Lawrence Livermore National Laboratory

Subcontractor Area Hazards Control List (SAHCL)

Work Activity Title: CHAMP Service MTA

Location: ☒ S200 ☒S300 / ☐ Indoor ☐ Outdoor ☒ Both

Building #: All **Work Areas/Rooms:** All

Work Control Document #: 104467 **Date Reviewed:** 1/31/2022

Summary Scope of Work:

Subcontractor to provide procurement and construction management services to replace HVAC systems throughout the DOE/NNSA complex. Subcontractor shall be responsible for the award, administration, and management of lower tiered subcontractors.

- Tasks include:
- Dry side system
- Wet side system
- Control system
- Ancillary system

Subcontractor will use an independent WCD for each task with a site specific SAHCL and JHA.

Required Safety Submittals: ☒ Job Hazard Analysis ☒ Site Specific or Corporate Safety Plan*

Work Activity Level: ☒ B ☐ C

☒ **SAHCL approved for solicitation** **Date Approved:** 1/31/2022

* If already submitted a corporate safety plan within the last two years, and no updates have occurred since submission, there is no need to resubmit a plan.

Acceptance Criteria:

Click or tap here to enter text.

Activity Wide Prerequisites:

Click or tap here to enter text.

Activity Wide Limitations:

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Subcontractor Area Hazards Control List (SAHCL)

Contents

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Location 1: All

☒ Asbestos

Description:

Asbestos Containing Material (ACM) may be present in the following: pipe insulation, sheet rock/taping mud, floor tiles/mastic, gasket materials, duct insulation/wrap and silver paint. Inhalation of asbestos fibers can cause lung disease.

LLNS Control(s)

- ES&H has sampled, results available to subcontractor upon request.
- RI will walk facility with subcontractor to review locations of asbestos-containing materials.
- ES&H to review and approve Subcontractor asbestos work plan
- RHWM to provide appropriate containers for the Subcontractor for friable asbestos.

Subcontractor Control(s)

- Submit ACM abatement work plan to LLNS for approval.
- Execute LLNS approved ACM abatement work plan.
- Identify, segregate, manage and label waste per Division 1 specification.
- Non-friable asbestos is non-hazardous, dispose of per contract.
- Turn over friable asbestos waste to LLNS for disposal

☒ Beryllium

Description:

Beryllium contamination may be present in the work area. Workers can be exposed by working on systems or in facilities that have beryllium contamination.

Waste products are considered hazardous waste.

LLNS Control(s)

- ES&H has sampled, results available to subcontractor upon request.
- RI will walk facility with subcontractor to review locations of beryllium.
- ES&H to review and approve Subcontractor beryllium work plan.

Subcontractor Control(s)

- Submit beryllium work plan to LLNS for approval.
- Execute LLNS approved beryllium work plan.
- Work with LLNS for waste disposal.

☒ Lead

Description:

Lead is present in paint on the surfaces of many LLNS buildings, as well as on or in many other construction materials.

LLNS Control(s)

- ES&H has sampled, results available to subcontractor upon request.
- RI will walk facility with subcontractor to review locations of lead.
- ES&H to review and approve Subcontractor lead work plan.
- RHWM to provide appropriate containers for the Subcontractor.
- Dispose of generated waste.

Subcontractor Control(s)

- Submit lead work plan to LLNS for approval.
- Execute LLNS approved lead work plan.
- Identify, segregate, manage and label waste per Division 1 specification.
- Turn over waste to LLNS

☒ Silica

Description:

Disturbance of concrete or asphalt can result in airborne crystalline silica. Inhalation can cause silicosis and/or lung cancer.

LLNS Control(s)

- RI will obtain an approved penetration permit prior to start of work.

Subcontractor Control(s)

- Include controls specific to silica exposure in their safety submittals (e.g. JHA).

☒ Restricted Access

Description:

Fan exhaust systems associated with chemical or radiological research facilities may emit toxic vapors into the air. A Restricted Roof Access Permit is required prior to performing work in these locations.

