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

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

|  |  |
| --- | --- |
| **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 were identified as relevant to your Scope of Work.**

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Safety**  **Hazard**  Introduction\*  General Safety\*  Communicable Disease Transmission\*  [Documentation and Additional General Safety\*](#DocumentationAndAdditionalGeneralSafety)  [Definitions\*](#Definitions) | **2885G Section** |  | **Safety**  **Hazard** | **2885G**  **Section** |
|  | 1) *[Asbestos](#Asbetos1)* | VI.1 |  | 13) *[Lifting operations](#Lifting1)* | VI.13 |
|  | 2) *[Confined Space](#Confined1)* | VI.2 |  | 14) *[Lockout/Tagout](#Lockout1)* | VI.14 |
|  | 3) *[Electrical Safety](#Electrical1)* | VI.3 |  | 15) *[Pressure Vessels](#Pressure1)* | VI.15 |
|  | 4) *[Elevated work](#Elevated1)* | VI.4 |  | 16) *[Radiation Sources](#Radiation1)* | VI.16 |
|  | 5) *[Explosives and Weapons](#Explosives1)* | VI.5 |  | 17) *[Seismic Anchoring](#Seismic1)* | VI.17 |
|  | 6) *[Fire Protection Systems](#Fire1)* | VI.6 |  | 18) *[Transportation and Staging](#Transportation1)* | VI.18 |
|  | 7) Chemicals/[*Hazardous Material Use*](#Hazardous1) | VI.7 |  | 19) *[Trenching and Excavation](#Trenching1)* | VI.19 |
|  | 8) *[Hearing Conservation](#Hearing1)* | VI.8 |  | 20) *[Air Quality](#Air1)* | VI.20 |
|  | 9) *[Welding/Cutting/Hot work permits](#Welding1)* | VI.9 |  | 21) *[Hazardous Waste](#HazardousWaste1)* | VI. 21 |
|  | 10) *[Human Factors (Work-Rest Cycles)](#Human1)* | VI.10 |  | 22) *[Solid, Non-Hazardous Waste](#Solid1)* | VI. 22 |
|  | 11) *[Lasers](#Lasers1)* | VI.11 |  | 23) *[Soils](#Soils1)* | VI. 23 |
|  | 12) *[Lead](#Lead1)* | VI.12 |  | 24) *[Water](#Water1)* | VI. 24 |
|  | Other: |  |  | 25) [Biohazardous/Medical Waste](#BiohardousMedicalWaste) | VI.25 |
|  | *\* The Introduction, General Safety, and Communicable Disease Transmission sections, apply to all services.* | | | | |
|  |  | | | | |

1. **Introduction**

*This document addresses JPL/GDSCC EHS 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 EHS 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 GDSCC EHS Requirements. Subcontractor will include the substance of this document in all lower-tier subcontracts issued under the Subcontract.
5. The Subcontractor will provide their employees and subcontractors with the information contained in the Safety and Health Plan (SHP).

*Note: This document addresses GDSCC EHS Requirements and certain legal requirements as applied at GDSCC.*

1. **General Safety**

Subcontractor agrees as follows:

