redacted] lacking proper labeling.

Finding 22: RCEC must improve practices to repair or replace signage.

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

> *"The protection of life and limb for the work force is paramount. The company's 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 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."*
>
> **Guideline for Standard 8 Plant Status and Configuration** states in part:
>
> *"10. Procedures are implemented to control the placement of caution, warning, information and other similar tags on plant equipment and operator aids in the plant."*

GO 167-B Appendix E, OS 9: Engineering and Technical Support states:

> *"Engineering activities are conducted such that equipment performance supports reliable plant operation. Engineering provides the technical information necessary for the plant to be operated and maintained within the operating parameters defined by plant design. Engineering provides support, when needed, to operations and maintenance groups to resolve operations and maintenance problems."*

ESRB found the following sample of signs were found damaged, missing or obstructed. RCEC must establish a standard procedure for sign placement and develop a maintenance schedule to add, repair, or replace caution and warning signs.

1. The speed limit sign near the [redacted] building is blocked by a trash can.

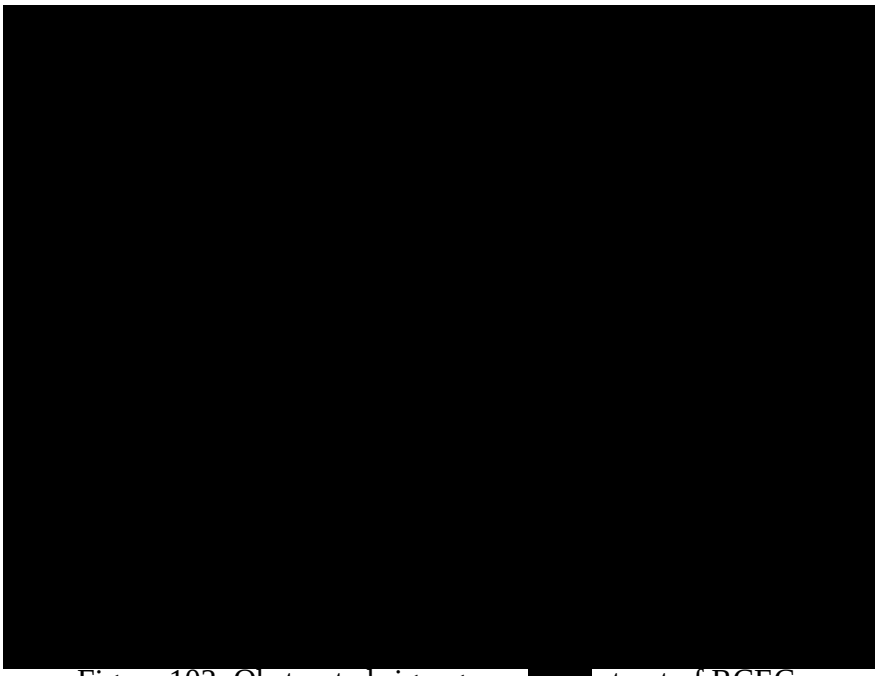

Figure 102: Obstructed signage on [redacted] street of RCEC.

2. [redacted] access doors and [redacted] areas were missing “Danger, High Voltage” signs.

Figure 103: RCEC [redacted] missing danger signage

3. All [redacted] Labels are missing dates. [redacted] labels are required to have the date of the [redacted] study printed on the sticker.

Figure 104: [redacted] sticker missing date.

4. Conflicting [redacted] labels on the same cabinet. The highest incident rating must be posted regardless of the maintenance switch position.

Figure 105: Conflicting [redacted] labels.

5. Fire Department [redacted] box [redacted] instructions are faded or missing. The lack of information on a posted sheet can create confusion in the event emergency services are required to enter the site.

