Reference Use
FCS Deconstruction Project Health and Safety Plan (HASP)
Pocket Guide 2021

To: All Fort Calhoun Employees and Contractors

From: Tim Uehling, Sr. Director FCS Decommissioning

Subject: Safety Expectations

Safety is a core value at Fort Calhoun Station Decommissioning and the top priority. Production and schedule will never override safety. The expectation is that EVERYONE will go home each and every day in a healthy condition, without injury. Reference 6.1.11 - FCSI-SAF-100: FCS Site Safety discusses the seven-points of the safety strategy, which are summarized below:

1. Management is responsible for safety.
2. All injuries are preventable.
3. All injuries shall be reported.
4. Safety is a condition of employment.
5. Train employees to work safely.
6. Safety audits in the work place.
7. People are the critical component of a safety and health program.

In addition, OPPD has 7 Life-Savings Rules that are essential to performing our work safely:

1. Employees will use proper fall protection when working 6 feet or closer to an unprotected side or edge that is 6 feet or greater to a lower level.
2. Employees shall wear the proper personal protective equipment when working on energized electrical equipment.
3. The proper confined space/enclosed space entry procedure shall be fully complied with prior to entry.
4. Employees shall use the proper lockout/tagout or hold order procedure.
5. Shoring or sloping shall be used in excavations 5 feet in depth or greater.
6. Avoid walking, standing, or working under a suspended load in the fall zone.
7. All occupants shall use seatbelts when available while operating or riding in any vehicle or equipment.

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Table of Contents

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1.0 PURPOSE

1.1 The safety of Fort Calhoun employees, contractors, and the public is our principal core value. Fort Calhoun will perform all work activities in a safe and professional manner that will not create a hazard to health, property, or the environment. All Fort Calhoun employees and contractors are responsible for full compliance with Fort Calhoun / OPPD procedures and OSHA regulations.

1.2 Fort Calhoun employees and contractors may report their safety or health concerns to OSHA and the Nuclear Regulatory Commission (NRC) without fear of reprisal. Safety and health concerns may also be reported via:

- Reference 6.1.10 - FCSI-EI-100: Employee Concerns Program.
- Fort Calhoun Employee Concerns Hotline (531) 226-6727.

1.3 Site History - The Fort Calhoun Nuclear Station was a single 484 megawatt (MWE) pressurized water reactor that initially went online in 1973. Fort Calhoun ceased power operations in 2016 and entered active decommissioning in 2020.

1.4 Scope of Work - Fort Calhoun employees and contractors will perform the decommissioning of the Fort Calhoun Nuclear Station and release the site for unrestricted use, except for the spent nuclear fuel and Greater Than Class C (GTCC) waste, which is stored at the Independent Spent Fuel Storage Installation (ISFSI) constructed on site.

1.5 Site Description - The Fort Calhoun Nuclear Station is located midway between Fort Calhoun and Blair, Nebraska, on the West bank of the Missouri River. The site consists of approximately 540 acres.

2.0 DEFINITIONS

2.1 ACGIH - American Conference of Governmental Industrial Hygienists: an organization of professionals in governmental agencies or educational institutions engaged in occupational safety and health programs. ACGIH develops and publishes recommended occupational exposure limits for chemical substances and physical agents.

2.2 Administrative Controls - The practice of limiting employee exposure by job rotation (unless prohibited by regulations), work practices, or medical restriction.

2.3 Bloodborne Pathogens - Microscopic organisms present in human blood and other body fluids that can cause disease in humans. These pathogens include, but are not limited to, Hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

2.4 Buddy System – A system of organizing employees into work groups in such a manner that each employee of the work group is designated to be observed by at least one

other employee in the work group. The purpose of the buddy system is to provide rapid assistance to employees in the event of an emergency. The use of portable radios may be an acceptable equivalent to the Buddy System in low-risk applications, i.e., Operator rounds, Security tours, housekeeping, etc.

2.5 Competent Person - A person who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are hazardous or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

2.6 Critical Building – Any permanent insured station building or structure which meets any one of the following criteria:

2.6.1 Contains radioactive process.

2.6.2 Building contains storage of significant radioactive material as identified in site specific Attachments of Reference 6.1.26 - OP-FC-201-009: Control of Transient Combustible Material.

2.7 Demolition - The wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.

2.8 Engineering Controls - Engineering controls minimize employee exposure by either reducing or removing the hazard at the source or isolating the worker from the hazards.

2.9 Excavation - Excavation shall mean any activity in which earth, rock, or other material in or on the ground is moved or otherwise displaced by means of tools, equipment, or explosives and shall include grading, trenching, digging, ditching, drilling, auguring, tunneling, scraping, and cable or pipe plowing or driving.

2.10 Job Hazard Analysis (JHA) - Carefully studying and recording each step of a job, identifying existing or potential job hazards (both safety and health hazards), and determining the best way to perform the job to reduce or eliminate these hazards. Also known as a Job Safety Analysis (JSA).

2.11 Near Miss - An event where no property / equipment was damaged and no personal injury sustained, but where, given a slight shift in time or position, damage and/or injury could easily have occurred. Near Misses shall be entered into the OPPD Industry Safe system.

2.12 NESHAP – 40 CFR 61, Subpart M: National Emission Standard for Asbestos

2.13 Permissible Exposure Limit (PEL) - The maximum amount or concentration of a chemical that a worker may be exposed to under OSHA regulations. In general, PEL's refer to substances that may be inhaled, although some can be absorbed through the skin or eyes.

2.14 Physical Agent - Physical agents are non-chemical hazards such as noise, heat, lasers, microwaves, or ultraviolet radiation. For the purposes of this HASP, this term does not include ionizing radiation.

2.15 Regulated Asbestos-Containing Material (RACM) - Regulated Asbestos-Containing Material (RACM) is (a) friable asbestos material, (b) Category I non-friable ACM that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting or abrading, or (d) Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

2.16 Safety Can - An approved container of not more than 5 gallons capacity, having a spring-closing lid and spout cover designed so it will safely relieve internal pressure when subjected to fire.

2.17 Safety Data Sheet (SDS) - A document, provided by the manufacturer or importer of a chemical substance, that presents hazard and safety information on that substance in a standard format. Previously referred to as a Material Safety Data Sheet (MSDS).

2.18 Shall – The term “Shall” denotes a requirement.

2.19 Should – The term “Should” denotes a recommendation.

2.20 Task Hazard Assessment / Project Safety Plan – A document included in approved Energy*Solutions* Work Packages that identifies known or expected hazards and the appropriate controls to mitigate or eliminate these hazards. Additional information specific to the work activity includes Industrial Hygiene monitoring requirements, medical requirements, training requirements, PPE, and applicable safety procedures that bound the work activity.

2.21 TLV (Threshold Limit Value) - Refers to airborne concentrations of substances or levels of physical agents, and represents the conditions under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effect. These guidelines are established by ACGIH.

3.0 RESPONSIBILITIES

3.1 Fort Calhoun employees and contractors have specific responsibilities to the Safety Program, which are detailed below.

3.2 All Employees and contractors

3.2.1 Follow all applicable safety rules, unless a variance has been established and approved;

3.2.2 Conduct or participate in Beginning of Shift Briefs, Pre-Job Briefs, or Task Previews, as appropriate;

3.2.3 Conduct Job Site Hazard Inspections/Two-Minute Drills upon arriving at a job site;

3.2.4 Use or wear (per the manufacturer's instructions) personal protective equipment applicable for the hazards to which they are exposed;

3.2.5 Notify supervisor or manager of any pre-existing injuries – or any fitness for duty issues – that may prevent them from safely completing a job or task.

3.2.6 Report all hazardous conditions to their supervisor or manager;

3.2.7 Report all events – incidents or near misses – to their supervisor or manager;

3.2.8 Assist with event analyses and correction of causal factors or other unsafe conditions as assigned.

3.3 Supervisors and Managers

3.3.1 Ensure that employees have completed required training on applicable safety practices, tools, materials, or equipment, and when applicable, have been designated as "qualified" prior to assigning those employees to associated work;

3.3.2 Ensure that employees are aware of applicable safety rules;

3.3.3 Ensure that proper hazard analyses have been completed, and appropriate control measures – including personal protective equipment requirements – have been established;

3.3.4 Ensure that employees have been supplied with and have completed the appropriate level of training on the tools, materials, and equipment needed or required to safely perform the work;

3.3.5 Ensure that jobs or tasks are properly planned;

3.3.6 Ensure that Beginning of Shift or Pre-Job Briefs are conducted as required;

3.3.7 Ensure that safety meetings and safety stand downs are conducted per Corporate Policy 8.01, Injury Prevention Program;

3.3.8 Ensure that all reported hazardous conditions or events are investigated per Corporate Policy 8.01, Injury Prevention Program;

3.3.9 Ensure applicable federal, state, and local safety regulations are followed.

4.0 PRECAUTIONS, LIMITATIONS AN PREREQUISITES

4.1 Nothing in this Health and Safety Plan (HASP) should be interpreted to conflict with or supersede federal, state, and local regulations, including Energy*Solutions* and Fort Calhoun / OPPD procedures. Information in this HASP incorporates selected information from the References located in Section 6.0 and is for information only; the specific procedure should be referenced to identify the safety requirements associated with a specific safety topic.

5.0 PROCEDURE

5.1 OSHA Regulations

5.1.1 Fort Calhoun is committed to performing all work activities in accordance with the applicable OSHA regulations detailed in References 6.1.1 - §29 CFR 1910: Occupational Safety and Health Standards and 6.1.2 - §29 CFR 1926: Safety and Health Regulations for Construction.

5.2 Resolution of Conflicting Requirements

5.2.1 Conflicting requirements will be resolved by the appropriate Managers / Supervisors prior to commencing work activities, so that only one approved method of performing work is incorporated into the Work Package. Controlling the interpretation of requirements is necessary so that clear and unambiguous direction is provided to the workforce.

5.2.2 If conflicting requirements are identified during the performance of the Work Package, the affected work activity shall be placed in a safe condition and immediately cease. The Work Supervisor and Safety will support evaluation and resolution of the conflicting requirements before the work activity is allowed to resume.

5.3 Work Planning

5.3.1 Fort Calhoun will perform Safety planning for each Work Package developed to support the work scope. Safety requirements including engineering controls, administrative controls, and PPE will be identified in the Work Package.

5.4 Stop Work Authority

5.4.1 All project personnel have the authority and the responsibility to stop work when health or safety concerns occur as per Reference 6.1.28 - OPPD Safety Manual Section 105: Stop-Work Actions. The affected work activity shall immediately cease, be placed in a safe condition, and then promptly reported to the Work Supervisor. The Work Supervisor shall involve Safety and other management as appropriate to promptly investigate and resolve the health or safety concern, enlisting the assistance of additional personnel as appropriate.

5.4.2 The Work Supervisor will ensure that the necessary actions to resolve health and safety concerns are implemented prior to resuming affected work activities, including identification of causal factors, development and implementation of corrective actions, and training of applicable personnel.

5.5 Incident Reporting

5.5.1 All Fort Calhoun employees and contractors are responsible for promptly reporting events that may injure personnel, damage equipment, or impact the environment, regardless of the perceived severity.

5.5.2 Personnel shall call **7-7-7-7-#** if calling from an onsite phone or **(531) 226-7777** if calling from an outside (i.e., cell) phone for any event that requires immediate response (i.e., fire, medical emergency, etc.).

5.5.3 Near Misses are incidents where no property / equipment was damaged and no personal injury sustained, but where, given a slight shift in time or position, damage and/or injury could easily have occurred. Near Misses shall also be reported to supervision and Safety for investigation and implementation of applicable Lessons Learned to prevent future recurrences. Near Misses shall also be entered into the OPPD Industry Safe system

5.5.4 Prompt investigation of accidents / injuries is essential to identify Lessons Learned to ensure that good practices and opportunities for improvement are identified and adopted. The investigation should be initiated the day of the event and completed within 48 hours.

5.6 Aerial Platforms and Scissor Lifts (§29 CFR 1926.453)

5.6.1 Aerial Platforms and scissor lifts will be used to support the FCS Decommissioning Project to provide access to elevated areas. Scissor Lifts will be operated in accordance with Reference 6.1.52 - OPPD Safety Manual Section 6: Ladders, Scaffolds, and Scissor Lifts

5.6.2 Additional training is required for personnel operating Aerial Platforms / Scissor Lifts. Operators shall be trained on the same make / model or one having similar characteristics and controls.

5.6.3 Scissor lifts should not be moved while the platform is elevated. If you need to relocate the platform to allow reaching an elevated work area, the scissor lift should be fully lowered, repositioned, and then re-elevated to access the work area.

5.6.4 Aerial Platforms / scissor lifts shall **NOT** be used as a crane.

A. All loads shall be carried inside of the platform basket.

B. Loads shall **NOT** be carried on the platform basket rails.

5.6.5 Egressing an elevated Aerial Platform basket shall be performed in accordance with the protocols identified in Reference 6.1.5 - EnergySolutions Task Hazard Assessment / Project Safety Plan, or contact Safety for guidance.

5.6.6 Operation of Aerial Platforms (from the elevating platform) requires the use of fall prevention at all times, including movement of an Aerial Platform with the platform lowered.

5.6.7 If anchor points are provided by the scissor lift manufacturer, a fall restraint system shall be used.

5.6.8 The travel path must be evaluated for stability by the operator prior to movement of the Aerial Platform / scissor lift. Evaluation points include:

A. Does the travel path cross storm drains, underground utility covers, grates, etc.? If so, seek an alternate travel path so that the weight of the Aerial Platform / scissor lift is not imposed on these coverings.

B. Is the travel path stable, level, and on solid ground?

C. Is there adequate clearance to prevent contact with structures, overhead lines, personnel, other vehicles, etc.?

5.6.9 Aerial Platforms and scissor lifts shall not be operated if wind speed exceeds 25 mph. Wind speed monitoring should be performed if elevated wind speeds are forecast or present.