1. 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 911 (or 760-255-8911) and asking for this assistance.
   2. Subcontractor will notify the Contract Technical Manager (CTM) of all mishaps and close calls, and must notify the OSPO via the Immediate Mishap and Close Call (IMACC) Reporting Line (818) 354-2141 as soon as reasonably possible after learning of the mishap or close call, but no later than 8 hours thereafter.
   3. Subcontractor must 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.
2. [**Communicable Disease Transmission**](#IntroGeneralCommunicableDisease)
3. Subcontractor will comply with applicable communicable/infectious disease requirements issued by the San Bernardino County Department of Public Health.  For the latest state and county requirements, visit [Cal/OSHA](https://www.dir.ca.gov/title8/3205.html), [County of San Bernardino Public Health](http://www.publichealth.lacounty.gov/media/Coronavirus/guidances.htm) and [California Department of Public Health](https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Immunization/nCoV2019.aspx).
4. Subcontractor will ensure that all of its employees review the JPL COVID-19: Safe at Work Training Video available at <https://acquisition.jpl.nasa.gov/terms-conditions/> under Supporting Documents.
5. An employee of Subcontractor is not to report to on-site work at any GDSCC location/facility if such employee has one of the following symptoms (not associated with a known chronic health condition): fever, chills, cough, shortness of breath or chest tightness, sore throat, nasal congestion/runny nose, myalgia (body aches), loss of taste and/or smell, diarrhea, nausea, or vomiting. If an employee of Subcontractor experiences any of the aforementioned symptoms while working onsite, such employee is to notify their JPL onsite resource, inform their employer, and go home immediately.
6. JPL adheres to all applicable local, state, and federal requirements. Subcontractor will follow these requirements as well as related policies, guidelines, and directives issued by JPL leadership. GDSCC updates its physical distancing, building occupancy, health attestation, and face covering requirements at all locations/facilities as conditions evolve. All badged and non-badged visitors will be required to follow the Safer Federal Workforce Taskforce’s COVID-19 Workplace Safety: Guidance for Federal Contractors and Subcontractors. <https://www.jpl.nasa.gov/stateofthelab/>
7. Non-badged visitors will be required to complete a Certification of Vaccination for Covid-19 in order to gain access to GDSCC which may be found at <https://acquisition.jpl.nasa.gov/terms-conditions/> under Supporting Documents.
8. **Documentation and Additional General Safety**
9. To the extent a Subcontractor Statement Of Work (SOW) involves tasks to which the requirements in this document apply, Subcontractor will submit an SHP, identifying all tasks, their associated potential hazards, and their prescribed controls, as required by California’s Injury and Illness Prevention Program (IIPP) regulations 8 CCR § 3203 and § 1509. Additionally, the SHP will be accompanied by the applicable documents described in the sections below. All documents will be provided to the JPL Acquisitions SCM and the CTM prior to the commencement of tasks.
10. 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>.
11. In accordance with regulatory requirements and provisions of the Subcontract, Subcontractor agrees to maintain all applicable written SHP documents and permits at the work location (IIPP, SHP, Hazard Communication, Confined Space, etc.), along with documentation of employee safety and health training and medical clearances as required by applicable regulations.
12. Subcontractor is responsibile for the safety of all individuals who enter into the work area (including the CTM and any JPL/GDSCC staff). 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 Subcontractor with written notifications of non-compliance for EHS conditions created by the Subcontractor’s operation affecting JPL/GDSCC or Subcontractor personnel. Upon receipt, 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 the GDSCC Complex Manager's issuance of a stop work order. If a work stoppage occurs, Subcontractor cannot resume the task until GDSCC EHS Manager or designee as directed by the GDSCC Complex Manager provides authorization to do so.
13. If Subcontractor fails to correct the non-compliant conditions within a reasonable timeframe, the GDSCC EHS Department will provide written notification of such failure to correct to the DSN Safety POC and the JPL CTM. The JPL CTM will notify JPL’s OSPO and EAPO of such failure to correct.
14. Subcontractor will supply, operate and maintain their own tools, equipment and safety equipment, such as Personal Protective Equipment (PPE).
15. Subcontractor will submit, and wait for acceptance of, any permits required by JPL/GDSCC or any regulatory agency prior to starting that work.
16. Subcontractor will ensure that all precautions are taken to avoid exposure of any persons to any hazards when Subcontractor is performing work in areas where hazards are or might be present.
17. 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 premises.
18. Subcontractor must hold a preconstruction safety orientation meeting with the GDSCC EHS Department prior to start of construction. This meeting shall take place early enough to give Subcontractor and/or JPL OSPO or EAPO personnel time to resolve problems and to gain interpretations of orders, if necessary. 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 Cal/OSHA regulatory requirements pertaining to hazard assessment. The JHA will be reviewed by the GDSCC EHS Department and submitted to the DSN Safety POC.
19. **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 the SHP developed by the Subcontractor addresses the GDSCC EHS Department review, and includes applicable environmental requirements.
* 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 Department 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 SCM 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 OSPO and staff are responsible for validating the GDSCC EHS Department review and ensuring inclusion of their Safety and Health Requirements.
* DSN Safety Point of Contact (POC) – The DSN Safety POC is the representative responsible for overseeing that applicable safety precautions are engineered into the DSN products and/or facilities from inception through delivery, and through operations.
* 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, Health and Safety (EHS) Manager – The GDSCC EHS Manager is the individual responsible for GDSCC EHS related matters, including reviewing Subcontractor safety requirements, informing Subcontractor as to safety regulations at GDSCC, providing safety oversight of Subcontractor actions, investigating and preparing reports should a safety related incident occur, and acting as the liaison to the JPL OSPO, System Safety Program Office and JPL EAPO.
* GDSCC Environmental, Health and Safety (EHS) Office – The GDSCC EHS Office is the staff and resources that conduct the environment and safety activities under the direction of the GDSCC EHS Manager.
* GDSCC Security and Services Manager – The individual who screens, and 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.
* GDSCC Technical Point of Contact (POC) – The GDSCC Technical POC is the individual at GDSCC with knowledge and expertise with regard to the facility or system that relates to the subcontract work being performed.