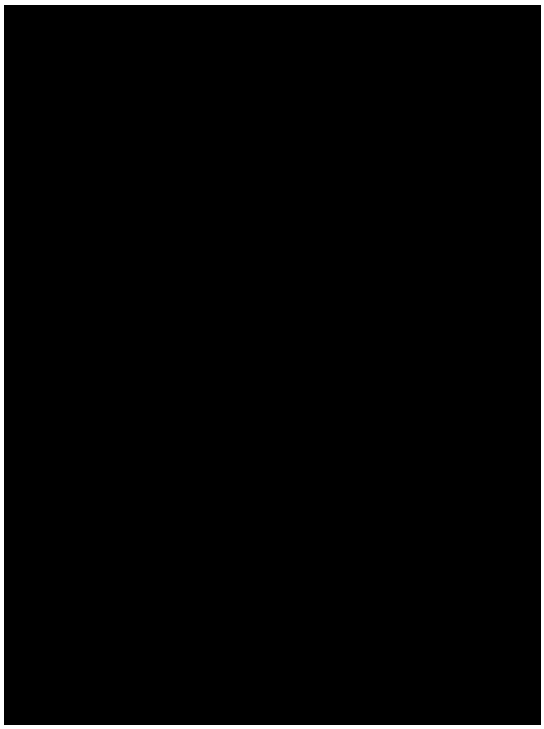

Figure 106: Fire Department [redacted] Box.

6. ESRB observed a dislodged chemical hazard sign obstructed behind piping and a fallen confined space sign. Fallen signage can lead to the misidentification of a hazard. Signage indicating a present hazard must be apparent and legible for easy identification of the sign and the associated hazard.

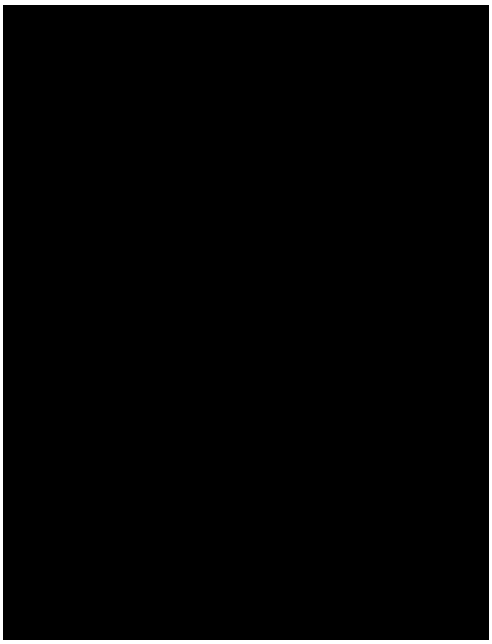

Figure 107: Chemical Hazard sign obstructed by piping.

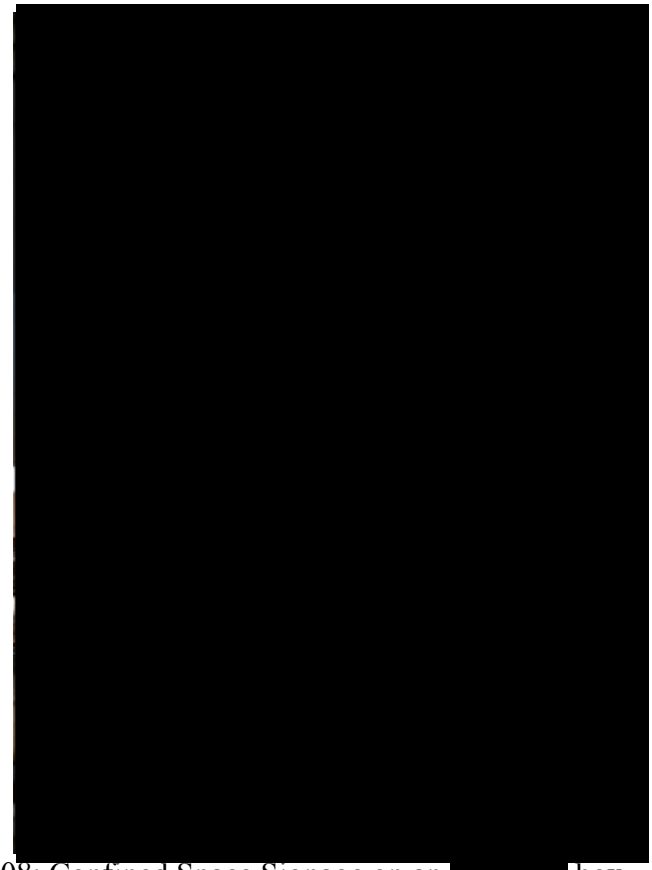

Figure 108: Confined Space Signage on an [redacted] box.

