

	Cadmium	
	Effective Date	May 20, 2024
	Page	1 of 7

Brunel Energy, Inc.

Cadmium

Contents

1	Purpose	2
2	Applicability	2
3	Definitions	2
4	Responsibilities	2
5	Requirements	3
5.1.	Locations	3
5.2.	Ventilation Systems	4
5.3.	Health Effects of Lead	4
6	Procedure	4
6.1.	General Work Practices.....	4
6.2.	Medical Surveillance	5
6.3.	Emergency Situations	6
7	Training	6
8	Recordkeeping	7
9	Reference	7

Cadmium	
Effective Date	May 20, 2024
Page	2 of 7

1 Purpose

- 1.1. Brunel Energy, Inc., hereinafter referred to as, the “Company,” has established a program however does not expect any exposure to Cadmium, if the job or project that we are working is determined to contain or potentially expose our employees, then we will work with the client to first determine if the hazard can be engineered out or if we will need to establish a protocol using this policy to safely perform the work.

2 Applicability

- 2.1. This policy applies to employees, subcontractors and/or visitor(s) of the Company. For the purposes of this policy, an employee shall be considered on the job whenever he/she is:
 - 2.1.1. On or in, any Company or client property, including parking areas; or
 - 2.1.2. On Company time even if off Company premises (including paid lunch, rest periods and periods of being on call).
- 2.2. As a condition of employment, Company employees are required to abide by additional governmental or customer policies and requirements that may be imposed at a worksite in addition to the requirements of these policies and procedures. Nothing set forth in this policy constitutes, construes, or interprets in any way as a contract of employment.

3 Definitions

- 3.1. **Cadmium** is a soft, malleable, bluish white metal found in the earth’s crust and from the soil. Cadmium is used in metal plating, stabilizers in plastic, and batteries. Cadmium is also found in some foods and is emitted by using fossil fuels such as coal and oil, tobacco, and burning waste.

4 Responsibilities

- 4.1. Manager(s):
 - 4.1.1. Shall develop and implement this policy.
 - 4.1.2. Ensure personnel are aware of types of work may have potential exposure to cadmium.
 - 4.1.3. Identify all possible locations where cadmium in the workplace may be found.
 - 4.1.4. Ensure monitoring is performed or other required actions as needed.
- 4.2. Supervisors(s):
 - 4.2.1. Support management in enforcing and implementing this policy.
 - 4.2.2. Ensure employees comply with this policy.
- 4.3. Employee(s):
 - 4.3.1. Shall be aware of the possible locations they may encounter cadmium exposure and notify supervisor of any potential exposure to cadmium.
 - 4.3.2. Shall comply with the cadmium awareness requirements including training requirements.

Cadmium	
Effective Date	May 20, 2024
Page	3 of 7

4.4. Subcontractor(s):

- 4.4.1. Shall be aware of the possible locations they may encounter cadmium exposure and notify supervisor of any potential exposure to cadmium.
- 4.4.2. Shall comply with the cadmium awareness requirements including training requirements.

5 Requirements

5.1. Locations

- 5.1.1. Each worksite shall create a list of possible locations of cadmium containing materials such as leaded paints, leaded solders, pipes, batteries, circuit boards, cathode ray tubes, leaded glass, and demolition/salvage materials.
- 5.1.2. The list is to be provided to management on a quarterly basis and revised as lead containing materials are added or eliminated from the previous list.
- 5.1.3. Where the PEL is exceeded, a written compliance program shall be established and implemented to reduce employee cadmium exposure to or below the PEL by means of engineering and work practice controls, including respiratory protection.
- 5.1.4. The written program must be reviewed and updated annually or more often to reflect significant changes in employer's compliance status.
- 5.1.5. The program must be provided for examination and copying upon request of affected employees, their representatives the Assistant Secretary and the Director.
- 5.1.6. Areas that are expected to contain cadmium shall have an initial air monitoring conducted to determine the 8-hour TWA exposure for each employee to characterize full shift exposure on each shift, for each job classification, in each work area.
- 5.1.7. Areas shall be monitored and any area that is above the action level shall have follow up monitoring every six months until 2 consecutive results are below the action level.
- 5.1.8. The employer shall perform additional monitoring when there has been any change in the production process, raw materials, equipment, personnel, work practices, or control methods that may result in new or additional exposures to cadmium, or when the employer has any reason to believe that new or additional exposures have occurred.
- 5.1.9. All air sampling monitoring data shall be included in a technology report and maintained as part of recordkeeping.
- 5.1.10. No employees shall be exposed to an airborne concentration excess of 2.5 micrograms per cubic meter of air (2.5 ug/m3), calculated as an 8-hour time-weighted average (TWA).
- 5.1.11. Employees shall be notified in writing of the air monitoring results and corrective actions taken.