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

**Submit a Safety/Health Plan that addresses each of the identified items checked off on page 1, per the JPL Subcontractor Environmental, Health, and Safety Requirements – Form 2885G. It is the Subcontractor’s responsibility to identify and address any safety and health requirements.**

1. *[Asbestos Containing Material (ACM)](#Asbetos)* [– Subcontractor will consider all building materials that have been historically associated with asbestos as ACM until proven otherwise. If any area needs to be sampled, it will be coordinated with the CTM and GDSCC EHS Manager.](#Asbetos) *Note that subfloor areas under raised computer floor tiles have been found to contain ACM. Entry into subfloors is prohibited without the proper training and respiratory protection.*

*Note: In general, for non-construction, the Subcontractor SOW 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 ACM requirements below, and provide justification.*

1. Subcontractor will request the CTM to provide an asbestos report identifying the specific locations of the ACM prior to cutting, drilling, or demolishing walls, floors, or ceilings.
2. If ACM is identified in the respective survey for materials within the SOW, Subcontractor must submit an Asbestos Abatement Work Plan in compliance with 8 CCR § 1529 and Subcontractor personnel must be trained to work around 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 operations and maintenance work.
   * 1. All Work Plans for Class I, II, III or IV work will be reviewed by OSPO and the GDSCC EHS Manager.
     2. If Subcontractor will access a ceiling plenum where ACM is present in any amount and a likelihood exists that ACM will be disturbed, Subcontractor’s Work Plan will provide detailed procedures to be implemented to protect Subcontractor personnel and the surrounding areas.
     3. Subcontractor’s Asbestos 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 GDSCC EHS Department. The GDSCC EHS Department will notify the CTM, OSPO and GDSCC Technical POC with information regarding the location and quantity of PACM and/or suspect ACM.
   1. When asbestos abatement is performed, prior to tearing down containment, area/clearance air monitoring will be performed by a third party; either 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.
      * The CAC shall provide all reports to the CTM prior to completion of the project, and the CTM will provide a copy to the OSPO and GDSCC EHS Manager.
   2. When performing asbestos related work, Subcontractor shall comply with:
      * 8 CCR § 1529; and
      * Mojave Desert Air Quality Management District Rule 1000.

**Subcontractor Response:**

JPL is looking for additional information surrounding why the hazard is applicable and how Subcontractor will mitigate the hazard.

Accept Description: Click or tap here to enter text.

Not Applicable Explain (required if N/A): Click or tap here to enter text.

1. *[Confined Space Entry](#Confined)*
2. 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 GDSCC ESH Department and CTM 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; and
    5. Antenna shrouds.

**Subcontractor Response:**

JPL is looking for additional information surrounding why the hazard is applicable and how Subcontractor will mitigate the hazard.

Accept Description: Click or tap here to enter text.

Not Applicable Explain (required if N/A): Click or tap here to enter text.

