**The Jet Propulsion Laboratory (JPL)/Goldstone Deep Space Communications Complex (GDSCC)**

**Subcontractor Environmental, Health and Safety Plan Requirements – Form 2885G**

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| --- | --- |
| **Legal Company Name /Subcontractor:**    **Subcontract Number:**  **Contract Technical Mgr (Name and contact info):** | **Lower-tier subcontractors included under this plan (if applicable):** |
| **Project Location:**  Goldstone Deep Space Communication Complex  Building/Room/Area  Other (list address): | **Project Duration and Working Hours:** |
| **Subcontractor Onsite Contact Information**  Name:  Phone:  Email: | **Legal Company Name/Subcontractor**  **Emergency Contact Information**  Name:  Phone:  Email: |

The following checked items were identified as relevant to the subcontract. Submit an Environmental, Health and Safety Plan (EHSP) that addresses each of the identified items. It is the Subcontractor’s responsibility to address any safety and health requirements.

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| --- | --- | --- | --- | --- | --- | --- |
|  | **Safety**  **Hazard** | **2885G Section** |  | **Safety**  **Hazard** | **2885G**  **Section** | |
|  | 1) *[Asbestos](#Asbetos1)* | V.1 |  | 13) *[Lifting operations](#Lifting1)* | V.13 | |
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|  | 9) *[Welding/Cutting/Hot work permits](#Welding1)* | V.9 |  | 21) *[Hazardous Waste](#HazardousWaste1)* | V. 21 | |
|  | 10) *[Human Factors (Work-Rest Cycles)](#Human1)* | V.10 |  | 22) *[Solid, Non-Hazardous Waste](#Solid1)* | V. 22 | |
|  | 11) *[Lasers](#Lasers1)* | V.11 |  | 23) *[Soils](#Soils1)* | V. 23 | |
|  | 12) *[Lead](#Lead1)* | V.12 |  | 24) *[Water](#Water1)* | V. 24 | |
|  | Other: | | | | |

**JPL/GDSCC Subcontractor Environmental, Health and Safety Requirements – Form 2885G**

1. **Introduction**

*This document addresses JPL/GDSCC EH&S Requirements and certain legal requirements as applied at JPL/GDSCC.*

Subcontractor agrees as follows:

1. Subcontractor will take all reasonable measures in the performance of the work under this Subcontract to protect the safety and health of Subcontractor’s employees and lower-tier subcontractors, JPL and GDSCC employees, and members of the public who might be affected by Subcontractor’s work.
2. Subcontractor will comply with all JPL/GDSCC-specific environmental, health and safety requirements (“GDSCC EH&S Requirements”) contained within this document.
3. Subcontractor will comply with all applicable federal, state and local laws and regulations.
4. Subcontractor will ensure all lower-tier subcontractors comply with all applicable federal, state and local laws and regulations, Subcontractor’s approved safety and health program, and all JPL/GDSCC EH&S Standards. Subcontractor will include the substance of this document in all lower-tier subcontracts issued under the subcontract.
5. **Documentation**
6. To the extent a subcontract Statement Of Work (SOW) involves tasks to which the requirements in this document apply, Environmental, Health and Safety Plan (EHSP), identifying all tasks, their associated potential hazards, and their prescribed controls, as required by 8 CCR §3203 & §1509, will be submitted. Additionally, the EHSP will be accompanied by the applicable documents described in the sections below. All documents will be provided to the JPL Acquisitions Subcontract Manager and the CTM prior to the commencement of tasks.
7. For construction subcontractors and projects, the GDSCC EHSP template is found under “Supporting Documents” in the “Safety Related” section at: <http://www.jpl.nasa.gov/acquisition/terms-conditions>.
8. In accordance with regulatory requirements and provisions of the subcontract, the Subcontractor agrees to maintain all applicable written EHSP documents and permits at the work location (IIPP, EHSP, Hazard Communication, Confined Space, etc.), along with documentation of employee safety and health training and medical clearances as required by applicable regulations.
9. **Definitions**