Cadmium	
Effective Date	May 20, 2024
Page	4 of 7

5.1.12. A site-specific cadmium compliance air monitoring program shall be developed and implemented to reduce exposures to or below permissible limits.

5.1.13. No break rooms, lunch- rooms or changing rooms shall be in areas with exposure to lead above the PEL.

5.2. Ventilation Systems

5.2.1. The equipment and processes that typically contain Cadmium will be identified by work permit and or job hazard analysis.

5.2.2. Procedures for elimination of minimization of exposure will be the 1st line of defense. Special precautions will be exercised when maintenance of ventilation systems and changing of filters is performed.

5.3. Health Effects of Lead

5.3.1. Common symptoms of acute lead poisoning are loss of appetite, nausea, vomiting, stomach cramps, constipation, difficulty in sleeping, fatigue, moodiness, headache, joint or muscle aches, and anemia. Long term (chronic) overexposure to lead may result in severe damage to the blood-forming, nervous, urinary, and reproductive systems.

5.3.2. A medical surveillance program is available for all employees who are or may be exposed above the action level for more than 30 days.

5.3.3. Appropriate work practices shall be followed to ensure the cadmium containing materials are not disturbed.

5.3.4. Company will ensure that employees working in and adjacent to regulated areas comprehend the warning sign. Regulated access signs are to demarcate the lead exposure regulated work areas. The signs should read as follows:

5.3.4.1. Warning

5.3.4.2. Lead Work Area

5.3.4.3. Poison

5.3.4.4. No Smoking or Eating

6 Procedure

6.1. General Work Practices

6.1.1. When working on multi-contractor worksites the Company employees shall be protected from exposure.

6.1.2. If employees working immediately adjacent, the Company shall either remove the employees from the area until the enclosure breach is repaired or perform an initial exposure assessment.

6.1.3. Employees will wash hands and face if lead materials are contacted. Employees' hands and faces shall be washed if lead containing materials are contacted. Any possible contact with lead containing material must be reported immediately to the supervisor or Safety Coordinator.