1. *[Electrical Safety](#Electrical)*
2. Electrical subcontractors who are performing construction-type work must employ 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 training certifications available at the job site for:
   * + 1. NFPA 70E;
       2. First Aid; and
       3. Cardiopulmonary Resuscitation (CPR).
3. Subcontractor will ensure that all electrical work is performed on de-energized electrical circuits and equipment that are properly Locked and Tagged Out (LOTO) if applicable.

LOTO does not apply to plug and cord-connected electrical equipment if the plug is under the exclusive control of the employee performing the service or maintenance. Exclusive control means in the physical possession of the employee, or in arm's reach and in line of sight of the employee.   
  
Note: Refer to Lockout/Tagout (LOTO) section of this document for additional requirements.

1. If de-energizing introduces additional or increased hazards, or is infeasible due to equipment design, operational limitations, or maintenance requirements, Subcontractor will perform Energized Electrical Work under a written “DSN Energized Electrical Work Permit”, FORM-DSN-0177, which is obtained through the GDSCC EHS Department.
2. Electrical subcontractors will submit, as part of the SHP, 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.
3. Subcontractor will perform and document Electrical Hazard Analysis before work is performed on live equipment operating at 50 volts or higher, such as testing and troubleshooting.
   * 1. Refer to LOTO section of this document for additional requirements.

**Subcontractor Response:**

JPL is looking for additional information surrounding why the hazard is applicable and how Subcontractor will mitigate the hazard.

Accept Provide hazard mitigation description: Click or tap here to enter text.

Not Applicable Explain (required if N/A): Click or tap here to enter text.

1. *[Elevated Work – Scaffolds, Ladders, Fall Protection](#Elevated)*
2. 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, 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 or personal fall restraint equipment. Fall protection systems must be approved by the Subcontractor’s appointed fall protection qualified person.
3. The Subcontractor’s 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 SHP, 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, and anchors used;
     4. Identification of all fall protection equipment that will be used; and
     5. Rescue Plan – If GDSCC’s Emergency Response Team (ERT) will be used as part of the written Rescue Plan, then Subcontractor must coordinate 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; inspects personal fall arrest systems every six months for wear, damage, and other deterioration; and removes defective components from service. Subcontractor personnel wearing fall protection equipment will inspect, prior to each use, looking for wear, damage, and other deterioration, and such personnel will remove defective components 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 to the JPL DSN Safety POC with a copy to the GDSCC EHS Department.
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. Subcontractor will identify the appointed scaffold competent person in the SHP.

**Subcontractor Response:**

JPL is looking for additional information surrounding why the hazard is applicable and how Subcontractor will mitigate the hazard.

Accept Description: Click or tap here to enter text.

Not Applicable Explain (required if N/A): Click or tap here to enter text.

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. Subcontractor will provide to the GDSCC Security Department a notification of the intent to move explosives on to the Fort Irwin Reservation for use at GDSCC a minimum of 14 days in advance of the movement. Appropriate safety instructions will be issued to the Subcontractor at that time.
   2. Weapons are prohibited at GDSCC.

**Subcontractor Response:**

JPL is looking for additional information surrounding why the hazard is applicable and how Subcontractor will mitigate the hazard.

Accept Description: Click or tap here to enter text.

Not Applicable Explain (required if N/A): Click or tap here to enter text.

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, for any impairment of a fire protection system that lasts longer than 8 hours.

**Subcontractor Response:**

JPL is looking for additional information surrounding why the hazard is applicable and how Subcontractor will mitigate the hazard.

Accept Description: Click or tap here to enter text.

Not Applicable Explain (required if N/A): Click or tap here to enter text.