* California Code of Regulations (CCR) – California regulations, including, but not limited to those that apply to safety and health. CCR, Title 8 contains California Occupational Safety and Health Administration (Cal/OSHA) requirements; CCR, Title 17 contains California Department of Public Health (CDPH) requirements. The CCR may be accessed online at:
  + Complete CCR: <https://govt.westlaw.com/calregs/index>
* Cal/OSHA: <https://www.dir.ca.gov/dosh/LawsAndRegulations.htm>
* Contract Technical Manager (CTM) – The JPL Contract Technical Manager who represents JPL and manages the technical direction of the subcontract. The CTM also serves as the contact/liaison between the Subcontractor and OSPO.
* Environmental Affairs Program Office (EAPO): The JPL office responsible for validating that GDSCC EHS Department review and inclusion of applicable environmental requirements are addressed in the EHSP developed by the subcontractor.
* Operations and Maintenance (O&M) Contract Manager – The O&M Contract Manager has oversight and overall cognizance of the O&M contract and works closely with the Subcontracts Manager (described below) to manage all facets of the contract. For all JPL-let (issued) contracts at GDSCC, the O&M Contract Manager works closely with the JPL CTM for the Project and GDSCC ESH throughout the duration of the task to address issues that impact the contract.
* Subcontracts Manager (SCM) - The JPL SCM manages the subcontract in all aspects, other than those of a purely scientific or technical nature. Only the JPL Subcontracts Manager has the authority to coordinate the issuance of subcontract modifications. No other individuals have this authority, either formally or informally*.*
* Occupational Safety Program Office (OSPO) – The JPL office and staff validate GDSCC EHS Department review and inclusion of their Safety and Health Requirements.
* Cognizant Development Engineer (CDE) –Provides technical and schedule guidance/consultation to all parties as necessary. This individual may also be the JPL CTM.
* GDSCC Environmental, Safety and Health (ESH) Supervisor – The individual responsible for GDSCC EHS related matters, reviews Subcontractor safety requirements, informs Subcontractor as to safety regulations at GDSCC, provides safety oversight of Subcontractor actions, investigates and prepares reports should a safety related incident occur, and is the liaison with JPL Occupational Safety Office, System Safety Program Office and JPL Environmental Affairs Program Office (EAPO).
* GDSCC Security and Services Manager – The individual who screens, issues clearances and badging for Subcontractor personnel based upon requests and recommendations from the GDSCC Project Technical Representative.
* GDSCC Complex Manager – The individual ultimately responsible for all construction related matters at GDSCC.

1. **General Environmental, Health and Safety Requirements**

Subcontractor agrees as follows:

1. The Subcontractor will provide their employees and subcontractors with the information contained in the EHSP.
2. Emergencies/Incidents and Mishap Reporting
   1. Emergency, first aid, ambulance, and medical services are available at Fort Irwin by dialing the SOD (Supervisor on Duty) Number 333 (or 760-255-8333) and asking for this assistance.
   2. Subcontractor will notify the CTM of all mishaps and close calls and must notify as soon as reasonably possible the OSPO via the Immediate Mishap and Close Call (IMACC) Reporting Line (818) 354-2141.
   3. The Subcontractor shall evacuate at any time upon orders of the senior GDSCC member at the scene via public address system or announcement. If it becomes necessary to evacuate workers from an area due to any emergency, the public address system will give directions for partial or total evacuation, depending upon conditions at the time.
3. Subcontractor has responsibility for the safety of all individuals who enter into the work area (including the CTM and any JPL/GDSCC staff). The Subcontractor understands that neither the O&M Contract Manager nor the CTM is a safety professional. The SCM or CTM will provide Corrective Action Reports (CARs) issued by JPL/GDSCC for non-compliant conditions identified by JPL/GDSCC and affecting JPL/GDSCC or Subcontractor personnel. JPL/GDSCC will provide written notifications of non-compliance for EHS conditions created by the Subcontractor’s operation affecting JPL/GDSCC or Subcontractor personnel. The Subcontractor will immediately address all non-compliant condition(s) and provide documentation to JPL/GDSCC of the actions taken to remedy the non-compliance. The GDSCC EHS Department will make routine inspections for all EHS related issues. Imminent danger situations will result in a stop work order by the GDSCC Complex Manager. If a work stoppage occurs, the task cannot resume until authorization is provided by the GDSCC EHS Supervisor or designee as directed by the GDSCC Complex Manager.
4. If the Subcontractor fails to correct the problem within a reasonable timeframe, the GDSCC EHS Department will provide written notification to the Subcontractor and the JPL CTM. JPL’s OSPO and EAPO will be notified by the JPL CTM.
5. Subcontractor will supply, operate and maintain their own tools, equipment and safety equipment, such as Personal Protective Equipment (PPE).
6. Subcontractor will submit, and wait for acceptance of, any permits required by JPL/GDSCC or any regulatory agency prior to starting that work.
7. Subcontractor will ensure that all precautions are taken to avoid exposure of any persons to any hazards if Subcontractor will perform work in areas where hazards are or might be present.
8. Subcontractor acknowledges that Hazardous Materials Information, relevant to JPL/GDSCC involvement with the project, has been provided as required by the Hazard Communications Standard, 8 CCR §5194. Preapproval of all hazardous materials-related activity must be provided by GDSCC EHS Department or JPL prior to the activity or bringing any hazardous materials on-site.
9. The Subcontractor agrees that EHS requirements compliance is a priority in the performance of work under this Subcontract. As such, a subcontractor employee or affiliate that endangers the safety of any personnel or violates any applicable ordinance, rule or law may be escorted off JPL/GDSCC.