Access is restricted due to security requirements.

LLNS Control(s)

- Facility Management to post and confirm all hazardous materials and operations are suspended during restricted roof access.
- Provide security escorts.

Subcontractor Control(s)

- Coordinate all roof access activities with LLNS CM.
- Verify with LLNS CM that roof hazards have been mitigated prior to commencing work.
- Ensure workers are in direct eye contact with escorts at all times.

☒ Fall Hazard

Description:

Parapet walls are below acceptable height.

Subcontractor Area Hazards Control List (SAHCL)

LLNS Control(s)

- ES&H review and approve Subcontractors fall protection plan.

Subcontractor Control(s)

- Submit fall protection plan to LLNS for approval
- Execute LLNS approved fall protection plan.

☒ Metacrylic Roofing Material

Description:

Roofing material may be hazardous due to zinc in metacrylic.

LLNS Control(s)

- ES&H to identify areas where zinc hazards are present and provide subcontractor with a list of those areas.
- Provide waste containers and manage disposal for hazardous waste.

Subcontractor Control(s)

- Segregate any hazardous waste and turn over to LLNS for disposal.

☒ Permit required confined space

Description:

Perform construction and repair activities in an enclosure or space classified as a permit required confined space (PRCS). Certain locations such as tanks, vessels, silos, storage bins, hoppers, vaults, and pits are identified as permit required confined spaces.

LLNS Control(s)

- ES&H has identified a permit required confined space and has the evaluation available to subcontractor upon request.
- ES&H to review and approve Subcontractor confined space work plan.

Subcontractor Control(s)

- Submit confined space work plan to LLNS for approval.
- Execute LLNS approved confined space work plan.
- Include controls specific to confined space entry in their safety submittals (e.g., JHA).

☒ Hidden Utilities

Description:

Hidden or undocumented utilities maybe located in walls, ceilings, floors and in outdoor locations below grade and in concrete slabs. Penetrations into facility surfaces or into the ground, including excavations, without identifying hidden utilities (e.g. natural gas, LCW, compressed air, city water and low and high voltage electrical lines) prior to beginning work can result in injury or infrastructure damage

LLNS Control(s)

- RI is to obtain line locators or scanning reports and any required permits.

Subcontractor Control(s)

- Review and understand scan report and permit.
- Ensure scan reports and permits are accurate according to drawings.
- Any unknown utilities discovered by contractor will be immediately reported to the CM.
- Follow LLNS requirements as identified in Div 1 specifications.
    - When excavation cross or are within a 30-inch radius of a known or located utility, excavations must be done by hand or air knife until reaching the required depth or the utility is located.
    - When the Excavation parallels the located utility, test the proposed route of excavation by potholing every 25 feet prior to starting the excavation. Excavate potholes by hand until reaching the required depth or the utility is located.
    - When making penetrations use safety glasses with side shields and electrical hazard (EH)-rated safety shoes, or dielectric boots. In addition, use class 0 electrical gloves for penetrations where electrical over 50V is known, or suspected and cannot be located.

☒ Hazardous Energy

Description:

Hazardous Energy may be present in moving mechanical parts, exposed energized conductors >50V or where there is the potential for exposure to energized electrical components. This includes the use of lifts in the vicinity of live electrical conductors.

LLNS Control(s)

- ES&H to review and approve Subcontractor LOTO program.
- ES&H to review and approve subcontractors LOTO work plan.

Subcontractor Control(s)

- Submit LOTO program to LLNS for approval.
- Submit LOTO work plan to LLNS for approval.
- Execute LLNS approved LOTO work plan.

☒ Explosives

Description:

Potential Hazards include: Explosives, high explosives, propellants, pyrotechnic or similar energetic materials. The major hazards from explosives are heat, blast, noise, and flying debris or projectiles from unintentional or inadequately controlled ignition, or explosion, of such materials. Potential consequences can include personal injury and property damage.