5.7 Asbestos (§29 CFR 1926.1101)

5.7.1 Asbestos is the name given to a number of naturally occurring, fibrous silicate minerals mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. Asbestos was commonly used as an acoustic insulator, and in thermal insulation, fireproofing and other building materials. Asbestos is made up of

microscopic bundles of fibers that may become airborne when asbestos-containing materials are damaged or disturbed. When these fibers get into the air they may be inhaled into the lungs, where they can cause significant health problems.

5.7.2 Additional training and State of Nebraska licensure is required for personnel performing work activities involving friable asbestos.

5.7.3 Asbestos work activities shall be performed in accordance with References 6.1.40 - OPPD Safety Manual Section 204: Asbestos and 6.1.68 - SA-FC-15-0016: Asbestos Management Plan.

5.7.4 Asbestos Containing Material (ACM) is defined as any material containing >1% asbestos by weight as determined by records, manufacturer's specifications, laboratory analysis, or some other means. Presumed Asbestos Containing Material (PACM) is material that has not been analyzed and has the possibility of containing asbestos.

5.7.5 Known or presumed asbestos containing materials include:

- Bitumen roofing material and buried concrete structure coating
- Caulks
- Ceiling tile
- Chemical Laboratory counter-tops and fume hoods
- Crane and elevator brake shoes
- Electrical cable insulation
- Electrical Installation air seals and fire stops
- Fire door sealant / mastic
- Floor tile and mastics
- Furmanite
- Gaskets
- Thermal system insulation (TSI)
- Transite boards inside of circuit breakers, motor control centers (MCC), and electrical distribution panels
- Transite panels for exterior building cladding
- Valve packing
- Ventilation duct (rigid) sealants
- Wall and floor penetration Fire barrier material

5.7.6 If you should encounter a material that you believe contains asbestos, do not contact or disturb the material and notify your supervisor and Safety.

5.7.7 Reference 6.1.3 - §40 CFR 61: Subpart M; National Emissions Standards for Asbestos regulates demolition of facilities that may contain asbestos. Prior to demolition of any building an Asbestos NESHAP Inspection of the building

shall be performed and all Regulated Asbestos-Containing material (RACM) will be removed.

5.7.8 A minimum of 10-working days notification will be made to the Nebraska DHHS prior to commencing asbestos abatement or building demolition.

5.8 Bird and Bat Droppings

5.8.1 There are health risks, including exposure to infectious diseases that are a concern when performing work activities that involve disturbing bird and/or bat droppings.

5.8.2 Work activities that involve known or potential exposure to bird and bat droppings should be performed in accordance with the protocols identified in Reference 6.1.5 - EnergySolutions Task Hazard Assessment / Project Safety Plan, or contact Safety for guidance.

5.9 Bloodborne Pathogens (§29 CFR 1910.1030)

5.9.1 Bloodborne Pathogens are pathogenic microorganisms that are present in human blood and body fluids and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV). Protocols for bloodborne pathogens are in Reference 6.1.42 - OPPD Safety Manual Section 206: Bloodborne Pathogens.

5.9.2 All blood and body fluids should be considered potentially infectious. Please notify your supervisor immediately if an exposure has occurred.

5.10 Buddy System

5.10.1 Fort Calhoun uses a buddy system for high hazard work activities, including confined space entries and work activities involving potential heat stress, Hot Work, Lockout/Tagout, fall protection, working over or near water, and operation of powered equipment. The purpose of the buddy system is to provide rapid assistance to employees in the event of an emergency.

5.11 Carbon Monoxide

5.11.1 Carbon monoxide (CO) is a colorless, odorless, toxic gas which interferes with the oxygen-carrying capacity of blood. Carbon monoxide is non-irritating and can overcome persons without warning. Carbon monoxide is a byproduct of incomplete combustion and requires special monitoring equipment to determine its presence. Work activities that produce carbon monoxide include operation of internal combustion engines and Hot Work (i.e., oxygen-fuel gas and plasma arc cutting).

5.12 Caulks, Paints, and Coatings

5.12.1 Caulks are used to seal joints in components, windows, and structures for noise mitigation, thermal insulation, and water penetration. The versatility of caulks allows them to be used in numerous applications over a wide range of temperatures. The physical properties of caulk are dependent upon the materials used by the manufacturer; over time caulk may remain soft and pliable, or may become brittle and crumble easily.

A. Some of the materials commonly used in caulks include asbestos, lead, and PCBs. Sampling of many of the caulks at Fort Calhoun has been performed.

B. If your work activity involves disturbing caulk, the Work Package should identify if asbestos, lead, and/or PCBs are present and the appropriate controls to disturb the caulk. If you should encounter caulk that is not identified in your Work Package, **STOP** and inform your Supervisor and Safety. An evaluation of the caulk will be performed to determine the appropriate actions to properly handle the caulk.

5.12.2 Paints and coatings are used to protect a substrate (i.e., metal, concrete, any material that the paint or coating is applied to) from corrosion and to present a visually pleasing appearance. Paints and coatings are presumed to contain lead until laboratory analysis of the paint has been performed.

5.12.3 If your work activity involves disturbing paint or coatings, the Work Package should identify if lead and/or PCBs are present and the appropriate controls to disturb the paint.

5.13 Changing Conditions, Eyes on Path

5.13.1 All personnel are responsible for maintaining their “Eyes on Path” as conditions will change on a continuous basis for the duration of the Fort Calhoun Deconstruction Project as Structures, Systems, and Components (SSC’s) are removed. These changes can occur at any time, and require you to constantly evaluate your work area to ensure that conditions are acceptable for you to perform your work safely.

5.13.2 If any unsafe condition is identified, promptly notify your Supervisor for resolution. Implement measures to keep personnel out of the work area until the unsafe condition has been resolved.

5.14 Cold and Dark

5.14.1 Portions of FCS have been placed in a Cold & Dark condition, de-energizing and isolating all external energy sources. Electrical panels and cables

identified by orange tape provide temporary power to select equipment at FCS. In addition, temporary power-packs are located in various areas of the plant.

5.14.2 Access Requirements for Cold and Dark Buildings

A. Cold and Dark buildings are **not to be used for storage**.

B. If you need to access a building or area that is Cold and Dark, you must:

C. Contact the ISS (ISFSI Shift Supervisor) or WEC and inform them where you will be, why you will be there, and how long you expect to be there:

- ISS (531) 226-6888
- WEC (531) 226-7905

D. **You must have a means of communication** with you, and the best practice is to ensure it will work in the area when you first enter. A radio or phone is recommended.

E. A flashlight or headlight is required to be on your person.

F. If you bring with you any materials or tools, you must bring them back out when you no longer need to be in the building / area.

5.14.3 Decon Power

A. Orange tape signifies Decon Power, which should now be considered live. All cables feeding from the Decon Power transformers and switchgear are marked with orange tape. These panels should NOT be accessed by anyone other than Operations personnel or electricians.

5.15 Compressed Gasses (§29 CFR 1910.101)

5.15.1 Compressed gases present a unique hazard. Depending on the particular gas, there is a potential for simultaneous exposure to both mechanical and chemical hazards. If the gas is flammable, flash points lower than room temperature compounded by high rates of diffusion present a danger of fire or explosion. Additional hazards of reactivity and toxicity of the gas, as well as asphyxiation, can be caused by high concentrations of even normally benign gases such as nitrogen. Since the gases are contained in heavy, highly pressurized metal containers, the large amount of potential energy resulting from compression of the gas makes the cylinder a potential rocket or fragmentation bomb.

5.15.2 Compressed gasses will be used in accordance with References 6.1.26 -

OP-FC-201-009: Control of Transient Combustible Material, 6.1.27 - OPPD Safety Manual Section 10: Compressed Gas, and 6.1.66 - SA-FC-122: Handling and Storage of Compressed Gas Cylinders / Portable Tanks and Cryogenic Containers / Dewars. General safety requirements include:

A. Review Safety Data Sheet (SDS) before using any compressed gas or cryogenic liquid.

B. Do not store or use grease, cleaning solvents, or other flammable material with an oxygen valve, oxygen regulator, or oxygen use piping.

C. Store and use acetylene cylinders in the upright position at all times.

D. Compressed gas cylinder valves should be isolated and hoses depressurized when equipment is unattended and not in use, (i.e., during breaks, lunch, end of day, etc.).

E. If it is reasonably anticipated that gas will not be drawn from an oxidizing or fuel-gas cylinder within 24 hours (overnight hours included), then:

    1. Remove the regulators and install the cylinder protective caps.

    2. Separate oxygen cylinders from fuel-gas cylinders (i.e., acetylene, gasoline, petroleum gas, and propane, etc.) or other combustible material by:

        a. A non-combustible barrier at least 5-feet high having a fire resistance rating of at least one-half hour; or

        b. A minimum of 20 feet distance.

    3. Ensure compressed gas cylinder caps are installed properly (i.e., the correct cap for the cylinder and hand-tightened).

    4. Post approved storage areas with the hazard class or the name of the gases stored. Post “No Smoking” signs where appropriate.

    5. Secure all compressed gas cylinders, including empties, by one of the following options to prevent cylinders from falling while in use, being transported, or in storage. Position the securing device above the center of gravity (e.g., about 1/3 down from top), in front of or around the cylinder(s).

        a. A minimum 1/4 -inch wire cable.

        b. Devices that are part of a manufactured system, or

c. A substantial chain, strap, or rope.

- Plastic rope (i.e., radiation rope, safety rope, etc.) should not be used because it has a low tensile strength and tends to degrade when exposed to sunlight.
- Substantial straps should include a fastening mechanism (e.g., buckle). Velcro is not a suitable fastening mechanism.

5.15.3 Use approved flash arrestors on gas welding and cutting equipment in both the fuel-gas and oxygen lines at the torch end of the hose.

5.16 Concrete

5.16.1 During the course of the Fort Calhoun Deconstruction Project, concrete dust may be generated by the work process. Different concretes have different ingredients, some that can be hazardous like silica, lime, gypsum, nickel, cobalt, and chromium compounds. Engineering Controls, PPE, and approved Work Practices will be defined in the Work Package to minimize dust release and keep the dust levels low.

A. The potential health risks from breathing concrete dust include cancer, chronic bronchitis, and silicosis.

B. The potential health risks from direct contact with wet concrete include allergic reactions, burns, rashes, and other kinds of skin irritation, and eye irritation.

5.17 Confined Spaces (§29 CFR 1910.146)

5.17.1 A Confined Space is defined as an area that:

A. Is large enough and so configured that an employee can bodily enter and perform assigned work.

B. Has limited or restricted means for entry or exit (tanks, vessels, silos, storage bins, pipes, heat exchangers, vaults, pits, etc.).

C. Is not designed for continuous employee occupancy.

5.17.2 Additional training is required for personnel performing work activities involving Confined Spaces

5.17.3 Entry into confined spaces shall be performed in accordance with Reference 6.1.33 - OPPD Safety Manual Section 12: Confined Space.

5.17.4 A list of Fort Calhoun Confined Spaces is found in Reference 6.1.8 - FCSD-

RP-JA-900-1: Confined Space Evaluations. Please note that these Confined Spaces will eventually be demolished and thus will no longer exist due to the demolition process.

5.17.5 Demolition of existing structures may create or allow access into previously inaccessible spaces. Fort Calhoun employees and contractors should be vigilant for the presence of confined spaces and will notify their Supervisor and Safety if such a space is found. Do not enter such spaces until a Confined Space Evaluation Permit is obtained.

5.18 Contractor Control

5.18.1 Contractors will be utilized to perform specific work activities. OPPD is the Controlling Employer at the Fort Calhoun Nuclear Station and retains the ultimate responsibility to ensure that work performed by contractors is performed per contract requirements and meets Fort Calhoun standards and expectations.

A. Safety Expectations - The Contractor should be aware of and comply with the Fort Calhoun focus on safety.

B. Contractor shall promptly notify their Fort Calhoun Designated Manager / Supervisor of all injuries, near misses, spills, equipment failures, and safety concerns; and conduct safety investigations in accordance with OPPD protocols. The Fort Calhoun Designated Manager / Supervisor is responsible for reporting these occurrences to the Safety.

C. Contractor should provide copies of applicable employee training records, licenses, respirator fit tests, and medical clearances (i.e., Physician’s Written Opinion) supporting their work activities to Safety.

5.19 Covid-19

5.19.1 The Covid-19 pandemic has presented challenges globally and locally at Fort Calhoun. Our priority is keeping employees safe while making sure our customers have the power they need. As guidance and recommendations change related to COVID-19, we are committed to keeping you informed. OPPD will communicate changes to our OPPD protocols as required.

5.19.2 Facial Coverings - OPPD now requires that the appropriate style of facial coverings be worn by employees, contractors, and visitors while working in OPPD property in the following situations:

A. When you cannot maintain a distance of at least 6 feet of separation with other employees, contractors, visitors or customers.

B. When passing through hallways or stairwells.

C. When passing through or using common spaces, such as cafeterias, break areas, or vending areas.

D. When going to and from – and while using – the restroom.

E. When multiple employees are present in a passenger vehicle (e.g., car, pickup, SUV, etc.), or in larger commercial vehicles (e.g., line trucks).

i	**NOTE** If every employee traveling in a large commercial vehicle on the same work trip has to perform work in close proximity under circumstances where wearing a facial covering is deemed to create a new hazard (see F below), the requirement to wear a facial covering for these employees on this particular trip is waived.	i

F. **A facial covering should not be worn if it creates a new hazard that cannot be otherwise resolved**. If there are questions or concerns, the employee should discuss in detail with their immediate supervisor to achieve clarity and guidance

G. Facial coverings are required inside the Radiologically Controlled Area.

H. Workers may wear facial coverings when going through the whole-body monitors. Do not put soiled facial coverings through the small article monitors (SAM's). If the facial covering contains pathogens, it could spread within the SAM.

5.19.3 Facial Coverings in Contamination Areas

A. Ear loop or molder surgical masks are permitted to be used in Contamination Areas (CAs) under these conditions:

1. There is no radiological or industrial requirement for additional respiratory protection.

2. The wearer will not touch / adjust the ear loop surgical face mask. If adjustment is absolutely required, they will don a new pair of clean gloves prior to the adjustment.

3. When exiting the CA, remove all other required dressout clothing as per procedure before removing the surgical face mask. The surgical face mask must be disposed of when exiting the CA and a new, clean face mask must be donned immediately after first surveying (frisking) your hands. Ensure you plan for this prior to entering.