A preconstruction safety orientation meeting must be held with the GDSCC EHS Department prior to start of construction. This meeting shall take place early enough to give the Subcontractor and/or EHS personnel the time to resolve problems and to gain interpretations of orders if necessary. The Subcontractor shall prepare a site-specific Job Hazard Analysis (JHA) for work to be performed. The purpose of a JHA is to minimize accidents through the identification, minimization and/or elimination of potential health and safety hazards and to satisfy California OSHA regulatory requirements pertaining to hazard assessment.

1. **Environmental, Health and Safety Requirements Applicable to Subcontractors**

1. *[Asbestos Containing Material (ACM)](#Asbetos)* [– Subcontractor will consider all building materials that have been historically associated with asbestos as ACM until proven otherwise. GDSCC maintains a database of materials that have been sampled; reports are available upon request for an area or material in question. If any area needs to be sampled, the CTM will work with GDSCC EH&S Supervisor to coordinate sampling.](#Asbetos)

*Note: In general, for non-construction, the Subcontractor Scope of Work should not include the attachment of cabinets, shelves or other equipment or equipment components to floors, walls or ceilings that involves drilling holes, putting in screws or breaching any building components. If acceptance, performance or warranty of the product is contingent on Subcontractor installation, as described here, the Subcontractor will comply with the asbestos requirements below, and provide justification.*

1. Subcontractor will request the CTM provide an asbestos report identifying the specific locations of the ACM prior to cutting, drilling, demolishing walls, floors, or ceilings.
2. If ACM is identified in the respective survey report listed above for materials within the SOW, the Subcontractor must submit an Asbestos Work Plan in compliance with 8 CCR §1529 and subcontractor personnel must be trained to work around asbestos containing materials (ACMs). This requirement includes asbestos abatement subcontractors (Class I & Class II work) and subcontractors who have Class III, Operations and Maintenance (O&M) training, respirator fit testing and medical clearance, who are trained to perform Class III O&M work.
   * 1. All Work Plans for Class I, II, III or IV work will be reviewed by GDSCC EHS Supervisor.
     2. If the Subcontractor will access a ceiling plenum where ACM is present in any amount and a likelihood exists that ACM will be disturbed, the Subcontractor’s Work Plan will provide detailed procedures to be implemented to protect subcontractor personnel and the surrounding areas.
     3. The Work Plan must include detailed procedures for cleanup in the event of an accidental disturbance of ACM.
     4. If performing abatement work, an Asbestos Abatement Work Plan (AAWP) is required prior to start of work.
3. If Subcontractor discovers, during the course of work, unanticipated Presumed Asbestos Containing Material (PACM) and/or suspect ACM, Subcontractor will immediately stop work and immediately notify the CTM and GDSCC Technical POC with information regarding the location and quantity.
   1. When asbestos abatement is performed, prior to tearing down containment, area/clearance air monitoring will be performed by a third party, a State of California, Division of Occupational Safety and Health (DOSH), Certified Asbestos Consultant (CAC), or a DOSH Certified Site-Surveillance Technician (CSST) working under the direct supervision of a CAC.
      * Third party CAC shall provide all reports to the CTM prior to completion of the project, and the CTM will provide a copy to the GDSCC EH&S Supervisor.
   2. All subcontractors performing asbestos related work shall comply with:
      * 8 CCR, Section 1529 Asbestos, and
      * Mojave Desert Air Quality Management District Rule 1000.

1. *[Confined Space Entry](#Confined)*
2. The Subcontractor will obtain a “Confined Space Entry Permit,” FORM-DSN-0496, from the GDSCC EHS Department to allow and control entry into any confined space requiring such permit, in accordance with 8 CCR §5157.
3. Subcontractor will provide 24-hour advance notice to the CTM and O&M Contract Manager prior to scheduling entry into a confined space.