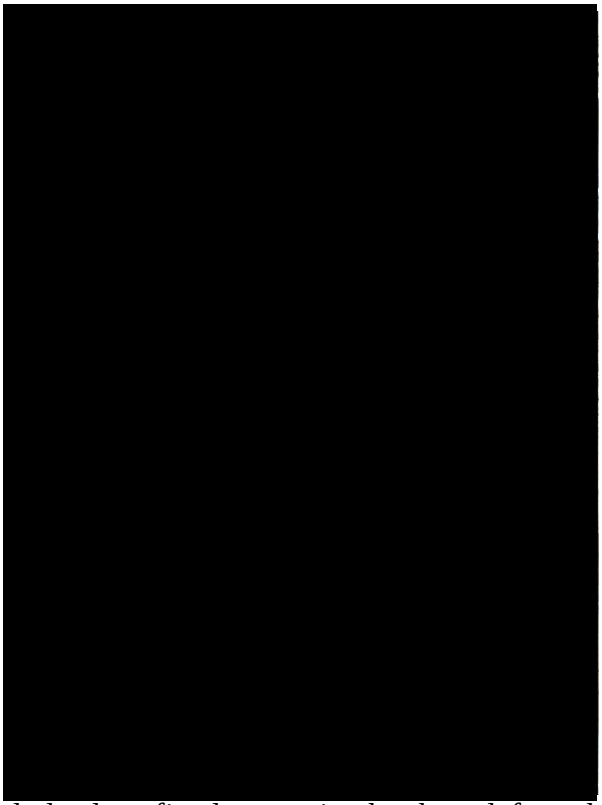

Figure 109: A dislodged confined space sign has been left on the ground.

7. The NFPA 704 diamond placard is damaged on the [redacted] atop the [redacted]. Labels identifying hazards present in the container must be maintained or replaced.

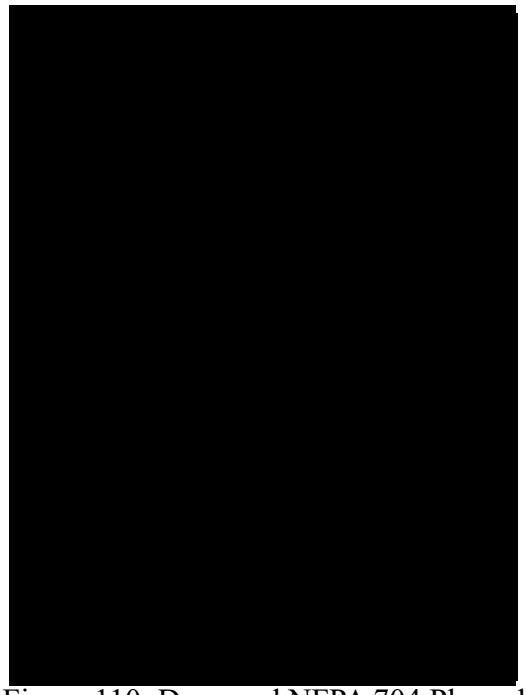

Figure 110: Damaged NFPA 704 Placard.

8. [redacted] covers and [redacted] points have associated signage that are being neglected. The painted sign has faded and become illegible and must be replaced.