Cadmium	
Effective Date	May 20, 2024
Page	5 of 7

- 6.1.4. If air is re-circulated back into the workplace, the system must be equipped with a HEPA (high efficiency particulate air) and backup filter, and a system to monitor the lead level will be installed.
- 6.1.5. When using mechanical means to remove lead-containing paints or coatings, use equipment which is equipped with a HEPA collection system.
- 6.1.6. Whenever possible, use a wet system to reduce airborne dust.
- 6.1.7. Whenever possible, substitute lead material with non-lead material.
- 6.1.8. Where hazards are present site-specific types of Personal Protection Equipment shall be provided to employees at no cost to protect skin and eyes from cadmium and the Company will ensure employees use proper PPE.
- 6.1.9. Respirators shall be provided and used during the time required to install or implement control if engineering and work practices are insufficient as well as for emergency use.
- 6.1.10. If respirators are required, they will be NIOSH certified and all employees will follow Company's Respiratory Protection Program.
- 6.1.11. Some workers will have to change out of work clothes and shower at the end of day, as part of their workday, to wash cadmium from skin and hair. Handwashing and cadmium-free eating facilities shall be provided by the Company and proper hygiene should always be performed before eating.
- 6.1.12. Do not smoke or use tobacco products, they naturally contain cadmium.
- 6.2. Medical Surveillance
 - 6.2.1. The Company shall also institute a medical surveillance program for all employees who are or may be exposed to cadmium at or above the action level unless employee is not exposed 30 or more days per year.
 - 6.2.2. The Company will provide limited medical examination as specified in 29 CFR OSHA 1910.1027 (l) (6) and assure that all medical examinations and procedures required are performed by or under the supervision of a licensed physician, who has read and is familiar with the health effects of cadmium and Appendix A of 1910.1027.
 - 6.2.3. The Company will assure that the collecting and handling of biological samples of cadmium will be in accordance with 29 CFR OSHA 1910.1027 (l)(1)(iv).
 - 6.2.4. Employee notification:
 - 6.2.4.1. Within (4) working days after the receipt of biological monitoring results, the employer shall notify in writing each employee whose cadmium level exceeds the standard exposure level.
 - 6.2.4.2. Access to Records: All medical records are kept confidential. The employee and employee's representative are entitled to see the records of measurements of your exposure to cadmium.

	Cadmium	
	Effective Date	May 20, 2024
	Page	6 of 7

6.2.4.3. Employee’s medical examination records can be furnished to your personal physician or designated representative upon request by the Company.

6.2.5. Observation of Monitoring:

6.2.5.1. The Company is required to perform measurements that are representative of employee’s exposure to cadmium and employee or designated representative are entitled to observe the steps taken in the measurement procedure, and to record the results obtained.

6.2.5.2. When the monitoring procedure is taking place in an area where respirators or personal protective equipment are required to be worn, employee or employee’s representative must also be provided with, and must wear the protective clothing and equipment.

6.3. Emergency Situations

6.3.1. Eye exposure direct contact may cause redness or pain. Wash eyes immediately with large amounts of water, lifting the upper and lower eyelids. Get medical attention immediately.

6.3.2. Skin exposure direct contact may result in irritation. Remove contaminated clothing and shoes immediately. Wash affected area with soap or mild detergent and large amounts of water. Get medical attention immediately.

6.3.3. Ingestion may result in vomiting, abdominal pain, nausea, diarrhea, headache, and sore throat. Treatment for symptoms must be administered by medical personnel. Under no circumstances should the employer allow any person whom he retains, employs, supervise or controls to engage in therapeutic chelation. Such treatment is likely to translocate cadmium from pulmonary or other tissue to renal tissue. Get medical attention immediately.

6.3.4. If large amounts of cadmium are inhaled, the exposed person must be moved to fresh air at once. If breathing has stopped, perform CPR. Administer oxygen if available. Keep the affected person warm and at rest. Get medical attention immediately.

6.3.5. Perform rescue and move the affected person from the hazardous exposure. If the exposed person has been overcome, attempt rescue only after notifying at least one other person of the emergency and putting into effect established emergency procedures. DO not become a casualty of yourself. Understand emergency rescue procedures and know the location of emergency equipment before the need arises.

6.3.6. The Company emergency action plans shall be utilized and followed should a release of cadmium occur.

7 Training

7.1. A training program must be provided for all employees who are potentially exposed to cadmium, at time of hire, during orientation or before initial assignment in areas and annually thereafter.

	Cadmium	
	Effective Date	May 20, 2024
	Page	7 of 7

- 7.2. Training must be recorded and include the identity of employee trained, the signature of the person who conducted the training, and the date of the training. Records must be kept for at least one year.
- 7.3. Training will include the health effects of cadmium, how cadmium is emitted, how to report suspected locations of cadmium containing material and not to disturb any possible cadmium containing material.
- 7.4. Training records shall be provided upon request (all materials relating to the employee information and training program) to regulatory agencies.

8 Recordkeeping

- 8.1. Cadmium air monitoring technology report records and training records shall be maintained.

9 Reference

- 9.1. OSHA 1910.1027