Note: Confined spaces found at GDSCC include, but are not limited to:

* + 1. Manholes
    2. Cooling towers
    3. Ground tanks (underground and above ground)
    4. Underground tunnels
    5. Antenna Shrouds

1. *[Electrical Safety](#Electrical)*
2. The Subcontractor will allow only qualified electrical workers, as defined by Cal/OSHA, holding a valid certification issued by the State of California, to install, repair and modify electrical installations, and wirings. Subcontractor’s qualified electrical workers will have current trainings certification available at the job site for:
   * + 1. NFPA 70E
       2. First Aid
       3. Cardiopulmonary Resuscitation (CPR)
3. The Subcontractor will ensure that all electrical work is performed on de-energized electrical circuits and equipment that are properly Locked and Tagged Out (LOTO).
4. If de-energizing introduces additional or increased hazards, or is infeasible due to equipment design, operational imitations, or maintenance requirements, Energized Electrical Work will be performed by a written “DSN Energized Electrical Work Permit”, FORM-DSN-0177, which is obtained through the GDSCC EHS Department.
5. Electrical subcontractors will submit, as part of the EHSP, an Electrical Safety Plan documenting their electrical safety program that directs activity appropriate to the risk associated with electrical hazards, in compliance with the latest edition of NFPA-70E requirements.
6. The Subcontractor will perform and document Electrical Hazard Analysis before work is performed on live equipment operating at 50 volts and higher such as testing and trouble shooting.
   * 1. Refer to LOTO section of this document for additional requirements.

1. *[Elevated Work – Scaffolds, Ladders, Fall Protection](#Elevated)*
2. The Subcontractor will ensure that all subcontractor personnel whose work exposes them to falling in excess of 6 feet from the perimeter of a structure, unprotected sides and edges, leading edges, through shaft-ways and openings, sloped roof surfaces steeper than 7:12, or other sloped surfaces steeper than 40 degrees and whenever within 15 feet from an unprotected elevated edge, shall wear personal fall arrest, personal fall restraint equipment. Fall protection systems must be approved by the subcontractor’s appointed fall protection qualified person.
3. The Subcontractor fall protection qualified person will utilize the following preferred order of hierarchy of controls when creating the fall protection plan to eliminate or reduce fall hazards:
   * 1. Hazard Elimination (preferred).
     2. Passive Fall Protection (physical barriers like guardrails around unprotected edges and covers over holes are examples of passive fall protection);
     3. Fall Restraint Systems;
     4. Personal Fall Arrest Systems.
4. When fall protection equipment is to be worn, Subcontractor will submit, as a part of the EHSP, a Fall Protection Plan including:
   * 1. A detailed description of work.
     2. Identification of the Cal/OSHA required competent person in fall protection.
     3. A schematic of any fall protection systems, anchors used.
     4. Identification of all fall protection equipment that will be used.
     5. Rescue Plan – If GDSCC’s Emergency Response Team (ERT) will be used as part of the written Rescue Plan, then coordination must be made with the GDSCC ERT prior to the start of work.
5. Subcontractor will ensure that a *competent person* (8 CCR §1671.1) implements the fall protection plan and inspects personal fall arrest systems every six months for wear, damage, and other deterioration, and defective components will be removed from service. Subcontractor personnel wearing fall protection equipment will inspect, prior to each use, looking for wear, damage, and other deterioration, and defective components will be removed from service. Inspections will be made within the prior 6 months per Cal/OSHA. This semi-annual inspection will be denoted on the fall protection equipment inspection tag.
6. Subcontractor will submit a copy of Subcontractor’s current Cal/OSHA permit for all scaffolding (erection or dismantling) over 36 feet.
7. Subcontractor will ensure that a *competent person* (8 CCR §1671.1) inspects all scaffolds daily. Scaffold inspections will be noted on a green inspection tag. Incomplete or defective scaffolds will be red tagged. Identify the appointed scaffold competent person in the EHSP.

1. *[Explosives and Weapons](#Explosives)*
   1. Any explosives directly related to the Subcontract are permitted at GDSCC only when stored and transported in accordance with Army Material Command Munitions Handling Instructions. The GDSCC EHS Department must receive notification of the intent to move explosives on to the Fort Irwin Reservation for use at GDSCC 24 hours in advance of the movement. Appropriate safety instructions will be issued to the Subcontractor at this time.
   2. Weapons are prohibited at the GDSCC Complex.