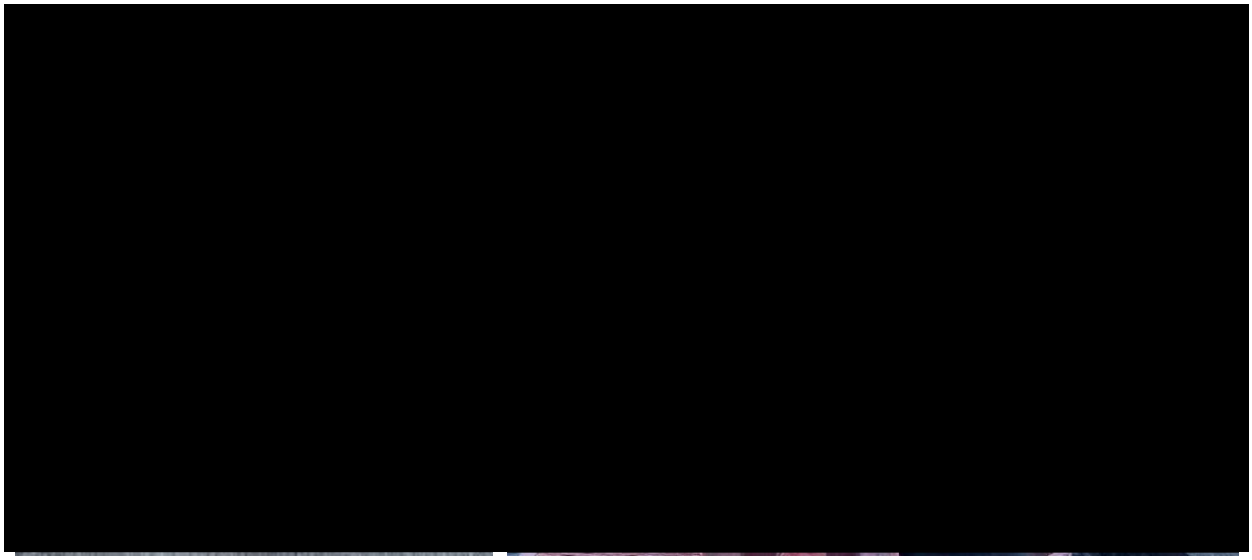

Figure 111: Faded and illegible Confined space Labels.

9. High voltage signs are fading and in disrepair.

Figure 112: Faded Danger Sign.

10. Pipe designation signs are being neglected.

Figure 113: Piping labels are faded and illegible.

11. Damaged and faded [redacted] information signs. The alert section on the top of the signage is missing some of the information due to the damage.

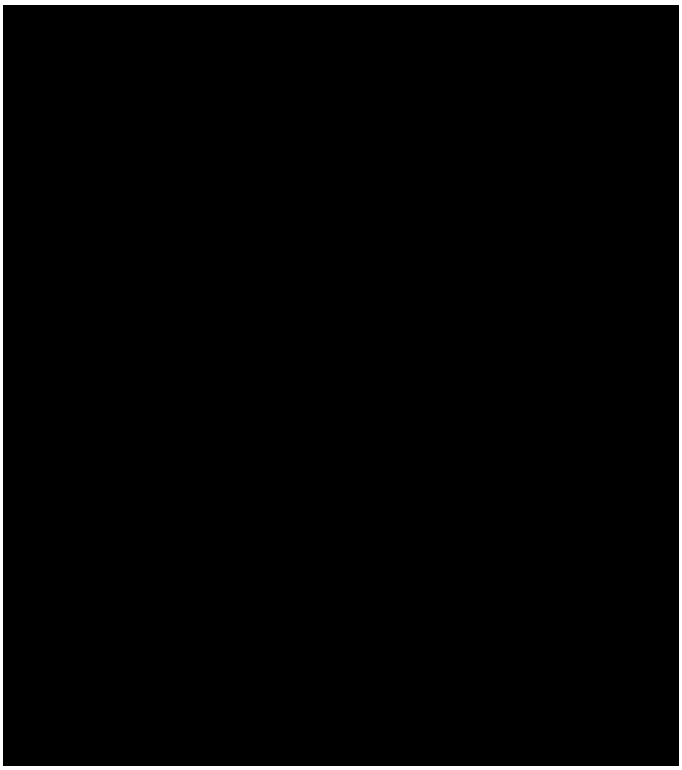

Figure 114: Damaged signage.