1. *Chemicals/*[*Hazardous Material Use*](#Hazardous)
   1. Before chemicals/hazardous materials are brought onsite, the Subcontractor will submit a Chemical/Hazardous Material Request Authorization, FORM-DSN-0308, to the GDSCC EHS Manager for approval. Subcontractor will also submit Safety Data Sheets (SDS) for review by the GDSCC EHS Manager and OSPO. (Note: GDSCC may require the Subcontractor to keep a usage log of chemicals that have regulated usage limits). 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 and JPL OSPO and EAPO prior to the activity or bringing any hazardous materials onsite.
2. Subcontractor will immediately report all spills to the CTM and GDSCC EHS Manager. If the spill results in an immediate hazard to Subcontractor or JPL/GDSCC personnel or property, Subcontractor will call the GDSCC Emergency number (760) 255-8911 or 911 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 the GDSCC EHS Department, be placed on secondary containment pallets, and all drums must be grounded. Such storage 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 storage area shall be at least 20 feet away from buildings, and 50 feet away from other flammable materials.

**Subcontractor Response:**

JPL is looking for additional information surrounding why the hazard is applicable and how Subcontractor will mitigate the hazard, i.e., include how the material will be used, scale of use (quantity used, duration, frequency), if there is potential impact to building/location occupants (odors/dust/etc.) and mitigations.

Accept Description: Click or tap here to enter text.

Not Applicable Explain (required if N/A): Click or tap here to enter text.

1. *[Hearing Conservation](#Hearing)*
   1. Subcontractor will ensure that Subcontractor employees wear hearing protection in areas with elevated noise levels (>82 dBA).

**Subcontractor Response:**

JPL is looking for additional information surrounding why the hazard is applicable and how Subcontractor will mitigate the hazard.

Accept Description: Click or tap here to enter text.

Not Applicable Explain (required if N/A): Click or tap here to enter text.

1. *[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)*
2. 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 the GDSCC EHS Manager with notification to the CTM and DSN Safety POC.
3. A copy of the Hot Work Permit will be displayed prominently at the work location.
4. Subcontractors are required to have available and provide:
   * 1. Welding blankets;
     2. Fire extinguishers;
     3. Fire watchers; and
     4. Welding screens.
   1. Fire watchers and fire extinguisher users must be trained and comply with 8 CCR § 4848, Fire Prevention and Suppression Procedure.
5. At each location where hot work is performed, workers must be accompanied by a dedicated fire watch provided by the Subcontractor. The dedicated fire watch’s 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.

**Subcontractor Response:**

JPL is looking for additional information surrounding why the hazard is applicable and how Subcontractor will mitigate the hazard.

Accept Description: Click or tap here to enter text.

Not Applicable Explain (required if N/A): Click or tap here to enter text.

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 on work that (1) involves flight hardware and software, test items, or test facilities, (2) is 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 SHP, 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 mitigation plan that requires transportation or lodging will be reimbursed for reasonable expenses through their employer.

**Subcontractor Response:**

JPL is looking for additional information surrounding why the hazard is applicable and how Subcontractor will mitigate the hazard.

Accept Description: Click or tap here to enter text.

Not Applicable Explain (required if N/A): Click or tap here to enter text.

1. *[Laser Use or Service on Laser Equipment](#Lasers)*
2. Subcontractor will submit, in the SHP, 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, reviewed by the GDSCC Laser Safety Officer (LSO) and approved by the JPL LSO. The CTM will coordinate with JPL 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 approved by the JPL LSO if interlocks are defeated and hazardous laser radiation is accessible. 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; and
     5. If equipment energy source is subject to LOTO requirements. For LOTO requirements, refer to the LOTO section of this document.
2. Construction of facilities designed for use of Class 4 lasers will be according to plans approved by the JPL LSO.

**Subcontractor Response:**

JPL is looking for additional information surrounding why the hazard is applicable and how Subcontractor will mitigate the hazard.

Accept Description: Click or tap here to enter text.

Not Applicable Explain (required if N/A): Click or tap here to enter text.

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, per 8 CCR § 1532.1.

1. Subcontractor will submit, in the SHP, a Lead Work Plan, to be reviewed by the GDSCC EHS Manager and approved by the JPL DSN Safety Representative. Subcontractor will comply with the lead in construction standard (8 CCR § 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 JPL Radiation Safety Officer (RSO) and reviewed by GDSCC RSO (see the Radiation Sources section of this document).

**Subcontractor Response:**

JPL is looking for additional information surrounding why the hazard is applicable and how Subcontractor will mitigate the hazard.