1. *[Fire Protection Systems](#Fire)*
2. Subcontractor will contact the CTM to work with the GDSCC Facilities Manager or the JPL Authority Having Jurisdiction (AHJ) to turn off, or turn on, the fire protection system. No subcontractor personnel will be permitted to operate a fire protection system other than the GDSCC Facilities Department or a C-16 Licensed contractor under the supervision of the JPL AHJ.
3. Subcontractor will submit a Fire Detection / Suppression Impairment Permit, FORM-DSN-0491, of any impairment of a fire protection system that lasts longer than 8 hours.

1. *[Hazardous Material Use](#Hazardous)* 
   1. Before hazardous materials are brought onsite, the Subcontractor will submit a Chemical/Hazardous Material Request Authorization FORM-DSN-0308 to the GDSCC EHS Supervisor for approval. Subcontractor will also submit two (2) copies of Safety Data Sheets (SDS) for review by the GDSCC EHS Supervisor and two (2) copies for the OSPO. (Note: GDSCC may require the Subcontractor to keep a usage log of chemicals that have regulated usage limits).
2. Subcontractor will immediately report all spills to the CTM and GDSCC EHS Supervisor. If the spill results in an immediate hazard to subcontractor or JPL/GDSCC personnel or property, Subcontractor will call the GDSCC Emergency number (760) 255-8333 or 333 for assistance. Subcontractor will contain and clean up all spills when directed based upon a hazard determination by the GDSCC EHS Department.
3. No tar kettle may be operated unless it is continually attended, has an operating heat indicator or gauge, and has a hand fire extinguisher nearby. The tar kettle must be placed at a safe distance from a hazardous area or other combustible materials.
4. All flammable fluids in drums shall be stored in a safe area as determined by GDSCC EHS Department, be placed on secondary containment pallets, and all drums must be grounded. This area must be posted with proper signs, such as “No Smoking,” etc. Dispensing of flammable and combustible liquids shall be from approved pumps or safety vessels. The area shall be at least 20 feet away from buildings, and 50 feet away from other flammable materials.

1. *[Hearing Conservation](#Hearing)*
   1. Subcontractor will ensure subcontractor employees wear hearing protection in areas with elevated noise levels (>85 dBA).
2. *[Welding, Cutting & Open Flame Hot Work permit (Hot work is any work involving burning, welding, grinding, cutting or similar operations capable of initiating fires or explosions).](#Welding)*
3. Prior to starting any hot work (e.g. welding, cutting, grinding or other hot work), Subcontractor will obtain a *Welding, Cutting & Open Flame Hot Work Permit FORM-DSN-0488* through GDSCC EHS Supervisor with notification to the CM or the CTM.
4. A copy of the Hot Work Permit will be displayed prominently at the work location.
5. Subcontractors are required to have available and provide:
   * 1. Welding blankets
     2. Fire extinguishers
     3. Fire Watchers
     4. Welding Screens
   1. Fire watchers and fire extinguisher users must be trained and comply with CCR Title 8, §4848, Fire Prevention and Suppression Procedure.

e) At each spot where Hot work is performed, workers must be accompanied by a dedicated fire watch provided by the Subcontractor, whose only duty shall be to monitor the work in progress and immediately extinguish incipient fires. The fire watch shall remain at the work location for at least one-half hour after completion of the Hot work.

1. *[Human Factors (Work-Rest Cycles)](#Human)*

As it relates to safety, fatigue and stress may lead to accidents. If Subcontractor personnel will be working greater than 60 hours/week over a two-week period that involves (1) flight hardware and software, test items, or test facilities, (2) on a task that is known to require extended work hours or varying work schedules, and (3) is scheduled and planned in advance, Subcontractor will submit, as part of the EHSP, a Human Factors mitigation plan. The plan must include monitoring of subcontractor personnel, and provide transportation and lodging for persons who are at risk. Any subcontractor personnel on a human factors plan that requires transportation or lodging will be reimbursed for reasonable expenses through their employer.

1. *[Laser Use or Service on Laser Equipment](#Lasers)*
2. Subcontractor will submit, in the EHSP, a Laser Safety Plan if service or use of Class 3B or Class 4 lasers could result in accessible laser radiation.
3. Any outdoor use of open-beam lasers of Hazard Class 3R (3A), 3B or 4 requires an Outdoor Laser Safety Plan, approved by the GDSCC Laser Safety Officer (LSO). The CM or CTM will coordinate with LSO to obtain requirements.