12. A sign identifying an emergency safety shower and eye wash station is broken and needs to be replaced.

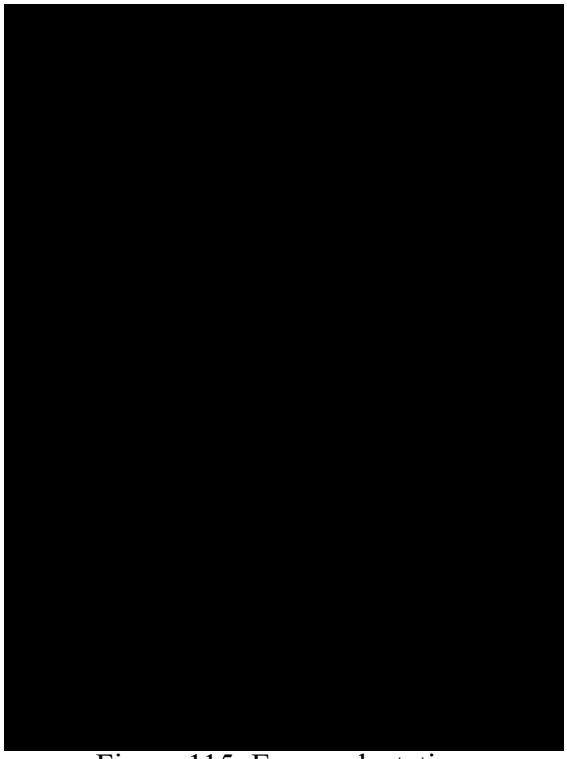

Figure 115: Eye wash station.

Finding 23: RCEC needs to enforce procedures to close out work orders and remove [redacted] from equipment around the plant.

GO 167-B Appendix E, OS 16: Participation by Operations Personnel in Work Orders states in part:

> *"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:*
>
> *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.*

Obsolete and outdated [redacted] are being left in place. After work is completed, [redacted] are to be removed. Leaving obsolete [redacted] in place can create confusion about the status of equipment. The [redacted] needs to be updated to include the removal of [redacted] from equipment following the completion of work.