LLNS Control(s)

- Explosives will be secured and or removed from the work area(s) prior to contractor performing work.
- All hazardous operations in the immediate area where the contractor is performing work, will be stopped for the duration of the job.

Subcontractor Control(s)

- Prior to commencing work in an explosives area verify with the LLNS CM that all explosives hazards have been mitigated.

☒ Radioactive Material

Description:

Surfaces of some LLNS facilities are contaminated with radioactive materials. Storage areas for RAD material, including U, Tritium, Sealed Radioactive Sources (SRS).

LLNS Control(s)

- ES&H has sampled, results available to subcontractor upon request.
- LLNS to review and approve Subcontractor contamination controls and decontamination work plan.

Subcontractor Control(s)

- Review locations and postings with their workers prior to beginning work.
- Submit a written contamination controls and decontamination work plan to LLNS for approval.
- Execute LLNS approved contamination controls and decontamination work plan.
- Utilize calibrated and appropriate meters to verify safe radiation levels for associated work.
- Work with LLNS for waste disposal.

☒ Ionizing Radioactive Materials

Description:

The interior surfaces of some LLNS facilities are contaminated with radioactive materials that emit ionizing radiation. Sources of ionizing radiation include: heat and radio waves, infrared, visible and ultraviolet light, gamma rays, and X rays. Radiation Generating Devices (RGD) are capable of generating ionizing radiation by design (X-ray machines, electron microscopes). Adverse health effects of ionizing radiation include skin burns or acute radiation syndrome when doses exceed safe levels.

LLNS Control(s)

- ES&H has sampled, results available to subcontractor upon request.
- ES&H review and approve Subcontractor contamination controls and decontamination work plan.

Subcontractor Control(s)

- Review locations of contamination with their workers prior to beginning work.
- Submit a written contamination controls and decontamination work plan to LLNS for approval.
- Execute LLNS approved contamination controls and decontamination work plan.
- Utilize calibrated dosimeters to verify safe radiation levels for associated work.
- Work with LLNS for waste disposal.
- Verify with the LLNS CM that the ionizing radiation hazard has been mitigated prior to commencing work.

☒ Non-Ionizing Radioactive Materials

Description:

Non-ionizing radiation (i.e. electromagnetic radiation) is radiation that does not carry enough photon energy to ionize atoms or molecules. Non-ionizing radiation increases the risk of damage to the skin and eyes and its effects are dependent on the energy levels and exposure time. Non-ionizing radiation can cause localized heating, or photochemical reactions can occur with possible permanent harm.

LLNS Control(s)

- RI will coordinate construction activities with Facilities Management and Program Personnel to prevent exposing Subcontractor personnel to non-ionizing radiation hazards.

Subcontractor Control(s)

- Review locations of non-ionizing radiation hazards with their workers prior to beginning work.
- Verify with the LLNS CM that the non-ionizing radiation hazard has been mitigated prior to commencing work.
- Work with LLNS for waste disposal.

☒ Traffic

Description:

Tasks will block/impact roadways and parking lots, and potentially pedestrian walkways.

LLNS Control(s)

- Review and approve subcontractors traffic control work plan.

Subcontractor Control(s)

- Submit traffic control work plan.
- Execute LLNS approved traffic control work plan.

☒ Noise

Description:

Noise levels in the area exceed 85dB

LLNS Control(s)

- None

Subcontractor Control(s)

- Include controls specific to silica exposure in their safety submittals (e.g. JHA).

☒ Environment

Description:

Endangered species and/or nesting bird habitat on or around the work job site.

Nesting bird protection - Most birds including their eggs and active nests are protected by the federal Migratory Bird Treaty Act. If a nest is found in or near the work area, stop work in this area. Do not attempt to move or disturb any nest that is in use. Contact the LLNS CM who will contact an LLNS Wildlife Biologist prior to removing any inactive nest or nest material.