*Note: Most construction lasers (such as levels) are Class 2 and are exempt from this requirement. Similarly, LIDAR instruments that are Class 1 lasers are exempt.*

1. Service of equipment containing Class 3B or Class 4 lasers requires a Laser Safety Plan if interlocks are defeated and hazardous laser radiation is accessible, approved by the LSO. The Laser Safety Plan must include:
   * 1. Description and Location of the equipment.
     2. Description of the service to be provided.
     3. Description of the mitigations that will be used to prevent persons from being exposed to hazardous laser radiation, including temporary barriers, signs and procedures.
     4. Description of Laser Protective Eyewear to be utilized.
     5. If equipment energy source is subject to Lockout/Tagout requirements, refer additionally to the Lockout/Tagout section of this document.
2. Construction of facilities designed for use of Class 4 lasers will be according to plans approved by the GDSCC LSO.

1. *[Lead](#Lead)*

Subcontractor will consider all building materials that have been historically associated with lead paint as Lead Containing Material (LCM) until proven that abrading method will not expose worker to lead as per CCR Title 8 1532.1.

1. Subcontractor will submit, in the EHSP, a Lead Work Plan, to be approved by GDSCC EHS Supervisor. Subcontractor will comply with the lead in construction standard as per CCR Title 8 1532.1.
2. Lead shielding materials must be disposed of according to the Hazardous Waste section in the Environmental requirement section of this document.
3. Installation of lead shielding materials or leaded glass for radiation shielding will be according to a Radiation Shielding Specification, approved by the RSO (see the section on Radiation Sources).

1. *[Lifting Operations and Lifting Permits – Forklifts, Cranes, Hoists](#Lifting)*
2. Subcontractor will submit five business days in advance, in the EHSP, a Lift Plan for any mobile lifting and elevating operations.
3. For any NASA Critical lifts, a Critical Lift form, FORM-DSN-0487, must be completed and submitted no less than 5 days prior to the lift.

*Note: The GDSCC Lifting Devices Equipment Lead (LDEL) will review the Lift Plan for work involving JPL Critical Items (JCI).*

1. Operators of forklifts will be licensed; operators of all lifting equipment, such as boom lifts, etc., will be trained. Records of licenses and training will be available for inspection at the work location.

1. *[Lockout/Tagout (LOTO)](#Lockout)*
   1. For the purposes of lockout/tagout, only black padlocks will be used at the GDSCC Site. Locks will be individually keyed.
   2. Each Lock will be installed along with a standard GDSCC Lockout tag stating “Do Not Operate.”

1. *[Pressure Vessels and Systems](#Pressure)*

a) Any work on Pressure or Vacuum Systems, gas or air lines is subject to review, inspection by the GDSCC Pressure Vessel Lead (PVL). Subcontractor will submit, in the EHSP, a Pressure Systems Work Plan to the PVL.

b) Subcontractor performing work at GDSCC that will involve the use of pressurized gases via compressed gas cylinders to include oxy/acetylene, air compressors, etc. will ensure the following:

1. All compressed gas cylinders will be transported, used, and stored in a vertically upright and secured position in accordance with Cal/OSHA Title 8 of the California Code of Regulations.
2. Air compressors with air receivers brought on site will have a valid/current California Permit in accordance with Title 8, Chapter 4, Subchapter 1, Article 3 of the CCR.

c) All pressure systems brought on GDSCC are subject to inspection by the GDSCC PVL.

1. *[Radiation Sources / X-Ray Use](#Radiation)*
2. For radioactive sources and/or x-ray equipment brought to GDSCC, Subcontractor will:
   * 1. Along with the SOW, a copy of the Subcontractor’s Radioactive Material License or X-Ray Machine Registration Certificate will be made to the CTM for review. Requests will be made at least five business days prior to bringing such materials and/or equipment to GDSCC.
     2. The work will be performed according to any requirements made by the GDSCC Radiation Safety Officer (RSO).
3. The use or service of non-ionizing radiation sources is exempt from the requirement for EHSP, except when the equipment emits radiation above the relevant limits of IEEE C95.1, or FCC limits.
   * 1. Ground-Penetrating Radar is generally considered exempt.

1. Following service on any radiation-emitting source, a radiation survey must be performed, documented and accepted by the RSO or designee prior to acceptance by the CTM.
2. If equipment energy source is subject to Lockout/Tagout requirements, refer additionally to the Lockout/Tagout section of this document.
3. Construction of facilities, rooms or vaults in which radiation sources are to be utilized shall be according to the requirements of a Radiation Shielding Specifications document, approved by the GDSCC RSO.
   * 1. The RSO shall inspect the facility and approve the construction prior to use.