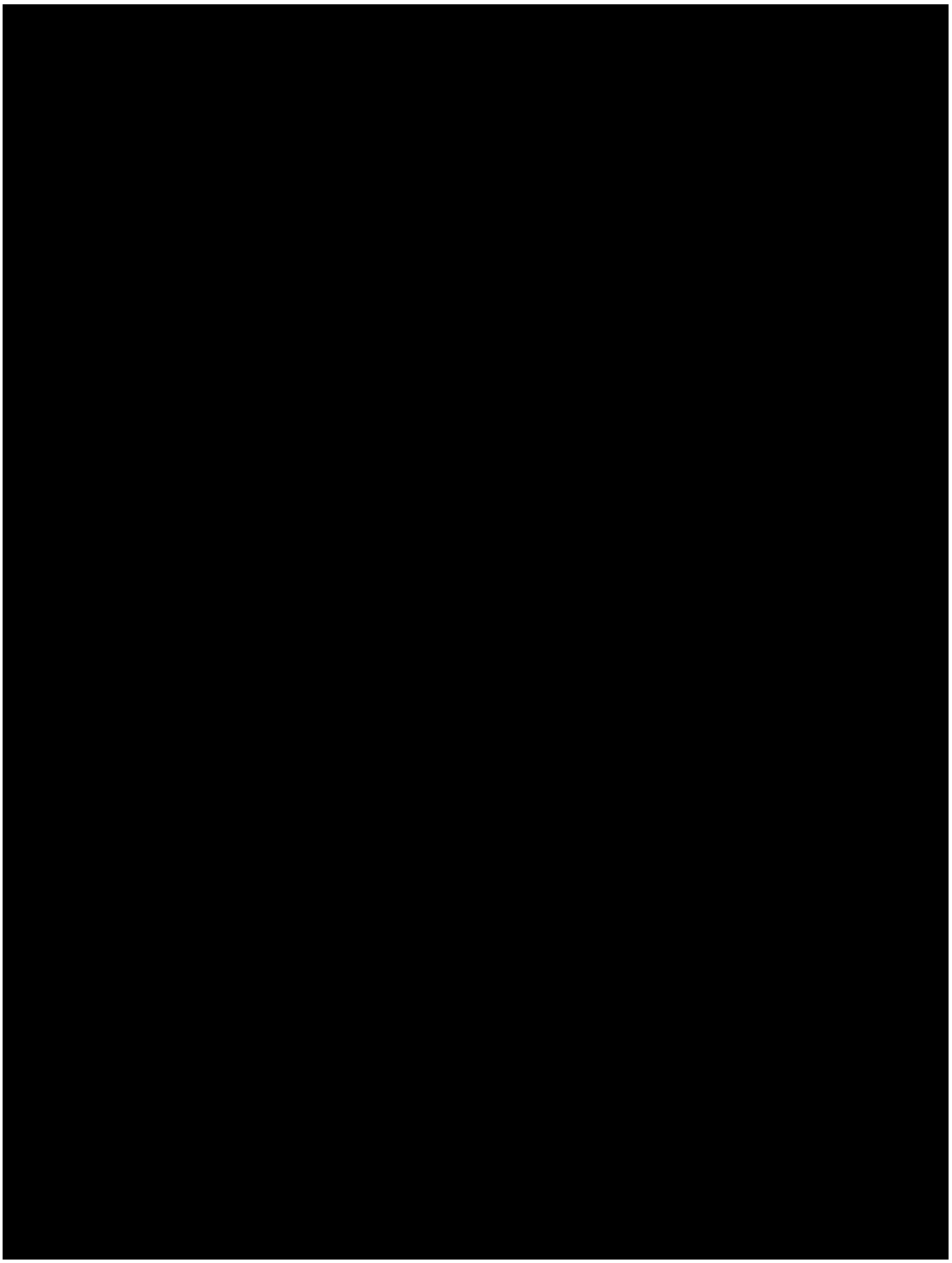

Figure 116: Old [redacted] left attached to equipment.

Finding 24: Piping and Instrumentation Diagrams are missing appropriate and updated notations.

GO167-B Appendix E, OS 7: Operation Procedures and Documentation states:

> ***"****Operation procedures exist for critical systems and states of those systems necessary for the operation of the unit including startup, shutdown, normal operation, and reasonably anticipated abnormal and emergency conditions. Operation procedures and documents are clear and technically accurate, provide appropriate direction, and are used to support safe and reliable plant operation. Procedures are current to the actual methods being employed to accomplish the task and are comprehensive to ensure reliable energy delivery to the transmission grid."*
>
> **Guidelines for Standard 7: Operation Procedures and Documentation** states in part:
>
> *"D. Procedures are clear and concise and contain sufficient information for users to understand and perform activities effectively, through the following elements:*
>
> > *2. Technical details such as setpoints, tolerances, control logic, and equipment numbers are correct and consistent among procedures, drawings, valve lineup sheets, and system descriptions.*
>
> *G. Procedures, documents, drawings, and other work-related references are readily accessible, authorized, clearly identified, controlled, technically accurate, and up to date."*

The turbine overspeed and explosion that occurred in 2021 required changes in procedures and equipment. Those modifications included new [redacted] and a new [redacted]. These modifications have not been properly noted on to the Piping & Instrumentation Diagrams. It is important for fleetwide use to notate the updates, changes and installations of equipment so "lessons learned" may be replicated. Symbolic notation (such as a cloud or bubble) with revision dates in the legend must be added.