Accept Description: Click or tap here to enter text.

Not Applicable Explain (required if N/A): Click or tap here to enter text.

1. *[Lifting Operations and Lifting Permits – Forklifts, Cranes, Hoists](#Lifting)*
2. Subcontractor will submit five business days in advance of the activity, in the SHP, a Lift Plan for any mobile lifting and elevating operations.
3. For any NASA Critical Lifts, Subcontractor must submit a GDSCC Critical Lift form, FORM-DSN-0487, no less than five business 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) and approval will be by the JPL LDEM.*

1. Subcontractor will ensure that operators of forklifts are properly licensed. Operators of all lifting equipment, such as boom lifts, etc., are trained according to manufacturer’s recommendations and approved for operation by the Subcontractor. Records of licenses and training will be available for inspection at the work location.

**Subcontractor Response:**

JPL is looking for additional information surrounding why the hazard is applicable and how Subcontractor will mitigate the hazard.

Accept Description: Click or tap here to enter text.

Not Applicable Explain (required if N/A): Click or tap here to enter text.

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.”

**Subcontractor Response:**

JPL is looking for additional information surrounding why the hazard is applicable and how Subcontractor will mitigate the hazard.

Accept Description: Click or tap here to enter text.

Not Applicable Explain (required if N/A): Click or tap here to enter text.

1. *[Pressure Vessels and Systems](#Pressure)*
   1. Any work on Pressure or Vacuum Systems, gas, or air lines, is subject to review, inspection and certification by the JPL Pressure Systems Manager (PSM). Subcontractor will submit, in the SHP, a Pressure Systems Work Plan to the CTM that includes:
      1. scope of work;
      2. type of operations;
      3. listing of pressure equipment (e.g., air compressors, gas cylinders, etc.);
      4. procedures for de-pressurizing equipment if necessary; and
      5. any testing conducted to verify work.
   2. 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. Required air compressors with air receivers brought on site with volumes greater than 1½ cubic feet (11.2 gallon) shall require a valid/current California Permit in accordance with Title 8, Chapter 4, Subchapter 1, Article 3 of the CCR.
2. Work involving modification or welding to ASME pressure vessels, vacuum vessels, or piping shall only be conducted in accordance with appropriate ASME BPVC or B31.3 code requirements. Welding Performance Schedules (WPS), Weld Performance Qualifications (WPQ), Performance Qualification Records (PQR) must be submitted to the JPL PSM for review and approval prior to welding tasks.
3. Subcontractor will ensure that all pressure systems work is performed on de-energized/de-pressurized pressure lines and equipment, and the pressure source is properly LOTO. Please refer to the LOTO section of this document for additional details.
   1. Prior to the start of work, pressurized components including regulators shall be fully vented (both upstream and downstream) to ambient pressure.
4. Pressure/leak testing of piping shall be recorded, indicating system design pressure and test pressure.

**Subcontractor Response:**

JPL is looking for additional information surrounding why the hazard is applicable and how Subcontractor will mitigate the hazard.

Accept Description: Click or tap here to enter text.

Not Applicable Explain (required if N/A): Click or tap here to enter text.

1. *[Radiation Sources / X-Ray Use](#Radiation)*
2. For radioactive sources and/or x-ray equipment to be used at GDSCC, Subcontractor will:
   * 1. Provide, along with the SOW, a copy of the Subcontractor’s Radioactive Material License or X-Ray Machine Registration Certificate for the CTM to review. Requests will be made at least five business days prior to bringing such materials and/or equipment to GDSCC.
     2. Perform the work according to any requirements made by the JPL RSO.
3. The use or service of non-ionizing radiation sources is exempt from the requirement for a SHP, 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. If equipment energy source is subject to LOTO requirements, refer additionally to the LOTO section of this document.
2. Construction of facilities, rooms or vaults in which radiation sources are to be utilized shall be performed according to the requirements of a Radiation Shielding Specifications document, reviewed by the GDSCC RSO and approved by the JPL RSO.
   * 1. The JPL RSO shall inspect the facility and approve the construction prior to use.