1. *[Seismic Anchoring](#Seismic)*
   1. This requirement applies only to equipment or furniture being installed without a GDSCC Facilities work order.
   2. If equipment meets any of the following criteria, seismic anchoring will be required pursuant to California Building Code, Chapter 16, Section 1613, Earthquake Loads. Example criteria is listed below, but Subcontractor should be aware these examples are not all-inclusive:
      1. Weighs over 400 pounds (lbs.);
      2. Weighs over 20 pounds and the center of mass is four (4) feet above the base;
      3. Is attached to the roof or ceiling

Subcontractor will submit, as part of the EHSP, a description of how the equipment will be seismically anchored.

*Note: for products manufactured in California, subcontractor will additionally offer the ability to anchor the equipment.*

1. *[Transportation and Staging](#Transportation)*
   1. Wheel Blocks for Vehicles. All Subcontractor vehicles except passenger cars and pickup trucks less than 1-ton capacity shall be provided with wheel blocks to prevent unattended vehicles from rolling. It shall be the Subcontractor’s responsibility to instruct all of its employees of this requirement.
   2. Mechanical Equipment Back-Up Alarms. Haulage equipment, including trucks with body capacities of 2-1/2 cubic yards, or more, used to haul dirt, rock, concrete, or other construction material, and self-propelled construction equipment such a graders, which are operated on the project, whether moving alone or in combination, shall be equipped with an independent signal alarm as specified in CAL OSHA Section 3706a.
   3. Parking Areas. The Subcontractor and workers’ vehicles must be parked only in areas designated by GDSCC. All other areas and roadways must be kept clear at all times for normal operations.
   4. Traffic. The Subcontractor shall cooperate in scheduling ingress and egress travel to and from the construction area to minimize traffic congestion.

1. *[Trenches and Excavations](#Trenching)*
2. Subcontractor will review all underground utility drawings with the CM or the CTM prior to any excavation or trenching operations.
3. An Excavation Permit FORM-DSN-0493 shall be requested from the GDSCC EHS Department with one week minimum advanced notice.
4. Subcontractor will submit a copy of its Cal/OSHA Annual Permit and Written Notice to Dig prior to excavating, where applicable.
5. Subcontractor will submit a Trenching and Shoring Plan, as a part of the EHSP, for trenches and excavations deeper than five feet. If a trench or excavation will be deeper than 20 feet, a plan shall be completed and signed by a Professional Engineer (PE) registered in the State of California.
6. During any excavation, if an inadvertent discovery of human remains, funerary objects, sacred objects, or cultural artifacts on GDSCC facilities occurs, excavation must cease immediately. Notification of such inadvertent discovery must be given to the CM and the GDSCC EHS Supervisor immediately following discovery.

1. *[Air Quality](#Air)*
   1. All equipment that emits air pollutants shall be permitted through CARB PERP program. The equipment shall be operated according to the parameters established by the permit at all times.
   2. All fuels used in the completion of the work shall be reported per piece of equipment to the GDSCC Safety Office.
   3. GDSCC is in the Mojave Desert Air Basin and subject to Mojave Desert Air Quality Management District (MDAQMD) regulations; therefore all Subcontractors shall use materials compliant with MDACMD rules and regulations.
   4. Subcontractor will post equipment operating permits as necessary. Contact the GDSCC EH&S Supervisor and JPL CM for any questions regarding proper permitting requirements.
   5. Subcontractor will use MDAQMD compliant paint gun(s). Prior to the use of paint gun(s), contact the GDSCC EH&S Supervisor and JPL CM to ensure the use of paint gun(s) has been approved and/or is appropriate to use.
   6. All paint gun use will be logged and logs will be submitted to the GDSCC EH&S Department per GDSCC EH&S Department requirements.
   7. For stationary source internal combustions engines, Subcontractor shall log beginning and ending hour meter and/or fuel meter readings and submit the log at least monthly to the GDSCC EH&S Supervisor and JPL CM.
   8. No ozone depleting chemicals may be used at GDSCC. For a listing of such chemicals see http://www.epa.gov/ozone/science/ods/classone.html
   9. No NESHAP Halogenated Solvents may be used at GDSCC (i.e.: Carbon Tetrachloride, Chloroform, Methylene Chloride, Perchloroethylene, Trichloroethylene, and 1-1-1-Trichloroethane)
   10. Restricted use of Volatile Organic Compounds (VOC) for cleaning purposes: Subcontractor shall contact the CM and the GDSCC EH&S Supervisor for prior authorization to use any VOC at GDSCC.