II. Recommendations

Recommendation 1: The [redacted] lacks an emergency exit route on the [redacted] of the [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."*

Cal/OSHA Title 8, SS 1629: Stairways and Ladders states in part**:**

> *"(a) General.*
>
> *(4) A minimum of 1 stairway shall be provided for access and exit for buildings and structures to 3 stories or 36 feet; if more than 3 stories or 36 feet, 2 or more stairways shall be provided.629(b)."*

The [redacted] is a [redacted] structure like others that have had life threatening incidents, outside of RCEC. There are two points of emergency egress, the [redacted] to the [redacted] and a [redacted] on the [redacted] side. ESRB are concerned that individuals could become entrapped at the [redacted] end of the structure during a fire or structural emergency. In accordance with Cal/OSHA Title 8, ESRB recommends the installation of an additional emergency escape route.

Red arrows mark the primary access and emergency egress locations. The yellow arrow marks the area of concern.

Figure 117: Access and Egress locations.

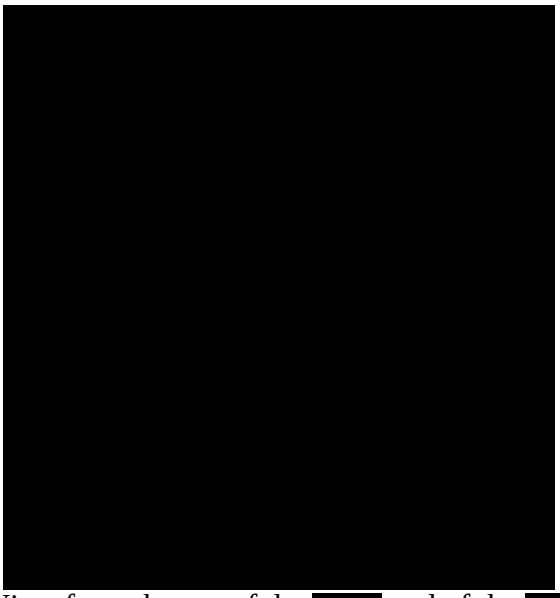

Figure 118: View from the top of the [redacted] end of the [redacted].

Recommendation 2: Due to the swift water discharge and a strong current at the [redacted] tank, a swimmer's "Life Hook" must be made available.

GO 167-B Appendix D Maintenance Standard 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."*

ESRB noted the swift current caused by the rapid flow of water exiting the [redacted]. A life ring is provided but the current will suck any person or rescuer into the intake grid. Therefore, the addition of a "Life Hook" is recommended to provide rescuers a safe method of extracting a drowning victim while maintaining personal safety.

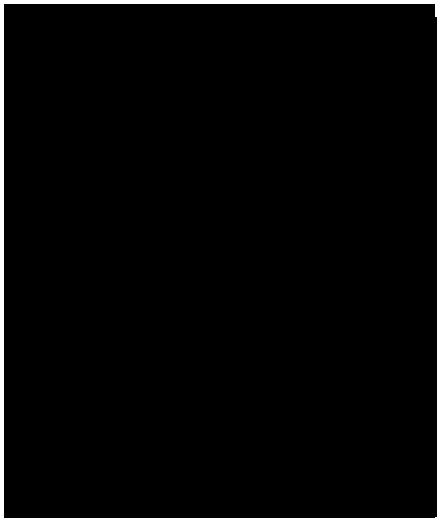

Figure 119: The [redacted] outlet has a very strong current.

III. 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 3years)***
	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 (Onsite)**
	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 for CTG, STG, Generator, HRSG, Condenser & Transformer
	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 andSteam Turbine)	71	Bearing Lube Oil Analysis
	72	Maintenance & Inspection Procedures (or related documents)
	73	Electrical Test Records
Transformers (All)	74	Hot Spots / IR Inspection Reports
	75	Oil Analysis Reports

Cathodic Protection	76	Procedures and Inspection Records
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

* 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.