4. Consideration for an exemption, if required, to wearing a face mask in the CA is at the discretion of the work group supervisor and/or project manager. Department managers will review and be aware of exemptions granted for their group. If common themes are identified or standardization between crews is required, the department manager will take action as necessary.

5. If the facial covering creates a new hazard that cannot be resolved otherwise, please ask questions and get your work group supervisor and/or project manager involved. That way, we can work through the concern and ensure we are protecting everybody to the best of our ability.

5.19.4 Self-Monitoring

A. Everyone is required to self-monitor each day before reporting to work.

B. If your temperature exceeds 100.4^{O} F, or if you are displaying Covid-19 symptoms (e.g., cough, runny or stuffy nose, sore throat, fatigue, etc.), **DO NOT** report to work. Contact your Supervisor for direction.

5.19.5 Social Distancing

A. Practice social distancing, which means maintaining a distance of six feet from other people whenever possible.

5.20 Cryogenic Liquids

5.20.1 Cryogenic liquids are liquefied gases that are kept in their liquid state at very low temperatures. Different cryogens become liquids under different conditions of temperature and pressure, but all have two properties in common: they are extremely cold, and small amounts of liquid can expand into very large volumes of gas, displacing the oxygen required to sustain life. The vapors and gases released from cryogenic liquids also remain very cold. They often condense the moisture in air, creating a highly visible fog.

A. Cryogenic liquids shall be handled in accordance with Reference 6.1.66 - SA-FC-122: Handling and Storage of Compressed Gas Cylinders / Portable Tanks and Cryogenic Containers / Dewars.

5.21 Demolition Engineering Surveys (§29 CFR 1926.850)

5.21.1 Prior to commencing demolition operations, a Demolition Engineering Survey shall be made by a Competent Person of the structure to determine the condition of the framing, floors, and walls, and possibility of unplanned collapse of any portion of the structure.

A. The Demolition Engineering Survey requirements shall be incorporated into the Work Package.

B. Demolition of structures shall be performed in accordance with Reference 6.1.61 - OSHA Technical Manual Section V: Chapter 1 – Demolition and the approved Work Package.

C. A minimum of 10 working days notification will be made to the Nebraska Department of Health Human Services (DHHS) prior to commencing building or structure demolition.

5.22 Dropped Objects

5.22.1 Decommissioning work activities requires work to be performed at heights, with the potential for dropped objects. Dropped objects have the potential to cause equipment damage, personnel injury, or death.

A. Methods to prevent dropped objects have been incorporated into Reference 6.1.5 - EnergySolutions Task Hazard Assessment / Project Safety Plan, or contact Safety for guidance.

B. **NOTHING** should be tossed or thrown to anyone under any circumstances.

5.23 Drugs and Alcohol

5.23.1 Fort Calhoun has zero tolerance for the use or abuse of alcohol or controlled substances. Reference 6.1.14 - FFD-100: Fitness For Duty Program is designed to provide reasonable assurance that Fort Calhoun employees and contractors are free of any substance that may adversely affect work performance.

A. Post-Event / For Cause testing should be performed for all employee and contractors in accordance with for:

B. An occupational accident or occurrence which resulted in bodily injury to the employee or others, and the employee might reasonably have avoided the accident or occurrence;

C. A near-miss occurrence that the employee might reasonably have avoided

D. An observation of an individual performed in accordance with the OPPD Behavioral Observation Program;

E. The release of hazardous material; or

F. Workplace altercations/fights.

5.24 Drums

5.24.1 Pressurized drums pose a serious hazard to employees. When a drum lid or ring from a pressurized drum is released in an uncontrolled fashion, it can become a dangerous projectile, causing serious injury or death to the worker or other workers in the vicinity. **Drums that appear to be in acceptable condition may still contain enough pressure to cause injury**.

5.24.2 Work activities that involve opening drums shall be performed in accordance with the protocols identified in Reference 6.1.5 - EnergySolutions Task Hazard Assessment / Project Safety Plan, or contact Safety for guidance.

5.25 Electrical Safety (§29 CFR 1926 Subpart K)

5.25.1 Work activities that require working on or near electrical equipment and electrical power sources shall be performed by Qualified Individuals in accordance with Reference 6.1.34 - OPPD Safety Manual Section 14: Electrical Work.

5.25.2 Only Electricians or other personnel as approved by the Work Supervisor or Safety shall connect or disconnect 480-volt equipment.

5.25.3 Electrical Equipment – The working space in front of electrical equipment (i.e., switchboards, panelboards, or motor control centers, breakers, temporary electrical distribution panels, etc.) shall be maintained free and clear to permit ready and safe operation and maintenance of such equipment. The minimum dimensions of the work space are:

A. At least the width of the electrical equipment or 30 inches, whichever is greater,

B. At least 6.25 feet high from the grade, floor, or platform, and

C. At least 3 feet deep.

5.25.4 Ground Fault Circuit Interrupter (GFCI)

A. GFCI's shall be visually inspected and tested by the user before each day's use.

B. Use a GFCI (plug in or fixed) on all 120 VAC receptacle circuits when:

1. Using an extension cord, portable electrical tools and temporary lighting (e.g., drop lights),

2. In wet environments,

3. Used outdoors, and

4. Used inside Confined Spaces.

5.26 Emergency Eyewash Stations

5.26.1 Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided in accordance with Reference 6.1.49 - OPPD Safety Manual Section 504: Emergency Showers and Eye Wash Stations.

5.27 Emergency Response and Accountability

5.27.1 The requirements and expected actions in the event of incidents up to and including emergency response situations are identified in Reference 6.1.13 - FCSI-SAF-102: Decommissioning Site Emergency Response Plan. These include:

A. Notification of Emergency Assembly for non-emergency plan events will be via the site radio system and the overhead paging system in the Administration Building and the Training Center.

B. A manual process has been established that will enable Radiation Protection / Chemistry and the containment coordinator to maintain accountability inside the Radiologically Controlled Area during an emergent event. These guidelines will help ensure we continue to look out for one another and do not leave an individual behind if a plant emergency is declared.

1. Individuals will be provided orange name tags that they will clip on to their lanyard.

2. When individuals enter the RCA from the Main RCA entrance (Radwaste Building Room 501), they will take their nametag and clip it to the rope hanging underneath the Aux Building sign. If working in containment, they will clip it to the rope under the containment sign by the Main Containment entry point in Corridor 26.

3. When the individual exits the work area and begins to exit the RCA, they will then grab their nametag they had hung up previously and place it back on their own lanyard.

5.28 Evacuation

5.28.1 Site evacuation may be called for any Emergency classification. Evacuation involves the movement of personnel outside of the Deconstruction Area.

5.28.2 Security will provide specific instructions to personnel leaving the Owner Controlled Area.

5.28.3 Other situations that involve the evacuation of personnel from occupied localized onsite areas are controlled on a case-by-case basis.

5.28.4 Emergency Evacuation

A. In the event of an emergency evacuation, there are two assembly areas utilized for accountability. You will be directed to either the Primary or Backup depending upon the situation and safety, OR as directed by supervision.

B. Primary Assembly Area is the North parking lot in front of the Admin Building.

C. Backup Assembly Area is the West parking lot for the Training Center.

5.29 Excavations and Trenching (§29 CFR 1926 Subpart P)

5.29.1 Fort Calhoun work activities may involve excavation, which shall mean any activity in which earth, rock, or other material in or on the ground is moved or otherwise displaced by means of tools, equipment, or explosives and shall include grading, trenching, digging, ditching, drilling, auguring, tunneling, scraping, and cable or pipe plowing or driving.

i	**NOTE** Operation of heavy equipment (excavators, skidsteers, forklifts, wheel loaders, mobile cranes, etc.) may result in incidental soil displacement due	i

	to the wheels / tread, this incidental soil displacement is not considered excavation work activities and does NOT require an Excavation Permit.	

5.29.2 Excavation work activities shall be performed in accordance with:

A. Reference 6.1.35 - OPPD Safety Manual Section 15: Excavations

B. Reference 6.1.62 - OSHA Technical Manual Section V: Chapter 2 - Excavations: Hazard Recognition in Trenching and Shoring

5.29.3 **Nebraska 811 (**800.331.5666) shall be notified at least 2 working days prior to commencing excavation work activities.

5.29.4 Damage to underground utilities is credible if penetration of the earth is required, i.e., exploratory digging, installation of tent stakes, environmental monitoring, etc., even if an excavation is not required.

Table 1 – Nebraska Underground Utility Flag Color Codes

Red		Electric
Orange		Telephone; Cable TV; Fire and Police Communications
Yellow		Gas, Oil, Petroleum
Green		Sewer
White		Proposed Excavation
Blue		Water
Purple		Reclaimed Water
Pink		Temporary Survey

5.30 Fire Extinguishers

5.30.1 Fire extinguishers are used in many applications on the FCS Decommissioning Project, including:

A. Fixed portable fire extinguishers strategically located in Buildings.

B. Firewatch support for Hot Work activities.

C. Mounted on or readily available for operation of Heavy Equipment / Mobile Equipment.

5.30.2 Fire extinguishers will be used in accordance with Reference 6.1.51 - OPPD Safety Manual Section 506: Fire Extinguishers.

5.30.3 Fire Extinguishers mounted on Heavy Equipment / Mobile Equipment should be visually inspected as part of the shiftly Heavy Equipment Mobile Equipment inspection.

5.30.4 Notify the ISS immediately following the extinguishment of a fire or the discharge of a fire extinguisher.

5.31 First Aid / Medical Care for Injuries (§29 CFR 1926.50)

5.31.1 Fort Calhoun maintains First Responders that are certified in First Aid, Automated External Defibrillators (AED) and CPR. **All injuries, no matter how slight, shall be promptly reported to immediate supervision and Safety**.

5.31.2 The Work Supervisor is responsible for ensuring that there are first aid supplies readily available and accessible at the jobsite.

5.31.3 Automatic External Defibrillators (AEDs) are pre-staged in various locations, personnel should be knowledgeable of the location of the nearest AED to their work area.

5.31.4 Reporting Protocols

A. For injuries requiring First Responders, dial (531) 226-7777.

B. Personnel will also report injuries following their employer's protocol.

5.32 Flammable and Combustible Liquids and Aerosols (§29 CFR 1926.152)

5.32.1 Flammable and combustible liquids and aerosols shall be handled in accordance with Reference 6.1.26 - OP-FC-201-009: Control of Transient Combustible Material. The purpose of this procedure is to govern the handling and limit the use of ordinary combustible materials, and combustible and flammable liquids and gases inside Critical Buildings. Specific controls include:

A. Flammable and combustible liquids or aerosols should be kept in an approved (e.g., UL Listed, FM Approved, DOT specification, etc.) container and the container shall be closed when left unattended.

B. Containers, including aerosol cans, when not attended, should be stored

in UL Listed/FM Approved flammable liquid storage cabinets.

C. Do not store any items within 2 feet or on top of any Flammable / Combustible Liquids Storage Cabinet.

D. Safety Cans shall only be used for the liquid for which they are identified.

5.33 Floor / Wall Openings

5.33.1 The decommissioning of the Fort Calhoun Nuclear Station will create floor and wall openings that may not have been accessible since construction due to the removal of plant components, piping, structures, etc. A floor opening is a gap or void twelve inches or more in its least dimension in a floor, roof or other walking/working surface.

A. Protocols for managing floor / wall openings are included in Reference 6.1.5 - EnergySolutions Task Hazard Assessment / Project Safety Plan, or contact Safety for guidance.

5.34 Forklifts (Powered Industrial Trucks) (§29 CFR 1910.178)

5.34.1 Forklifts shall be operated in accordance with Reference 6.1.46 – OPPD Safety Manual Section 308: Industrial Trucks / Forklifts.

A. Additional training is required for personnel operating forklifts.

B. Attachments installed on the forklift should be provided by the manufacturer. Use of non-manufacturer attachments requires the written approval of the manufacturer.

C. “Free Rigging” (the direct attachment to or placement of rigging equipment, i.e., slings, shackles, rings, etc. onto the tines of a forklift for a below the tines lift) is prohibited unless written approval from the manufacturer is provided.

D. An operable backup alarm is required on all forklifts.

E. Lower forks, neutralize controls, shut-off power and set brakes whenever leaving forklift unattended.

1. A powered industrial truck is unattended when the operator is 25 feet or more away from the vehicle which remains in his view, or whenever the operator leaves the vehicle and it is not in his view.

5.34.2 The operator shall remain in the forklift whenever a load is elevated.

5.34.3 Never allow personnel to stand or pass under the elevated portion of any

forklift, whether loaded or unloaded.

5.35 Hazard Communication (Right to Know) (§29 CFR 1910.1200)

5.35.1 Chemical hazards are managed by proper housekeeping, establishing barriers with appropriate postings, training, monitoring of the chemical hazard, and compliance with the applicable procedures and regulations. Fort Calhoun is committed to eliminating or minimizing personal exposure to chemical hazards in accordance with References:

A. 6.1.38 - OPPD Safety Manual Section 201: Hazard Communication

B. 6.1.57 - OPPD Safety Manual, Supplement E: Energy Production and Nuclear Decommissioning

C. 6.1.71 – SO-G-70: Chemical Control

5.35.2 Safety Data Sheets (SDSs, previously known as Material Safety Data Sheets) may be obtained from your Supervisor, who will retrieve the Safety Data Sheet from the 3E system.

5.35.3 Engineering controls are the preferred method for chemical hazard management, followed by administrative controls (unless prohibited by regulations, i.e., asbestos, hexavalent chromium, etc.). PPE will be utilized if engineering controls and administrative controls do not provide the required personal protection.

5.35.4 As required, air monitoring should be performed in accordance with Reference 6.1.59 – OSHA Technical Manual Section II: Chapter 1 – Personal Sampling for Air Contaminants. An American Industrial Hygiene Association (AIHA) Accredited Laboratory should analyze air-sampling media requiring offsite laboratory analysis.