1. *[Hazardous Waste](#HazardousWaste)*

*Note: Unless otherwise specified in the Subcontract, at the conclusion of the project Subcontractor shall remove from the site all chemical containers with unused product (Onsite disposal or discharge of partially or completely filled chemical containers is prohibited).*

*Note: EPA ID numbers are “site-specific”. Either the GDSCC EPA ID number must be used or the contactor must obtain a temporary EPA ID number for this site.*

* 1. Subcontractor will coordinate with the CM and the EAPO Hazardous Waste Program for approval of any hazardous waste onsite accumulation, transport or disposal. Subcontractor is responsible for off-site disposal of hazardous waste at the direction of the GDSCC Supervisor.
  2. Subcontractor is responsible for properly segregating hazardous waste. Subcontractor will maintain onsite hazardous waste containers in a manner that is compliant with the Resource Conservation and Recovery Act (RCRA), and applicable State laws.
  3. Subcontractor will supply their own D.O.T. compliant containers for hazardous waste accumulation and transport.
  4. Subcontractor will ensure onsite hazardous waste containers are kept indoors (or covered if outside) and closed at all times except when adding waste to the container.
  5. Subcontractor-generated hazardous waste will be shipped by an EAPO Hazardous Waste Program-approved hazardous waste transporter to an EAPO Hazardous Waste Program-approved treatment/storage/ disposal facility (TSDF) when the quantity limitation (1 quart of extremely hazardous or 55 gal of hazardous waste) is reached, or within nine (9) months of the waste accumulation start date, whichever occurs first.
  6. Subcontractor will prepare Hazardous Waste transport and disposal documentation (i.e.: Manifests, Land Disposal Restriction Forms and Profiles), and send copies of the draft documents to the EAPO Hazardous Waste Program for approval at least 72 hours prior to scheduled transport. Only the GDSCC EHS Supervisor or designee has the authority to sign manifests for loads of hazardous waste or extremely hazardous waste.
  7. Subcontractor will manage all empty hazardous materials containers greater than five (5) gallons, and empty extremely hazardous waste containers, as hazardous waste.
  8. Waste Fluorescent light tubes will be boxed, and given to the Resource Conservation/Recovery Technician.

1. *[Solid and Non-Hazardous Waste (i.e., Non-Friable ACM, Construction Waste, etc.)](#Solid)* 
   1. Subcontractor will not use GDSCC solid waste containers for disposal of any waste without prior approval from the GDSCC EHS Department. Disposal of solid waste is the responsibility of the Subcontractor. Subcontractor will procure a waste container for solid waste they generate and arrange for its disposal.
   2. Subcontractor will prepare Non-Hazardous Waste Manifests and Profiles, and send copies of the draft documents for approval to the GDSCC EHS Supervisor at least 72 hours prior to scheduled transport. Only the GDSCC EHS Supervisor or designee has the authority to sign manifests for loads of non-hazardous waste from GDSCC.
   3. Construction Waste – During the planning stage, the Subcontractor will consider local recycling and salvage operations that could process site-related waste. Unless JPL agrees that markets or onsite recycling opportunities do not exist, the Subcontractor will recycle or salvage at least 50 percent of construction, demolition and land-clearing waste, excluding soil.
   4. Subcontractor will ensure the proposed disposal facility is permitted to accept the waste being shipped. The disposal facility will be approved by JPL EAPO prior to shipment.
   5. Subcontractor may dispose of scrap metal in the GDSCC scrap metal roll-off bin.
   6. Subcontractor may dispose of cardboard in the GDSCC cardboard roll-off bin.

1. *[Soils](#Soils)*
   1. If during excavation an unusual odor or color is detected in the soil, Subcontractor will stop work and contact the CM and the GDSCC EHS Supervisor for resolution.
   2. Onsite excavated soil piles must be covered by plastic unless exempted by the GDSCC EHS Department.
   3. Subcontractor will not discharge any paint or other contaminated rinse water onto soils in or adjacent to GDSCC.

1. *[Water (Surface and Industrial Wastewater)](#Water)*
   1. There will be no discharges of liquid or solid waste materials onto land or water within the boundaries of GDSCC or Fort Irwin.
   2. The subcontractor at no time will wash any chemicals into any drain a GDSCC, sewer or storm drain.