Subcontractor Area Hazards Control List (SAHCL)

LLNS Control(s)

- Wildlife biologist will conduct the required site surveys, monitor work, and ensure compliance with the Biological Opinion prior to and during tasks.

Subcontractor Control(s)

- All workers will be current in the required Environmental training prior to working on site.
- Implement the requirements of the Biological Opinion for this project as directed by the CM.
- Contact LLNL CM if there is wildlife found on or near the project site.
- Open excavations: Protect wildlife from entrapment in steep-walled excavations greater than 1 foot deep.
    - Cover excavations completely at the end of each working day. Whenever possible, bury the edges of the cover (steel plate or plywood) to prevent wildlife access under the cover, or
    - Provide excavations with animal escape ramps constructed of earth fill or wooden planks. Earth ramps should be used whenever possible.
    - Before filling excavations, thoroughly inspect them for trapped animals. Contact the CM to free trapped animals.

☒ Rodent/animal droppings

Description:

Rodent/animal droppings are present in the area. Rodent droppings may contain hantavirus, while bird/bat droppings may contain fungi that cause cryptococcosis and histoplasmosis. Exposure is possible when droppings are stirred into the air and breathed in.

LLNS Control(s)

- none

Subcontractor Control(s)

- Heightened situational awareness

☒ Bees/wasps

Description:

Bees have been identified in the guardrails on the roof.

LLNS Control(s)

- Remove bees prior to NTP

Subcontractor Control(s)

- None

☒ Valley Fever

Description:

While working at Site 300 workers may be exposed to Valley Fever. Valley Fever is a lung infection caused by inhaling spores of the fungus coccidioides immitis. Inhalation of the fungus may occur when dust becomes

airborne by soil-disturbing work or windy weather. The fungus lives in the upper 5-20 cm layer of soil and its incidence increases with periods of dryness after the rainy season. People with weakened immune systems have a higher risk of developing illness (i.e., cancer, HIV, or otherwise immunocompromised, etc.).

LLNS Control(s)

- None

Subcontractor Control(s)

- All workers will be current in the required Valley Fever training prior to working on site.
- Do not generate dust.
    - Exceptions: walking or driving. Roll up vehicle windows and put the ventilation system control in recirculation mode when driving on dirt roads. Let dust settle before exiting the vehicle.
- Do not go to areas where dust is being generated by others. This project will not take place off-road, and is not conducting activities that would generate dust, so risk of Valley Fever is very low.

☒ Co-occupancy

Description:

Other construction projects in the immediate area.

LLNS Control(s)

- none

Subcontractor Control(s)

- Coordinate with LLNL CM for access requirements and schedule

☒ Treated Wood Waste

Description:

Treated Wood Waste (TWW) is generated during removal of old treated wood used in construction (eg for foundational supports, concrete and/or asphalt installation, trailers often used TWW)

LLNS Control(s)

- RHWM to provide appropriate containers for the Subcontractor.
- Provide labels and guidance for TWW
- Dispose of generated waste.

Subcontractor Control(s)

- Identify, segregate, manage and label waste per Division 1 specification.
- Segregate, accumulate and cover TWW on pallets
- Turn over TWW to LLNS
- Refer to 22 CCR 67386.12 for disposal of TWW in California

Subcontractor Area Hazards Control List (SAHCL)

Subcontractor Training Requirements:

☒ DT0095-W, *Site 300 Safety Orientation*; Web-based, 30 min.

Required for all S300 access

☒ EP0026, *Natural Resources Protection at Livermore Site*; Instructor-led, 30 min.

Required for S200 outdoor work

☒ EP0030, *Natural Resources Protection at Site 300*; Instructor-led, 60 min.

Required for S300 outdoor work. An alternative option from EP0026 for S200 outdoor work.

☒ HS0096-W, *Valley Fever Awareness*; Web-based, 30 min.

Required for all S300 access

☒ IN1000, *Contracted Worker Safety Briefing*; Instructor-led, 60 min.

Required for all procured construction projects.