5.35.5 The Threshold Limit Values (TLV) that are established in Reference 6.1.4 - ACGIH Guide to Occupational Exposure Values (Latest Edition) have been adopted where a regulatory Permissible Exposure Limit (PEL) does not exist.

5.35.6 All chemical products must be reviewed and approved by Radiation Protection / Chemistry and the Energy*Solutions* Waste Manager in accordance with Reference 6.1.71 – SO-G-70: Chemical Control.

5.35.7 Report a spill or potential release of chemicals to the ISS at (531) 226-6668.

5.36 Hazardous Substances

5.36.1 Hazardous substances are substances, which by reason of being explosive,

flammable, poisonous, corrosive, oxidizing, irritant, or otherwise harmful is likely to cause injury (i.e., lead, cadmium, chromium, mercury, zinc, PCBs, etc.).

5.36.2 Hazard Assessment surveys have been performed of all buildings at Fort Calhoun. These are used for planning work activities, including building demolition.

5.37 Hazards, Biological

5.37.1 Biological hazards include plants and animals/insects that when present or contacted present a potential hazard to Fort Calhoun employees or contractors. The Work Supervisor will perform a Hazard Assessment of the work area for biological hazards prior to commencing work activities.

5.38 Heavy Equipment

5.38.1 Heavy equipment (backhoes, skid steers, mobile cranes, flatbed trucks, roll-on/roll-off trucks, etc.) are required to support the Fort Calhoun Deconstruction Project. Operators of heavy equipment will be trained on the same model of heavy equipment or one having similar characteristics and controls consistent with the heavy equipment to be used.

5.38.2 An operable backup alarm is required on all heavy equipment. In the event that the backup alarm is not operational, a spotter may be used pending repairs of the backup alarm.

5.38.3 Care will be taken to ensure that heavy equipment is not parked such that it blocks access to fire hydrants, emergency equipment, or exit routes.

5.38.4 Heavy equipment operators will be alert for personnel at all times; personnel will be alert for heavy equipment operations at all times.

5.38.5 Every effort will be made by all personnel to maximize their distance from operating heavy equipment including:

A. As necessary, establishing safety barriers or assigning dedicated spotters to keep personnel out of the pathway of operating heavy equipment.

B. Evaluate alternate pathways to maintain adequate distance from the heavy equipment operating area.

C. Seat belts (if so equipped) shall be worn when operating heavy equipment.

5.39 Hexavalent Chromium (§29 CFR 1910.1026)

5.39.1 Hexavalent chromium and its compounds are more toxic than other chromium compounds; potential exposure to hexavalent chromium includes work activities involving welding, cutting and grinding on metal containing chromium (i.e., stainless steel, chrome moly steel, Inconel, etc.).

5.39.2 Work activities involving hexavalent chromium will be performed in accordance with References 6.1.5 - EnergySolutions Task Hazard Assessment / Project Safety Plan and 6.1.44 - OPPD Safety Manual Section 208: Hexavalent Chromium.

5.39.3 Hexavalent chromium is a toxic form of the element chromium. Exposure to hexavalent chromium can cancer, irritation to the nose and throat, and an allergic skin reaction.

5.40 Hoisting and Rigging (§29 CFR 1926 Subpart CC)

5.40.1 Decommissioning of the Fort Calhoun Nuclear Plant will involve significant hoisting and rigging of components, equipment, and structures. Hoisting and rigging shall be performed in accordance with: the following References:

A. 6.1.15 - GM-OI-HE-1: Polar Crane HE-1 Normal Operation

B. 6.1.16 - GM-OI-HE-2: Auxiliary Building Crane HE-2 Normal Operation

C. 6.1.17 - GM-OI-HE-3: Turbine Room Crane Normal Operation

D. 6.1.18 - GM-OI-HE-31: Radwaste Processing Building Crane - Normal Operation

E. 6.1.19 - GM-OI-HE-48: South Containment Auxiliary Crane HE-48 Normal Operation

F. 6.1.20 - GM-OI-HE-5: Intake Structure Overhead Crane Operation

G. 6.1.21 – MA-FC-716-021: Hoisting and Rigging Program

H. 6.1.22 - MA-FC-716-024: Use of Personnel Platforms

I. 6.1.47 - OPPD Safety Manual Section 309: Cranes, Derricks, Hoisting Equipment

J. 6.1.70 – SO-G-61: Rigging Equipment Inspection at Fort Calhoun

5.40.2 Additional training is required for Crane Operators, Riggers, and Signal Persons.

5.40.3 A high-visibility vest worn shall be worn by the Crane Signal Person, in addition high-visibility gloves or other measures to ensure adequate visibility for the Crane / Hoist Operator to clearly observe hand signals shall be implemented.

5.40.4 Radio communications or equivalent shall be used to maintain constant communication with the Crane / Hoist Operator for blind lifts or if clear and unobstructed view of the Crane / Hoist Operator is not possible for any reason.

5.40.5 Access to the lift area or any openings created shall be strictly controlled by a watch person, barriers, or both.

5.40.6 Mobile Crane Operation

A. A Dedicated Spotter should be stationed in addition to establishing a physical safety barrier to keep personnel and equipment out of the mobile crane's superstructure / counterweight swing radius (the hazard area).

B. The physical safety barrier can be control lines, warning lines, railings, orange cones, or similar barriers to mark the boundaries of the hazard areas.

C. If it is not feasible to erect a physical safety barrier, the hazard area must be clearly marked by a combination of warning signs (such as "Danger – Swing / Crush Zone") and high visibility markings on the mobile crane that identify the hazard areas.

5.40.7 No one will allow any portion of his or her body underneath a suspended load for any reason. Employees may stand beside a suspended load and guide it into place with their hands when, in view of the height of the load, actual and potential swing of the load and trip hazards, the employees are not at risk of being struck by the load if it were to fall.

5.40.8 Rigging Equipment

A. Prior to use, rigging equipment will be inspected by OPPD in accordance with Reference 6.1.70 - SO-G-61: Rigging Equipment Inspection at Fort Calhoun. A color-coded tie-wrap will be attached to the rigging equipment (green is the color-code for 2021, please refer to Table 1-2 in the OPPD Safety Manual for follow-on year's color-code).

1. Shall be of domestic (USA) origin unless specifically authorized.

5.40.9 Softener Requirements

A. Softeners are required for all lifts using slings (of any construction, i.e. nylon, Kevlar, wire rope, etc.) where the softener is used to protect against a sharp edge or a potentially sharp edge.

B. Softeners used, shall be a softener specifically designed for that purpose. Job-built softeners shall be of sufficient design and construction to provide protection for lifting slings.

C. Where necessary, softeners shall be secured in place to prevent slippage and eventual damage to slings or other rigging components.

5.41 Hot Work (§29 CFR 1926 Subpart J)

5.41.1 Fort Calhoun work activities will involve Hot Work, which is defined as welding, cutting, grinding, open flame work, elevated temperature (i.e., pre/post weld heat treatment), or any other work activity that produces sparks. Hot work will require a Hot Work Permit and trained Firewatch personnel.

5.41.2 Hot Work shall be performed in accordance with the requirements of References 6.1.24 – FCSI-FP-200: Fire Prevention and 6.1.50 - OPPD Safety Manual Section 505: Fire Protection.

5.41.3 Additional training is required for personnel performing Firewatch duties.

5.41.4 When cutting and welding operations are performed above grating decks, cable trays, or near floor or wall openings, then the deck or openings below the operation will be covered with suitable noncombustible material that ensures slag, sparks or any hot material cannot fall to a lower elevation.

5.41.5 When Hot Work activities are performed on multiple levels or Hot Work at one level has the potential to cause fire at another level (sparks, falling material, etc.), then a Firewatch will be placed at each level.

5.41.6 Metal slag is created when torch cutting metal and is NOT considered a fire; use of a water extinguisher or water-filled garden sprayer will cool the slag (spot cooling) to where it cannot set combustible materials on fire.

5.41.7 A fire of any sort, of any duration, shall be promptly reported to the ISFSI Shift Supervisor, with follow-up notification to the Work Supervisor, Fire Marshall, and Safety.

5.41.8 If Hot Work is to be performed from an elevated Aerial Platform / scissor lift, then the following additional requirements will be met:

5.41.9 A Firewatch will be present in the elevated Aerial Platform / scissor lift where

Hot Work is being performed, and

5.41.10 An additional Firewatch will be stationed in the area(s) where sparks / slag could drop down. The additional Firewatch will have the ability to communicate via voice, phone, or radio with personnel on the Aerial Platform / Scissor Lift.

5.41.11 Local exhaust ventilation should be evaluated as an Engineering Control for Hot Work activities in accordance with Reference 6.1.41 - OPPD Safety Manual Section 205: Exhaust Ventilation.

5.41.12 Weld screens or an equivalent substitute should be used when welding, cutting, grinding, etc., to protect adjacent personnel from sparks, flying debris, and/or the weld flash.

5.42 Housekeeping (§29 CFR 1926.25)

5.42.1 Housekeeping will be performed on an ongoing basis and at the end of each shift to maintain a safe working environment in accordance with References 6.1.23 - MA-FC-716-026: Station Housekeeping / Material Condition Program and 6.1.30 - OPPD Safety Manual Section 109: Housekeeping. At the completion of the work activity the work area should be returned to a condition equivalent to, or better, than when work commenced.

5.43 Hydrolazing

5.43.1 Hydrolazing is a process whereby a stream of pressurized water (up to 50,000 psi) is aimed at undesirable materials adhering to a substrate, such as the inside of a metal tank or paint on steel, concrete, or other material. The water stream is set at the minimum pressure to remove the unwanted material while at the same time minimize damage to the substrate material.

5.43.2 PPE specifically designed for users of high-pressure water systems will be worn, as appropriate.

5.44 Industrial Hygiene

5.44.1 Prior to commencing decommissioning work activities, the Contractor will perform a Hazard Assessment to determine if there if is potential exposure to air contaminants listed in Appendix A, Subpart Z of Reference 6.1.2 - §29 CFR 1926: Safety and Health Regulations for Construction.

5.44.2 Fort Calhoun will utilize OSHA PELs (Permissible Exposure Limits). Where PELs are not available for a particular hazardous substance or chemical, ACGIH TLVs (Threshold Limit Values) will be utilized as the exposure limit. As required, Industrial Hygiene (IH) monitoring should be performed of work

activities in accordance with Reference 6.1.59 – OSHA Technical Manual Section II: Chapter 1 – Personal Sampling for Air Contaminants.

5.45 Isocyanates (OSHA Directive CPL 03-00-017)

5.45.1 Isocyanates are highly reactive chemicals used in the production of foams (i.e., Great Stuff®), coatings, and insulating materials. Isocyanates cause severe skin and eye irritation, inflammation, nasal congestion, sore throat, cough, shortness of breath, and wheezing. Isocyanate exposure can cause fluid collection in the lungs, or pulmonary edema, and respiratory sensitization.

5.45.2 The potential work process that may be implemented at Fort Calhoun that could cause isocyanate exposures is the spray-foaming process. When spraying isocyanate-containing materials, the potential for exposure comes from vapors, mist droplets, and tiny flakes of curing foam which become airborne due to the compressed air used and overspray. It is essential to prevent inhalation and skin and eye contact. The appropriate engineering controls and PPE, including respiratory protection, will be specified in the approved Work Package.

5.46 Ladders (§29 CFR 1926.1053)

5.46.1 Ladders shall be used in accordance with Reference 6.1.52 - OPPD Safety Manual Section 6: Ladders, Scaffolds, and Scissor Lifts.

5.46.2 All material should be raised or lowered using a line or other hoisting method. Never ascend or descend a ladder while hand carrying any object.

5.46.3 Face the ladder and maintain three points of contact at all times while ascending and descending.

5.46.4 Portable ladders shall not be placed in doorways, aisles, passageways or other locations where the ladder could be displaced by other work activities, unless protected by barriers or guards.

5.47 Lead (§29 CFR 1926.62)

5.47.1 Lead is a naturally occurring bluish-gray metal found in small amounts in the earth's crust. The negative health effects of lead are the same whether it enters the body through breathing or swallowing. Lead can affect almost every organ and system in your body. The main target for lead toxicity is the nervous system.

5.47.2 Lead work is any activity that disturbs lead-containing materials (i.e., cold-cutting, grinding, torch cutting, drilling, chemical removal, abrasive blasting,

handling of exposed elemental lead, etc.).

5.47.3 Personnel who perform lead work will receive Lead (Pb) Worker training prior to disturbing the lead-containing material and annually thereafter.

5.47.4 Lead (Pb) work activities will be managed in accordance with the following References:

A. 6.1.55 - OPPD Safety Manual Section 9: Welding, Cutting, and Brazing

B. 6.1.56 - OPPD Safety Manual Supplement C: Underground Lines and Equipment

C. 6.1.57 - OPPD Safety Manual, Supplement E: Energy Production and Nuclear Decommissioning

5.47.5 A task-specific Lead Compliance Plan should be developed and implemented to perform lead work activities. Reference 6.1.63 – OSHA Technical Manual Section V: Chapter 3 - Controlling Lead Exposures in the Construction Industry: Engineering and Work Practice Controls should be used to develop the Lead Compliance Plan, or contact Safety for guidance.

5.47.6 Respiratory Protection is required for thermal cutting (Hot Work) of any painted system, structure, or component.

5.47.7 Potential sources of lead include:

A. Caulk.

B. Expansion units used to anchor bolts to concrete, brick, mortar, and other rigid building materials.

C. Paints and coatings. Representative sampling has been performed throughout Fort Calhoun Station; lead has been confirmed or presumed to be present in all paints and coatings.

D. Radiation shielding, either encapsulated to prevent contact with the elemental lead or exposed (i.e., lead bricks) where contact with the exposed lead is possible via handling, physical contact, etc.

E. Roof flashing.

5.48 Line of Fire – Pinch Points

5.48.1 Line of Fire – This can also be called “Struck By”. Anytime you are not aware of where tools or equipment might be after you perform some action on them, you may be putting yourself into a “line of fire” situation. Don’t

forget that line of fire can be horizontal as well as vertical. Look up and down AND side to side for line of fire potentials. Stop – Think – Act – Review (STAR) is a good defense against being "struck by".

5.49 Lockout/Tagout (§29 CFR 1910.147)

5.49.1 Lockout/Tagout is the adoption and implementation of practices and procedures to shut down equipment, isolate it from its energy sources (i.e., mechanical, hydraulic, pneumatic, chemical, thermal, or other energy), and prevent the release of potentially hazardous energy while maintenance and servicing activities are being performed. Lockout means to install a locking device that locks the switch, valve, or other mechanism in the required position to support the work activity, while Tagout means to put a tag on the locking device. The tag indicates DANGER or WARNING, along with a brief message.

5.49.2 Additional training is required for personnel performing Lockout / Tagout work activities. If you have not received this additional training:

A. **NEVER** remove a component with a danger tag affixed to it.

B. **NEVER** manipulate a device with a danger tag attached to it.

C. **NEVER** remove a danger tag from a component.

D. If during the course of your work you find yourself in a situation addressed above, stop and contact your Supervisor for assistance.

5.49.3 Lockout / Tagout shall be performed in accordance with References 6.1.9 – FCSI-AD-403: Lockout / Tagout Program and 6.1.31 - OPPD Safety Manual Section 11: Control of Hazardous Energy (Lockout / Tagout).

5.50 Material Handling and Storage (§29 CFR 1926 Subpart H)

5.50.1 Material handling is defined as the movement, either manually or with equipment, of material from one location to another for use and/or storage. Material handling and storage will be performed in accordance with Reference 6.1.32 - OPPD Safety Manual Section 110: Material Handling and Storage.

5.50.2 Movement of a Heavy Detector Shield (HDS, i.e., Small Article Monitor [SAM]) presents specific challenges due to its weight (approximately 3,800 pounds) and the high center of gravity of the HDS. HDS movement requires implementation of Reference 6.1.65 - SA-FC-121-1000: Heavy Detector Shield and Small Article Monitoring (SAM) Handling.

5.50.3 Proper manual material handling requirements include:

A. Plan the work in advance. Consider the size, shape, and weight of materials to be handled and determine the most efficient and safest method to accomplish the task.

B. Avoid hazards such as sharp edges, odd sizes or shapes of loads, hazardous or fragile material, uneven weight distribution, and obstructed routes of travel while lifting and carrying.

C. Ensure that when more than one person is involved in lifting, that they move materials in unison. Each employee should be alert for what the others are going to do and when.

D. Select employees so that work assignments match the worker to the job in terms of knowledge and physical abilities.

5.50.4 Proper material storage requirements include:

A. Do not overload bins, racks, and shelves beyond their rated weight capacity.

B. Ensure that material/equipment is placed in a stable, secure manner so as not to fall or become inadvertently displaced where it could cause personnel injury.

C. Ensure that unobstructed access to fire hoses and extinguishers are maintained, and that exits and aisles are kept clear.

D. Tools and material should not be stored on top of electrical panels, distribution panels, junction boxes, transformers, etc., whether energized or de-energized.

5.51 Mercury

5.51.1 Mercury, sometimes referred to as quicksilver, elemental, or metallic mercury is a shiny, silver-white metal and is liquid at room temperature. When dropped, elemental mercury breaks into smaller droplets, which can go through small cracks or become strongly attached to certain materials. Mercury releases present a serious environmental and health problem. Inhaling mercury vapors – which are colorless and odorless – can cause irreversible damage to the brain and kidneys.

5.51.2 Mercury is known to have been present or is presumed in the following locations / components:

- Electronic circuit boards.
- Fire Deluge Valves.
- Fluorescent light bulbs.
- Manometers.
- Mercoid switches.
- Thermostats.

5.51.3 Mercury or mercury-containing components will be disposed of as per Waste Management direction.

5.51.4 Mercury Spill Protocols

A. Immediately isolate the spill area using warning signs, safety barriers, or personnel to prevent personnel from entering the spill area and spreading the mercury.

B. Notify the ISS at (531) 226-6888.

5.52 Missile Hazards

5.52.1 Missile Hazards will be managed in accordance with Reference 6.1.69 - SO-G-119: Site Wind Generated Missile Protection Standards.

5.52.2 Tools, equipment, and materials such as cardboard boxes, items covered with a tarpaulin, light-weight items with a large surface area such as plywood, unsecured PVC piping, etc., should be stored at all times to ensure that they do not become missile hazards. Proper storage methods could include:

A. Bring the material indoors where it is not exposed to the wind.

B. Place a heavy weight on top to prevent it from becoming airborne.

C. Practice proper housekeeping to prevent accumulation of potential missile hazards.

D. Use additional restraining straps to secure tarpaulins to prevent wind from getting underneath the tarpaulin.

5.53 Mold (OSHA Safety and Health Information Bulletin 03-10-10)

5.53.1 Mold may be present in structures where Fort Calhoun employees or contractors work. Currently, there are no federal standards or regulations (i.e., OSHA, NIOSH, and EPA) for airborne concentrations of mold or mold spores. Scientific research on the relationship between mold exposures and health effects is ongoing.

5.53.2 Most typical indoor air exposures to mold do not present a risk of adverse health effects. However, molds can cause adverse effects by producing allergens (substances that can cause allergic reactions). The onset of allergic reactions to mold can be either immediate or delayed. Allergic responses include hay fever-type symptoms such as runny nose and red eyes.

5.53.3 Symptoms other than allergic and irritant types are not commonly reported as a result of inhaling mold in the indoor environment. Healthy individuals are usually not vulnerable to opportunistic infections from airborne mold exposure.

5.53.4 Depending upon the as-found conditions, mold remediation may be required to protect the health and safety of building occupants.

5.53.5 A Mold Remediation Plan will be developed if mold remediation is required. Reference 6.1.6 – EPA 402-K-01-001, March 2001: Mold Remediation in Schools and Commercial Buildings will be used to develop the Mold Remediation Plan.

5.54 Nitrogen Dioxide (NO_2)

5.54.1 Nitrogen Dioxide (NO_2) is an emission byproduct of internal combustion engines, which presents a potential hazard if an internal combustion engine is operated indoors (Carbon Monoxide (CO) is another emission byproduct that is covered in Section 5.11 - Carbon Monoxide). Symptoms of overexposure to NO_2 include irritation to the eyes, nose and throat, cough, decreased pulmonary function, chronic bronchitis, breathing difficulty, chest pain, pulmonary edema, and rapid heartbeat.

5.55 Office and Kitchen Safety

5.55.1 Office work activities present safety challenges different than decommissioning work activities that must be properly managed.

5.55.2 Fire Prevention Strategies and Emergency Preparedness:

A. All individuals should familiarize themselves with the location of fire escape routes, means of activating the fire alarm, and methods of reporting fires.

B. In the event of a fire, do not collect personal / company belongings, leave the area immediately and exit to the designated gathering area.

5.55.3 Furniture and Equipment:

A. Furniture and equipment should be arranged to allow for quick and unobstructed egress under emergency conditions.

B. File cabinet drawers should be opened one at time to prevent them from tipping, close drawers after use.

5.55.4 Heat-producing devices (coffee pots, toaster ovens):

A. Heat-producing devices should only be used in kitchen areas or other areas as approved by Safety.

B. Coffee pots should be turned off at the end of the shift, or have an integral timer or connected to a timer that **DOES NOT** automatically re-energize.

C. Toaster (and microwave) ovens should have an integral timer that secures cooking after the user-determined pre-set time.

5.56 Oily Rags

5.56.1 Oily / petroleum-stained rags may be generated supporting the FCS Large Component Removal Project, i.e., supporting Heavy Equipment inspection / maintenance. Oily rags present an exothermic fire hazard if not properly managed.

5.56.2 Oily rags should be promptly disposed of in an Oily Rag can and notification made to Waste Management for processing / disposition.

5.57 Overhead Power Lines

5.57.1 Energized overhead power lines are present on the Fort Calhoun Deconstruction Project. Work activities performed on or in the vicinity of energized overhead power lines shall be performed in accordance with Reference 6.1.34 – OPPD Safety Manual Section 14: Electrical Work.

Reference Use
FCS Deconstruction Project Health and Safety Plan (HASP)
Pocket Guide 2021

Figure 1 - 161 kV Overhead Power Lines

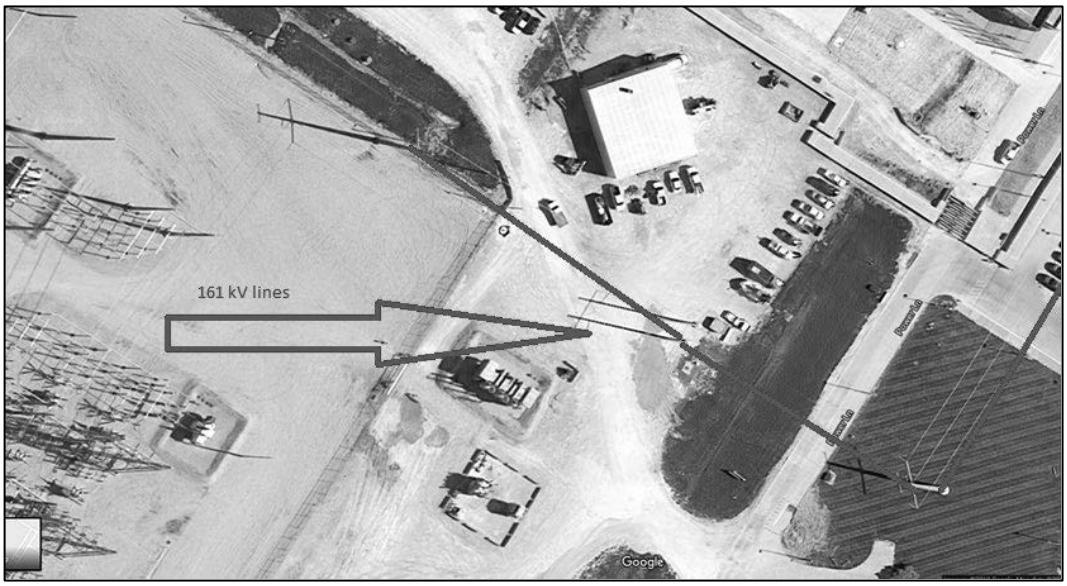
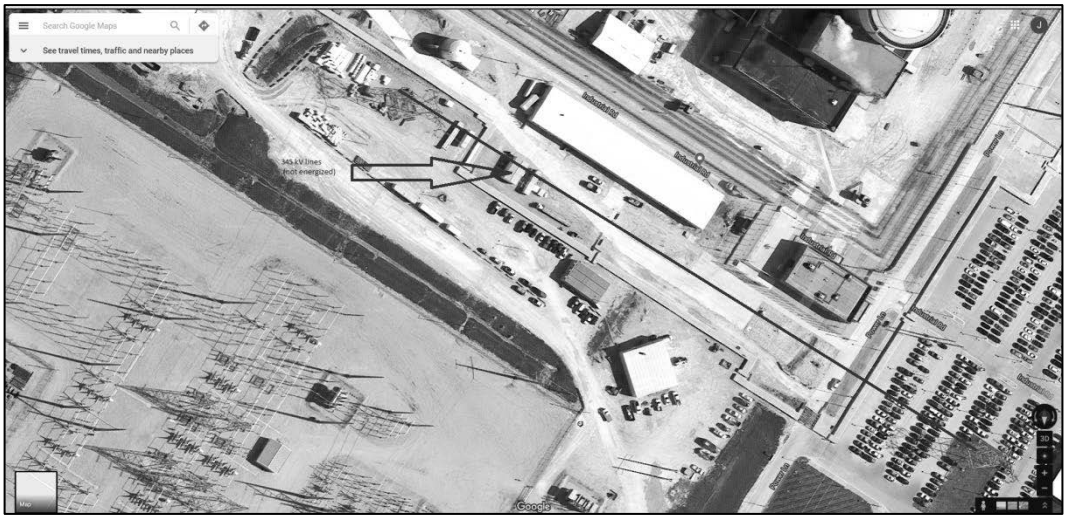


Figure 2 - 345 kV Overhead Power Lines



5.57.2 Overhead power lines are present at FCS. Energized 161 kV overhead power lines are present (see Figure 1 - 161 kV Overhead Power Lines). The 345 kV overhead power lines are not energized (see Figure 2 - 345 kV Overhead Power Lines), however ALL overhead power lines are presumed to be energized and require implementation of the following protocols:

A. Maintain the required clearance distances when work must be performed in locations containing exposed energized overhead power lines or parts that are not guarded, isolated, or insulated.

B. Exercise care when extending metal ropes, tapes, or wires within the minimum approach distances because of induced voltages, the preference is a non-conductive measuring device.

C. Operate any vehicle or mechanical equipment capable of having parts of its structure elevated near exposed energized overhead lines so that a clearance of 10 ft. is maintained for 50 kV or less. If the voltage is higher than 50kV, the clearance shall be increased 4 in. for every 10kV over that voltage. Additional requirements are specified in Reference 6.1.34 – OPPD Safety Manual Section 14: Electrical Work.

5.57.3 Grounding of Equipment

A. Mobile equipment that can elevate and potentially contact overhead lines (e.g., crane, forklift, mobile elevating work platform, etc.) shall be grounded if within 50 feet of the overhead lines.

B. Acceptable grounds shall be determined by the Work Supervisor and OPPD Project Manager.

5.58 Paper Insulated Lead Covered Cables (PILC)

5.58.1 Paper-insulated lead-covered (PILC) cable have been widely used in urban underground network systems and is constructed of copper conductors wrapped with (presumed asbestos) paper, impregnated with dielectric fluid (presumed to contain PCBs). The cable is jacketed with a lead covering to keep out moisture, and may also have a plastic or rubber outer jacket.

5.58.2 It is not definitively known if PILC is present at the Fort Calhoun Nuclear Station. The Work Supervisor will notify Safety if underground electrical cables are uncovered that are suspected to be PILC, or if any electrical cables are observed to be leaking oil.

5.59 Personnel Platforms (§29 CFR 1926.1431)

5.59.1 OSHA allows hoisting personnel with crane or derrick-suspended personnel

platforms (manbaskets) when no safe alternative is possible. Suspended personnel platforms may be utilized to support the Fort Calhoun Deconstruction Project and shall be operated in accordance with Reference 6.1.22 – MA-FC-716-024: Use of Personnel Platforms.

5.59.2 Hoisting personnel by crane shall be considered only after all conventional means of access (e.g. scaffolding, aerial lifts, ladders, etc.) to an elevated worksite have been considered but deemed not feasible or more hazardous.

5.59.3 The use of personnel platforms simply for practicality or convenience reasons is prohibited. Employee safety – not practicality or convenience must determine the choice of method.

5.60 Personal Protective Equipment (PPE) (§29 CFR 1926 Subpart E)

5.60.1 PPE is required at all times on the FCS Decommissioning Project, including visitors, except where a specific PPE Exemption has been issued. PPE is obtained from your Supervisor and shall be used in accordance with Reference 6.1.29 - OPPD Safety Manual Section 108: Personal Protective Equipment.

5.60.2 Required PPE includes:

- Gloves and hearing protection should be with the person at all times and used as appropriate;
- Hardhat, ANSI Z89.1 compliant;
- High-Visibility Vest;
- Protective footwear ASTM F-2413-11 compliant;
- Safety Glasses, including sideshields, ANSI Z87.1 compliant;
- Spikees (also known as ice cleats) if snow and / or ice is present in your travel pathway.

5.60.3 General PPE Requirements

A. Chainsaw usage – PPE required for chainsaw usage includes chaps certified by Underwriter's Laboratories for chainsaw usage, hard hat, faceshield, safety glasses, hearing protection, and protective footwear.

B. Minimizing exposed skin is expected. Sleeved shirts that cover the entire torso area (no half shirts, tank tops, or cut-off sleeves) and long pants are required.

C. Personnel handling chemicals or who may be exposed to chemicals should refer to the chemical Safety Data Sheet (SDS, also referred to as MSDS) for minimum PPE requirements including respiratory protection.

D. Personnel performing Hot Work or who may be exposed to ignition sources shall wear clothing made from 100% natural fiber or are flame-resistant.

E. PPE shall be inspected by the user prior to use; defective or damaged PPE shall be destroyed – or marked indicating they are not approved for use – and then discarded.

F. Specific PPE requirements for work activities will be disseminated via the Task Hazard Assessment / Project Safety Plan, approved Work Package, Pre-Job Briefing, Radiation Work Permit, and/or by direction of the Work Supervisor.

G. Visitors will comply with all PPE requirements.

5.60.4 Faceshields – Faceshields are required to be worn in combination with safety glasses if you are performing work activities that create airborne face and eye hazards.

i	**NOTE** Faceshields are classified as Secondary Protection, and may only be worn in conjunction with Primary Protection (safety glasses). A Z87.1 label or identifier on a faceshield confirms that the faceshield meets the criteria for Secondary Protection, and DOES NOT mean that the faceshield may be worn without safety glasses.	i

5.60.5 Hand Protection (gloves)

A. Everyone should have their gloves with them so that you are prepared if the need for gloves should arise.

5.60.6 Hard Hats

A. Hard Hats worn inside Deconstruction Area buildings shall have a hard hat light (or carry a flashlight) to illuminate dark areas and to aid exiting the building in the event of loss of electrical power.

5.60.7 Hearing Protection

A. Single hearing protection is required where noise levels are ≥85 decibels (nearby operating Heavy Equipment, operation of power tools, etc.).

B. Double hearing protection (earplugs and ear muffs) is required where noise levels are ≥ 100 decibels (e.g., building mechanical demolition with Heavy Equipment, etc.).

5.60.8 High-Visibility Clothing

A. High-visibility clothing is required anywhere onsite except when transitioning to and from your vehicle, upon arriving or leaving site, when in office spaces, entering the Radiologically Controlled Area (RCA), or if a manager or supervisor directs an exception based on safety concerns. For the RCA, you should wear the vest while traversing to the RCA but use the racks for storage while working in the RCA.

5.60.9 Protective Footwear

A. Protective footwear with a leather upper is required for Hot Work.

5.60.10 Safety Glasses

A. All personnel who wear non-ANSI Z87.1 prescription glasses are required to wear an ANSI Z87.1 overglass over their prescription glasses, or wear prescription ANSI Z87.1 glasses whenever protective eyewear is required.

B. Tinted lenses on glasses are prohibited inside any building on the OPPD owner-controlled area. If wearing transition-style lenses, the wearer may proceed into the building when they determine it is safe to do so based on conditions.

C. Spikees (Ice Cleats) are required to be worn on site if snow and / or ice is present in your travel pathway.

D. PPE Exemptions – In specific circumstances, the use of PPE may present a greater hazard than not using the PPE. The Work Supervisor may request a PPE Exemption from Safety using the following guidelines:

1. Requests for PPE exemptions shall not be made based solely on worker comfort.

2. The Work Supervisor has determined that wearing PPE creates a greater hazard or is not feasible.

3. The hazard requiring the PPE has been mitigated.

4. If approved, the Work supervisor shall post a copy of the approved PPE Exemption Request Form at the job site and maintain a copy in the field copy of the work package for the duration of the task covered by the exemption.

5.61 Poly-Chlorinated Bi-Phenyls (PCBs)

5.61.1 Polychlorinated biphenyls are mixtures of up to 209 individual chlorinated compounds (known as congeners). PCBs are either oily liquids or solids that are colorless to light yellow. Some PCBs can exist as a vapor in air. PCBs have no known smell or taste. Many commercial PCB mixtures are known in the U.S. by the trade name Aroclor. PCBs have been used as coolants and lubricants in transformers, capacitors, and other electrical equipment because they don't burn easily and are good insulators. The EPA has classified PCBs as a probable human carcinogen.

5.61.2 PCBs are known or presumed to be present in:

- Caulks
- Electrical Equipment (i.e., cable, capacitors, circuit breakers, electric motors, electromagnets, reclosers, switches, voltage regulators and voltage regulator enclosures)
- Fluorescent light ballasts
- Heat transfer and hydraulic systems
- Paints and coatings
- Transformer oil
- Voltage Regulators

5.62 Potassium Chromates

5.62.1 K_2CrO_4 (Potassium Chromate) and / or $K_2Cr_2O_7$ (Potassium Dichromate) was used as a corrosion inhibitor in the Component Cooling Water (CCW) System and the Turbine Plant Cooling Water (TPCW) System. The use of K_2CrO_4 / $K_2Cr_2O_7$ was discontinued in the 1990's; system flushes were performed to remove the K_2CrO_4 / $K_2Cr_2O_7$ from these systems at that time. Analytical testing has confirmed that K_2CrO_4 / $K_2Cr_2O_7$ from is not present in the CCW cooling water; however, industry experience indicates that the potential for residual K_2CrO_4 / $K_2Cr_2O_7$ as a yellow or white-colored crystalline powder or caked solid exists in dead legs, low-flow areas, and low points of these systems.

5.62.2 If suspected potassium chromate solid residue or powder is identified, implement the protocols identified in Reference 6.1.5 - EnergySolutions Task Hazard Assessment / Project Safety Plan, or contact Safety for guidance.

5.62.3 Pre-Job Briefings

A. Pre-Job Briefings should be performed shiftly for all decommissioning activities to ensure that personnel fully understand how to perform the work activity in a safe manner. The Work Supervisor is responsible for

performing the Pre-Job Briefing with all personnel directly involved in the work activity.

5.63 Railcar Safety

5.63.1 Fort Calhoun will ship radioactive waste produced from the Fort Calhoun Deconstruction Project via railcar to the disposal facility in Clive Utah. A Rail Spur and Waste Handling Containment Structure is being installed to support railcar operations.

5.63.2 When moving railcars around site, the Waste Management Group escorts the railcars. Be aware that even though the railcars are moving slowly around site, they need a lot of space and time to stop. When a railcar approach the road or pedestrian walkway, stop and allow the railcar to pass, as the railcar has the right of way.

5.63.3 Do not step on the rail. Slips due to moisture on the track, uneven footing etc., can lead to accidents/injuries.

5.63.4 Cross rail lines only at designated crossings.

5.63.5 If you are not part of the Waste Management Group, are not supporting waste management activities, or have not attended the day's pre-job brief concerning working around the railcars, then you must remain at least 10-feet distant from all rail sidings. Permission may be obtained from the Waste Management group on a case by case basis.

5.64 Refractory Ceramic Fiber (RCF)

5.64.1 Refractory ceramic fibers (RCF) are used as insulating materials and flame retardants because of their ability to withstand high temperatures. They come in the form of blankets, boards, felts, bulk fibers, vacuum-formed or cast shapes, paper, and textiles. Trade names for RCF-containing products include Cerafiber®, Ultrafelt, Pyro-Blanket, Cerablanket, Cer-Wool, and Kaowool RT, among others.

5.64.2 Products that contain RCF's can release those fibers into the environment when they are pulled apart, stuffed into pipe or cable chases, pulled back out of those areas, or otherwise disturbed. Some of the fibers are small enough to be inhaled deeply into the lungs.

5.64.3 Refractory ceramic fibers have been identified as possibly causing cancer.

5.64.4 Work activities that involve opening refractory ceramic fiber should be performed in accordance with the protocols identified in Reference 6.1.5 - EnergySolutions Task Hazard Assessment / Project Safety Plan, or contact

Safety for guidance.

5.65 Rescue Team

5.65.1 The Work Supervisor should contact Safety if Technical Rescue support may be needed, such as for elevated work activities where self-rescue is not possible in the event of a fall.

5.66 Respiratory Protection (§29 CFR 1910.134)

5.66.1 Respiratory protection may be required for specific work activities. Respiratory protection will be worn only after evaluation of engineering controls and administrative controls as a means of reducing employee exposure.

5.66.2 Respiratory protection shall be worn in accordance with References 6.1.7 – FCSD-RP-802: Respiratory Protection Program and 6.1.43 - OPPD Safety Manual Section 207: Respirators. The specific respiratory protection worn should be selected in accordance with Reference 6.1.64 – OSHA Technical Manual Section VIII: Chapter 2 – Respiratory Protection.

5.66.3 If workers may be potentially exposed to both radiological and non-radiological hazardous atmospheres, then the selection and authorization of respiratory protection will be a consensus decision of the Respirator Program Administrator and Safety.

5.66.4 Voluntary Usage

A. Additional training is required for personnel wearing respiratory protection.

B. Voluntary use of single-use disposable filtering face pieces (dust masks) is permitted with the approval of the Respirator Program Administrator and Safety, in accordance with Reference 6.1.7 - FCSD-RP-802: Respiratory Protection Program.

5.67 Safety Barriers and Postings (§29 CFR 1910.145)

5.67.1 Signs, cones, barriers, or barricades will be used, as appropriate, to prevent inadvertent exposure to, or warn people of, hazards present, or to alert people of pertinent safety-related information in accordance with Reference 6.1.48 - OPPD Safety Manual Section 402: Signs, Cones, Barriers, and Barricades.

5.67.2 “DANGER” signs and/or barricades or barricade tape shall be used where an immediate hazard presents a threat of death or serious injury to workers or

the public.

5.67.3 "CAUTION" signs and/or barricades or barricade tape shall be used where a potential hazard or unsafe practice may present a threat of worker injury.

5.67.4 When barricade tape is used, a sign shall be posted/attached to the tape identifying the following:

A. The person responsible for the job site; AND,

B. The hazards necessitating the use of the barricade tape; AND,

C. The phone number for the person responsible

5.67.5 Personnel shall only cross a "DANGER" tape boundary after having been briefed on the hazards present, and authorized to cross the boundary by the person responsible for the job site.

5.68 Sanitation (§29 CFR 1926.51)

5.68.1 Proper sanitary facilities will be provided for Fort Calhoun employees and contractors. These facilities include:

- Potable water
- Toilets
- Washing facilities

5.69 Scaffolding (§29 CFR 1926 Subpart L)

5.69.1 Scaffolding is used to provide safe access to elevated work areas. Inspections or limited work activities approved by the Work Supervisor may be performed using a ladder to provide safe access to the elevated work area. Work activities that will require more than limited access to the work area, involve the use of power tools, etc., should use a scaffold to provide safe access to the elevated work area. An Aerial Platform and/or scissor lift may also provide safe access to the elevated work area if the acceptable floor loading is sufficient for the additional weight of the Aerial Platform and/or scissor lift.

5.69.2 Scaffolding shall be used in accordance with Reference 6.1.52 - OPPD Safety Manual Section 6: Ladders, Scaffolds, and Scissor Lifts.

5.69.3 Additional training is required for Scaffold Competent Persons, who erect, disassemble, move, repair, maintain, and perform the shiftly scaffold inspection, which is documented on the Scaffold Inspection Tag.

5.69.4 Scaffold Tags

A. Red “Do Not Use” – Scaffold is not approved for use.

i	**NOTE** The absence of a tag is considered the same as a red tag – the scaffold is not approved for use.	i

B. Yellow – The yellow tag signifies the scaffold is safe for use, but may have missing components. Examples could be missing decking or safety rails because of equipment being moved or fixed plant components obstructing their installation. Fall protection may be required as well as other safety requirements as noted on the scaffold tag.

C. Green – Scaffold is approved for use.

5.69.5 All personnel who require access to scaffolding will receive scaffold user training upon hire at NGET and annually thereafter, and are designated as a Scaffold User.

A. Scaffold Users will verify that a yellow or green tag and a Scaffold Inspection Tag are present on the scaffold prior to use.

B. Scaffold Users will also perform a visual inspection of scaffold prior to use. A Scaffold Inspection Tag should be attached to the scaffold to aid this inspection.

C. If scaffold integrity is in doubt, the scaffold will not be used until evaluated by a Competent Person.

5.69.6 Tygon tubing or equivalent means should be installed on exposed scaffold clamp bolt threads to provide impact protection to exposed skin.

5.70 Severe Weather

5.70.1 Severe weather conditions may require the suspension of outdoor work activities. As severe weather approaches, the affected work activity will be placed in a safe condition and immediately cease.

5.70.2 When lightning is visible, and thunder is audible, all Fort Calhoun employees and contractors working outdoors will leave high points (i.e., roofs, ladders, etc.).

A. Personnel in an exposed area (open field, top of a cell, etc.) will go inside a building or an enclosed vehicle with rubber tires.

B. The distance of the lightning from the work area may be estimated by applying a distance of one mile for every five seconds between seeing the lightning and hearing the thunder.

C. Outdoor work activities may resume when lightning and/or thunder has ceased for a minimum of 30 minutes.

D. Personnel should minimize their time spent outdoors if walking to / from buildings and / or the parking lot in severe weather.

5.70.3 Shelter

A. In the event of severe thunderstorm warning, remain inside until threat has cleared.

B. In the event of a tornado warning, you will be given direction to take shelter in the nearest Tornado Shelter (the Admin Building, Training Center, IOF (ISFSI Operating Facility) as well as inside the Plant. Remain sheltered until the threat has cleared.

5.71 Silica

5.71.1 OSHA issued Reference 6.1.58 – OSHA Directive Number CPL 03-00-007: National Emphasis Program – Crystalline Silica in 2008 with two goals: 1) Eliminate employee overexposure to silica, and 2) Control health hazards associated with silica overexposure. Work activities that are potential sources of silica exposure include demolition, drilling, cutting, and scabbling of concrete. Work activities involving silica will be performed in accordance with Reference 6.1.45 - OPPD Safety Manual Section 209: Silica.

5.71.2 Crystalline silica is a basic component of soil, sand, granite, and many other minerals.

5.71.3 Crystalline silica has been classified as a human lung carcinogen. Additionally, breathing crystalline silica dust can cause silicosis, which in severe cases can be disabling, or even fatal.

5.71.4 Contractors performing work activities involving potential silica exposure (e.g., building demolition, concrete scabbling, etc.) will provide their Silica Program, including training, to the Industrial Safety Manager for review and approval, prior to commencing silica work activities.

5.71.5 Silica Engineering Controls include use of shrouded scabbling tools to capture silica dust, water directed at the point of operation to wet down silica dust, and local exhaust ventilation to capture silica dust at the point of generations.

5.72 Site Safety Communications

5.72.1 Communications of safety events shall be made in accordance with Reference 6.1.12 - FCSI-SAF-101: Site Safety Communications.

5.72.2 Immediate Notifications - If an event meets one of the examples listed below, immediately contact the ISFSI Shift Supervisor by dialing 7777# on a site phone, (531) 226-7777 on a cell phone or by using Channel 3 on a handheld radio.

A. Injury to an OPPD employee or contractor that requires First Aid or higher

B. Any fire on OPPD property.

C. Any event that creates a significant safety hazard that requires immediate mitigation (electrical, fall, chemical, etc.).

D. Any chemical spill that requires immediate response.

E. Any condition that may be reportable to the NRC or other Government Agency.

F. For minor issues that do not require First Aid or immediate mitigating actions, the Project Manager or Supervisor should be notified immediately.

G. For chemical and radiological related events, ensure Shift RP/Chemistry Tech is notified by dialing 7172# on a site phone, (531) 226-7172 on a cell phone or by using Channel 3 on a handheld radio.

5.73 Smoking

5.73.1 Smoking, including the use of smokeless tobacco and vaping products are prohibited at all times on the FCS Decommissioning Project and all OPPD property.

5.74 Space (Portable) Heaters

5.74.1 The requirements identified in References 6.1.25 - OP-FC-201-006: Control of Temporary Heat Generating Equipment and 6.1.37 - OPPD Safety Manual Section 1703: Space Heaters shall be followed when using a portable space heater in the workplace.

5.74.2 Prior to use inside a Critical Building, the Work Supervisor shall contact the OPPD Fire Marshall for additional guidance and determination if a Temporary Heat Generating Equipment Permit is required.

5.74.3 Portable Heaters in office areas should never be left turned on when away from workplace. The heater shall be turned off and unplugged when away for lunch or extended periods (e.g. meetings) and at the end of the workday.

5.74.4 Space heaters shall be inspected by a Qualified Electrical Worker prior to initial use and annually thereafter

5.74.5 Electric Portable Heaters shall meet the minimum safety features and be used in accordance with the guidelines found in 6.1.25 - OP-FC-201-006: Control of Temporary Heat Generating Equipment, Attachment 1.

5.74.6 Cylinders for propane heaters shall be used in accordance with 6.1.66 - SA-FC-122: Handling and Storage of Compressed Gas Cylinders / Portable Tanks and Cryogenic Containers / Dewars.

5.75 Stuck Equipment / Vehicles

5.75.1 Performed improperly or without the right equipment, the seemingly simple task of pulling equipment out of the mud or a vehicle with a loaded trailer over a small hump can result in costly damage and, possibly, physical injury or death. Please refer to Reference 6.1.5 - EnergySolutions Task Hazard Assessment / Project Safety Plan for freeing stuck equipment / vehicles, or contact Safety for guidance.

5.76 Task Hazard Analysis / Job Hazard (or Safety) Analysis

5.76.1 Reference 6.1.5 - EnergySolutions Task Hazard Assessment / Project Safety Plan is included in Energy*Solutions* approved Work Packages to identify known or expected hazards and the appropriate controls to reduce or eliminate these hazards.

5.76.2 A Job Hazard Analysis (JHA), also known as a Job Safety Analysis JSA) may also be used to identify known or expected hazards and the appropriate controls to reduce or eliminate these hazards.

5.77 Temporary Heat Generating Equipment

5.77.1 Temporary Heat Generating Equipment includes, but is not limited to, drum heaters, heat lamps, Portable Heaters, shrink tubing guns, glow rings, high power halogen lights, roofing tar buggies, sterno, electric irons used for soldering or brazing, Heat Generating Appliances, etc.

5.77.2 If the equipment is capable of generating temperatures sufficient to ignite the combustible or flammable materials located in the area, or the equipment is capable of generating smoke, fumes, or other products of combustion, then the provisions of Reference 6.1.25 - OP-FC-201-006: Control of Temporary

Heat Generating Equipment are applicable.

5.78 Thermal Stress (Heat and Cold Stress)

5.78.1 Heat Stress

A. The potential for heat stress is primarily in the summer months, working in areas with limited ventilation, wearing of impermeable coveralls, operation of heat-producing equipment, etc.

B. Work activities involving potential heat stress should be performed in accordance with Reference 6.1.39 - OPPD Safety Manual Section 203: Exposure to Hot Environments.

C. Heat stress monitoring should be performed, as required, in accordance with Reference 6.1.60 – OSHA Technical Manual Section III: Chapter 4 – Heat Stress.

D. Drinking water may be provided in Radiologically Controlled Areas (RCA) when allowed by Radiation Protection.

5.78.2 Cold Stress

A. Four factors contribute to cold stress: cold air temperatures, high velocity air movement, dampness of the air, and contact with cold water or surfaces. A cold environment forces the body to work harder to maintain its temperature. Cold air, water, and snow all draw heat from the body. Wind chill is the combination of air temperature and wind speed.

B. Causal Factors – workers are at increased risk when:

1. They have predisposing health conditions such as cardiovascular disease, diabetes, and hypertension.

2. They take certain medication (check with your doctor, nurse, or pharmacy and ask if any medicines you are taking affect you while working in cold environments).

3. They are in poor physical condition, have a poor diet, or are older.

5.79 Tool Safety

5.79.1 Power and hand tools shall be operated in accordance with References 6.1.53 - OPPD Safety Manual Section 7: Hand and Portable Power Tools and will not be used for other than their designed purpose. Important safety requirements include:

5.79.2 All power tools shall be equipped with a three-wire (ground) system and three-pole plug, or be double-insulated. Always inspect the plug to ensure the third (ground) prong has not been cut off when using the three-wire system.

5.79.3 Avoid “line-of-fire” type risks by anticipating what could be struck during the normal course of tool use (e.g., wrenching) or when the tool suddenly slips or breaks free, and use body positioning, alternate tools, and/or teamwork to avoid injury if the tool slips or something (e.g., a bolt) suddenly breaks.

5.79.4 Ensure articles of loose clothing (e.g., sleeves, hoods, draw strings, etc.), long hair, jewelry and lanyards are properly secured and kept away from moving parts.

5.79.5 Inspect tools prior to use. Defective or damaged tools shall be removed from service and not used until repaired by qualified personnel.

5.79.6 Operate power tools or machines in accordance with manufacturer’s instructions. If you are not familiar with the proper operation, then contact your Supervisor.

5.79.7 Power tools should be unplugged or disconnected from the power supply when not in use and if performing maintenance / inspection of the power tool. The triggering device (control switch) shall not be considered an appropriate shut off.

5.79.8 Use the proper tool for the job that is being performed. Makeshift tools or use of a tool beyond its capability is prohibited (i.e., a knife is not a pry bar; scissors are not a knife, etc.).

5.79.9 Chainsaw shall be operated in accordance with Reference 6.1.54 - OPPD Safety Manual Section 803: Chainsaws.

5.79.10 Gasoline-Powered Tools

A. A minimum 20-pound ABC fire extinguisher is required to be available in the area when operating gasoline-powered tools.

B. Do not use gasoline powered tools in confined or enclosed spaces. Ensure exhaust gases do not flow into a confined work area or into the intake of a ventilation unit; contact Safety for assistance.

C. The ignition wire shall be disconnected from the spark plug prior to performing maintenance on any gasoline-powered equipment.

5.79.11 Grinders

A. Grinding wheels, discs, or wire brushes ≥ 2 inches in diameter shall have an installed protective guard.

B. Grinding wheels, discs, or wire brushes shall have a speed rating that meets or exceeds the speed rating of the tool being used.

C. Verify the grinder attachment has come to a complete stop before setting the grinder down.

5.79.12 Impact Sockets

A. Use of a standard socket on an impact wrench is prohibited. Use of a standard socket with an impact wrench could result in the standard socket shattering, sending fragmenting pieces in all directions. This can injure you and the people around you. .

B. Impact sockets are made from a softer, more malleable material designed to handle the torque and flexibility of an impact wrench without the socket failing or shattering.

C. Most impact sockets are dull gray in color or have a black finish that looks like chrome; a standard socket has a shiny chrome finish.

5.79.13 Knives – the improper use of knives can cause serious injury.

A. Box cutters will not be used unless they are designed with self-retracting blades or are the enclosed blade type.

B. Cut-resistant gloves should be worn when using a knife.

C. Fixed blade knives should be sheathed when not in use.

D. Knife blades should be maintained in a sharp condition. A dull blade presents greater risk due to the additional force required to cut through the material.

E. Knives designed so that blades are not exposed should be used for opening boxes or cutting packaging material.

F. Knives will not be used for cutting tie-wraps, cables, or similar objects. Pliers, end cutters, or other “scissor-type” tools should be used for this.

G. Knives should only be used when appropriate and when they are the correct tool for the job.

H. Razor knives should have automatic self-retracting blades.

I. When cutting an object with an open blade knife, ensure object is secure before cutting.

J. When using a knife always cut away from your body. Keep hands out of "line of fire".

5.79.14 Pneumatic tools should have multiple independent restraint methods to prevent the uncontrolled whipping of the air hose in the event of a hose malfunction. These include:

A. Retaining clips (pins) installed as applicable (i.e., Chicago fittings) to prevent inadvertent separation of the hose fittings.

i	**NOTE** Retaining clips are also required for water / fluid hose Chicago fittings to prevent inadvertent separation.	i

B. Safety excess flow valve (air fuse) at the air header connection to secure the air flow of air in the event of a significant increase in air flow, i.e., failed air hose.

C. Whip restraint at each air hose connection and at the tool air hose connection to prevent the uncontrolled whipping of an air hose.

5.79.15 Metal Banding (Band-It)

A. Installing and removing steel straps or banding can be dangerous if not performed with caution and the proper PPE:

- Safety glasses
- Face shield
- Kevlar gloves
- Kevlar sleeves

5.80 Transient Combustibles

5.80.1 Transient combustibles are considered to be any material (gas, liquid, or solid i.e. aerosols, oil, fire retardant wood), not identified and accounted for in the Station's Fire Hazard Analysis (FHA) as fixed loading. Examples of transient combustibles are found on Attachment 1 - Examples of Minor Transient Combustibles.

5.80.2 Prior to moving major transient combustibles that will be left unattended into the plant from normal storage areas, the responsible work group supervisor SHALL obtain approval from the Fire Marshal by completing Attachment A,

Transient Fire Load Permit and following the approval process as specified in Reference 6.1.26 - OP-FC-201-009: Control of Transient Combustible Material.

5.80.3 Lumber and other combustibles (e.g. plastics, tarps, etc.) used in the plant SHALL be fire retardant, except for special applications as approved by the Fire Marshal/designee.

5.81 Two-Minute Drill

5.81.1 A Two-Minute Drill is a human performance tool that can improve a person's situational awareness when first arriving at the job site. A Two-Minute Drill can help the worker develop an accurate understanding of critical indicators, system/equipment condition, the work environment, hazards, and even team members. Taking the time necessary to get acquainted with the immediate work area helps people establish a healthy sense of uneasiness, boosting their questioning attitude and enhancing the accuracy of their situation awareness.

5.81.2 An inspection of the job site (Two-Minute Drill) shall be conducted by employees upon arrival to the job site – prior to the start of work, or upon returning after a break or a shift change.

A. If anticipated hazards are confirmed, or unanticipated hazards are identified, those hazards shall be communicated to other employees in the area – as well as non-employees that may be affected.

B. Actions shall be taken, corresponding to the level of risk, to mitigate the hazards prior to the start of work (e.g., low risk in terms of probability and severity does not require significant actions to be taken).

5.81.3 Everyone should have a Two-Minute Drill card to aid in performing your Two-Minute Drill. Contact your Work Supervisor if you do not have a Two-Minute Drill card.

5.81.4 A post-Two-Minute Drill can be an effective tool implemented prior to leaving your work area. Questions to ask include:

- Did we leave or create any hazards in the area?
- Can someone get hurt?
- Do Safety barriers need to be put in place or need removed?
- How is the housekeeping?

5.82 Vehicles and Transportation

5.82.1 A driver shall not use a phone or mobile device while driving; use hands-free

mode, or a passenger, unless parked.

5.82.2 All vehicles on site (personal or company) shall be operated in a safe manner.

5.82.3 Seat belts are required when driving vehicles (personal or company) at any time on Fort Calhoun Station property.

5.82.4 The maximum speed limit at Fort Calhoun is 25 mph down the Access Road and 10 mph in the parking lots.

5.83 Visitors

5.83.1 All visitors will report to their Fort Calhoun Point of Contact for a Visitor Safety Briefing and issuance of PPE as required.

5.83.2 The Point of Contact or Visitor Escort has responsibility for the accountability of visitors.

5.83.3 Escorts will remain with their visitors at all times inside of the Deconstruction Area, or active work areas outside of the Deconstruction Area.

5.84 Welding

5.84.1 Welding will be performed to support work activities on the FCS Decommissioning Project. Welding shall be performed in accordance with Reference 6.1.55 - OPPD Safety Manual Section 9: Welding, Cutting, and Brazing.

5.84.2 Local exhaust ventilation should be evaluated as an Engineering Control for welding activities in accordance with Reference 6.1.41 - OPPD Safety Manual Section 205: Exhaust Ventilation.

5.85 Wheel Chocks

5.85.1 Wheel chocks are required for numerous applications to prevent inadvertent movement of vehicles. These applications include:

A. When chocking, use specially designed truck wheel chocks of the appropriate size and material to securely hold the vehicle. Don’t use lumber, cinder blocks, rocks, or other make-shift items to chock.

B. All forklifts and wheeled heavy equipment when parked unattended on an incline.

C. Anytime personnel need to enter into or on top of a trailer. The Driver and / or support personnel will verify that personnel are not present in or

on top of a trailer prior to removing the wheel chocks and moving the trailer.

D. Brakes will be set and wheel blocks will be in place to prevent movement of trucks, trailers, or railroad cars while loading or unloading. Fixed jacks may be necessary to support a semitrailer during loading or unloading when the trailer is not coupled to a tractor.

5.86 Winter Safety

5.86.1 Cold weather presents challenges that must be recognized and properly managed to ensure the safety of our employees. Proper control measures include:

A. Be alert for icy patches underneath snow, black ice, or hazards caused by frost.

B. Be cautious when approaching snowplows as snow and windy conditions may limit the snowplow driver's vision with snowy / foggy windows or backup mirrors.

C. Be cautious when walking on ice and snow. Take small steps and keep your body weight centered over your feet; do the "penguin shuffle".

D. Dress properly for cold weather.

E. Ice melt is located in strategic areas. Please use and apply as required in walk areas, and let your Supervisor know if you use the last of the ice melt so that it can be replenished.

5.86.2 Significant accumulations of snow / ice may accumulate on building roofs; presenting a potential dropping hazard to personnel walking / working below. Please look at the building roofs / overhangs in your work / walking areas, if a drop hazard is identified:

A. Notify your Work Supervisor of the drop hazard area.

B. Remain outside the drop hazard area or post barriers to keep personnel out of the drop hazard area until the snow / ice has been cleared off of the roof or establish safety barriers with signs identifying the drop hazard.

C. Sunlight is sufficient to start the melting process. This means that conditions may change on sunny days and that areas that were safe earlier may now present a drop hazard. Continuously evaluate your work / walk areas, don't presume that an area safe in the morning will

remain safe in the afternoon.

D. Spikees / Ice Cleats (slip-on foot traction devices) worn as required in Section 5.60.10C.

5.87 Working at Heights (Fall Protection) (§29 CFR 1926 Subpart M)

5.87.1 Fort Calhoun is committed to provide safe access to elevated work areas to minimize the use of fall protection. The decommissioning process will remove components and structures creating fall hazards that may not been present since construction, requiring thorough evaluation of decommissioning work activities to identify these hazards and implement the proper controls prior to removing the components and structures.

5.87.2 Working at heights shall be performed in accordance with References 6.1.29 - OPPD Safety Manual Section 108: Personal Protective Equipment and 6.1.52 - OPPD Safety Manual Section 6: Ladders, Scaffolds, and Scissor Lifts.

5.87.3 Fall protection is required anytime personnel are working unprotected at heights greater than 6 feet.

5.87.4 The Work Supervisor may develop a Fall Protection Plan in accordance with Reference 6.1.5 - EnergySolutions Task Hazard Assessment / Project Safety Plan to support working at heights requiring the use of fall protection. The Fall Protection Plan identifies:

- Acceptable anchorages
- Identification of the fall hazard
- Rescue Plan
- Specific fall protection equipment to be used
- Task-specific fall protection training at the work location

5.87.5 Fall protection equipment shall be inspected by the user prior to use; defective or damaged fall protection shall be destroyed – or marked indicating they are not approved for use – and then discarded.

5.87.6 Rigging equipment (i.e., slings, wire ropes, etc.) SHALL NOT be used for fall protection.

5.88 Working Over Water (§29 CFR 1926.106)

5.88.1 Working over or near water (i.e., the Crib House, Reactor Cavity, Spent Fuel Pool, etc.) where the danger of drowning exists shall be performed in accordance with Section 106 of Reference 6.1.2 - §29 CFR 1926: Safety and Health Regulations for Construction and requires implementation of the

Buddy System (i.e., no one is alone in a work area that requires a Personal Floatation Device).

5.88.2 U.S. Coast Guard Approved Personal Floatation Devices (PFDs) are required any time personnel are working over or near water, where the danger of drowning exists.

5.89 Zinc

5.89.1 Zinc coating (galvanization) is applied to steel to enhance the longevity and performance of steel. Zinc coatings provide the most effective and economical way of protecting steel against corrosion.

5.89.2 Fort Calhoun work activities will involve disturbance / dismantlement of galvanized steel. Cold demolition methods (i.e., unbolting, shearing, etc.) do not present health risks.

5.89.3 Zinc oxide fumes created by thermal methods (Hot Work) cause flu–like illness called Metal Fume Fever. Symptoms of Metal Fume Fever include headache, fever, chills, muscle aches, thirst, nausea, vomiting, chest soreness, fatigue, gastrointestinal pain, weakness, and tiredness. The symptoms usually start several hours after exposure; the attack may last 6 to 24 hours. Complete recovery generally occurs without intervention within 24 to 48 hours.

6.0 REFERENCES/COMMITMENTS

6.1 References

Compliance with the following references ensures that Fort Calhoun employees and contractors perform their work activities in a manner that is protective of the environment, ensures the safety and health of its employees, contractors, and the general public; and complies with the applicable federal and state regulations; and Fort Calhoun procedures and requirements.

6.1.1 §29 CFR 1910: Occupational Safety and Health Standards

6.1.2 §29 CFR 1926: Safety and Health Regulations for Construction

6.1.3 §40 CFR 61: Subpart M; National Emissions Standards for Asbestos

6.1.4 ACGIH Guide to Occupational Exposure Values (Latest Edition)

6.1.5 EnergySolutions Task Hazard Assessment / Project Safety Plan

6.1.6 EPA 402-K-01-001, March 2001: Mold Remediation in Schools and

Reference Use
FCS Deconstruction Project Health and Safety Plan (HASP)
Pocket Guide 2021

Commercial Buildings

6.1.7 FCSD-RP-802: Respiratory Protection Program

6.1.8 FCSD-RP-JA-900-1: Confined Space Evaluations

6.1.9 FCSI-AD-403: Lockout / Tagout Program

6.1.10 FCSI-EI-100: Employee Concerns Program

6.1.11 FCSI-SAF-100: FCS Site Safety

6.1.12 FCSI-SAF-101: Site Safety Communications

6.1.13 FCSI-SAF-102: Decommissioning Site Emergency Response Plan

6.1.14 FFD-100: Fitness For Duty Program

6.1.15 GM-OI-HE-1: Polar Crane HE-1 Normal Operation

6.1.16 GM-OI-HE-2: Auxiliary Building Crane HE-2 Normal Operation

6.1.17 GM-OI-HE-3: Turbine Room Crane Normal Operation

6.1.18 GM-OI-HE-31: Radwaste Processing Building Crane - Normal Operation

6.1.19 GM-OI-HE-48: South Containment Auxiliary Crane HE-48 Normal Operation

6.1.20 GM-OI-HE-5: Intake Structure Overhead Crane Operation

6.1.21 MA-FC-716-021: Hoisting and Rigging Program

6.1.22 MA-FC-716-024: Use of Personnel Platforms

6.1.23 MA-FC-716-026: Station Housekeeping / Material Condition Program

6.1.24 FCSI-FP-200: Fire Prevention

6.1.25 OP-FC-201-006: Control of Temporary Heat Generating Equipment

6.1.26 OP-FC-201-009: Control of Transient Combustible Material

6.1.27 OPPD Safety Manual Section 10: Compressed Gas

6.1.28 OPPD Safety Manual Section 105: Stop-Work Actions

6.1.29 OPPD Safety Manual Section 108: Personal Protective Equipment

6.1.30 OPPD Safety Manual Section 109: Housekeeping

6.1.31 OPPD Safety Manual Section 11: Control of Hazardous Energy (Lockout / Tagout)

6.1.32 OPPD Safety Manual Section 110: Material Handling and Storage

6.1.33 OPPD Safety Manual Section 12: Confined Spaces

6.1.34 OPPD Safety Manual Section 14: Electrical Work

6.1.35 OPPD Safety Manual Section 15: Excavations

6.1.36 OPPD Safety Manual Section 16: Rigging

6.1.37 OPPD Safety Manual Section 1703: Space Heaters

6.1.38 OPPD Safety Manual Section 201: Hazard Communication

6.1.39 OPPD Safety Manual Section 203: Exposure to Hot Environments

6.1.40 OPPD Safety Manual Section 204: Asbestos

6.1.41 OPPD Safety Manual Section 205: Exhaust Ventilation

6.1.42 OPPD Safety Manual Section 206: Bloodborne Pathogens

6.1.43 OPPD Safety Manual Section 207: Respirators

6.1.44 OPPD Safety Manual Section 208: Hexavalent Chromium

6.1.45 OPPD Safety Manual Section 209: Silica

6.1.46 OPPD Safety Manual Section 308: Industrial Trucks / Forklifts

6.1.47 OPPD Safety Manual Section 309: Cranes, Derricks, Hoisting Equipment

6.1.48 OPPD Safety Manual Section 402: Signs, Cones, Barriers, and Barricades

6.1.49 OPPD Safety Manual Section 504: Emergency Showers and Eye Wash Stations

6.1.50 OPPD Safety Manual Section 505: Fire Protection

6.1.51 OPPD Safety Manual Section 506: Fire Extinguishers

6.1.52 OPPD Safety Manual Section 6: Ladders, Scaffolds, and Scissor Lifts

6.1.53 OPPD Safety Manual Section 7: Hand and Portable Power Tools

6.1.54 OPPD Safety Manual Section 803: Chainsaws

6.1.55 OPPD Safety Manual Section 9: Welding, Cutting, and Brazing

6.1.56 OPPD Safety Manual Supplement C: Underground Lines and Equipment

6.1.57 OPPD Safety Manual, Supplement E: Energy Production and Nuclear Decommissioning

6.1.58 OSHA Directive Number CPL 03-00-007: National Emphasis Program – Crystalline Silica

6.1.59 OSHA Technical Manual Section II: Chapter 1 – Personal Sampling for Air Contaminants

6.1.60 OSHA Technical Manual Section III: Chapter 4 – Heat Stress

6.1.61 OSHA Technical Manual Section V: Chapter 1 – Demolition

6.1.62 OSHA Technical Manual Section V: Chapter 2 - Excavations: Hazard Recognition in Trenching and Shoring

6.1.63 OSHA Technical Manual Section V: Chapter 3 - Controlling Lead Exposures in the Construction Industry: Engineering and Work Practice Controls

6.1.64 OSHA Technical Manual Section VIII: Chapter 2 – Respiratory Protection

6.1.65 SA-FC-121-1000: Heavy Detector Shield and Small Article Monitoring (SAM) Handling

6.1.66 SA-FC-122: Handling and Storage of Compressed Gas Cylinders / Portable Tanks and Cryogenic Containers / Dewars

6.1.67 SA-FC-15-0014: Electrical Safe Work Practices

6.1.68 SA-FC-15-0016: Asbestos Management Plan

6.1.69 SO-G-119: Site Wind Generated Missile Protection Standards

6.1.70 SO-G-61: Rigging Equipment Inspection at Fort Calhoun

6.1.71 SO-G-70: Chemical Control

7.0 RECORDS

None

8.0 ATTACHMENTS/FORMS

8.1 Attachments

8.1.1 Attachment 1 - Examples of Minor Transient Combustibles

Reference Use
FCS Deconstruction Project Health and Safety Plan (HASP)
Pocket Guide 2021

Attachment 1 - Examples of Minor Transient Combustibles

- Brooms and Mops/Mop Buckets
- Buckets (including plastic)
- Cable for Cameras, Temporary Power, etc. (<100 feet)
- Catch Basins
- Chairs (primarily metal)
- Chocking Blocks (including wood)
- Computers
- Configuration Control Devices
- Duct (including plastic)
- Equipment Carts (including composite)
- Extension Cords (<100 feet)
- Fall Protection Harnesses
- FME Covers
- Hand Sanitizer Dispensers
- Head Phones
- Hoses (<=100 feet)
- Ladders (including Fiberglass, Wood)
- Lead Blankets
- Matting and Cribbing for tool and equipment staging areas
- Operator Aid/Alarm Response Binders
- Pads (e.g. absorbent)
- Person Lifts
- Personnel Protective Equipment (Face Shields, Gloves, etc.)
- Postings (e.g. signage, stanchions, flagging, safety cones)
- Rad Bags (including plastic) (less than 5 pounds)
- Rags (less than 10 pounds)
- Rope
- Rubbish/Garbage Cans with Lids (flame tamer type or metal cans with tight fitting self-closing metal covers or metal cans with tight fitting metal covers that are maintained closed)
- Silflex Radiation Shielding (types where the covering meet the smoke and flame spread rating)
- Slings (including synthetic)
- Tables (primarily metal)
- Tape
- Test Equipment
- Tool Bags (e.g. Nylon/Canvas)
- Tubing (e.g. tygon)
- Welding Machines
- Wood (less than 25 pounds)