**Subcontractor Response:**

JPL is looking for additional information surrounding why the hazard is applicable and how Subcontractor will mitigate the hazard.

Accept Description: Click or tap here to enter text.

Not Applicable Explain (required if N/A): Click or tap here to enter text.

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 that 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.
   3. Subcontractor will submit, as part of the SHP, 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.*

**Subcontractor Response:**

JPL is looking for additional information surrounding why the hazard is applicable and how Subcontractor will mitigate the hazard.

Accept Description: Click or tap here to enter text.

Not Applicable Explain (required if N/A): Click or tap here to enter text.

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 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 8 CCR § 3706.
   3. Parking Areas. Subcontractor’s 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. Subcontractor shall cooperate in scheduling ingress and egress travel to and from the construction area to minimize traffic congestion.

**Subcontractor Response:**

JPL is looking for additional information surrounding why the hazard is applicable and how Subcontractor will mitigate the hazard.

Accept Description: Click or tap here to enter text.

Not Applicable Explain (required if N/A): Click or tap here to enter text.

1. *[Trenches and Excavations](#Trenching)*
2. Subcontractor will review all underground utility drawings with 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 SHP, 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 and submitted to the DSN Safety POC with a copy to the GDSCC EHS Manager.
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 DSN Safety POC the GDSCC EHS Manager, and EAPO immediately following discovery.
7. Where oxygen deficiency (atmospheres containing less than 19.5% oxygen) or a hazardous atmosphere exists or could reasonably be expected to exist, such as in excavations in landfill areas or excavations in areas where hazardous substances are stored nearby, Subcontractor shall complete a Confined Space Entry Permit ,FORM-DSN-0496, and shall test the atmospheres in the excavations before employees enter excavations greater than 4 feet in depth. Test results should be documented in the GDSCC Confined Space Entry Permit, FORM-DSN-0496, which accompanies the Excavation Permit. PIOP-DSN-250.15.

**Subcontractor Response:**

JPL is looking for additional information surrounding why the hazard is applicable and how Subcontractor will mitigate the hazard.

Accept Description: Click or tap here to enter text.

Not Applicable Explain (required if N/A): Click or tap here to enter text.

1. *[Air Quality](#Air)*
   1. All equipment that emits air pollutants shall be permitted through the CARB Portable Equipment Registration Program (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 EHS Office.
   3. GDSCC is in the Mojave Desert Air Basin and subject to Mojave Desert Air Quality Management District (MDAQMD) regulations; therefore all Subcontractors will use materials compliant with MDAQMD rules and regulations.
   4. Subcontractor will post equipment operating permits as necessary. Contact the GDSCC EHS Manager and JPL EAPO for any questions regarding proper permitting requirements.
   5. Subcontractor will use MDAQMD compliant paint guns. Prior to the use of any paint guns Subcontractor will contact the GDSCC EHS Manager and JPL DSN Safety POC or EAPO to ensure the use of paint guns 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 EHS Department per GDSCC EHS 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 EHS Manager and JPL EAPO.
   8. No ozone depleting chemicals may be used at GDSCC. For a listing of such chemicals see <https://www.epa.gov/ozone-layer-protection/ozone-depleting-substances>
   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. Use of Volatile Organic Compounds (VOC) for cleaning purposes is restricted. Subcontractor shall contact the EAPO and the GDSCC EHS Manager for prior authorization to use any VOC at GDSCC.

**Subcontractor Response:**

JPL is looking for additional information surrounding why the hazard is applicable and how Subcontractor will mitigate the hazard.

Accept Description: Click or tap here to enter text.

Not Applicable Explain (required if N/A): Click or tap here to enter text.

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”. The Subcontractor must obtain a temporary EPA ID number for this site.*

* 1. Subcontractor is responsible for hazardous waste onsite accumulation, transport and off-site disposal.
  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 a Subcontractor -approved hazardous waste transporter to a Subcontractor-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 documents to EAPO.
  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 GDSCC Resource Conservation/Recovery Technician.

**Subcontractor Response:**

JPL is looking for additional information surrounding why the hazard is applicable and how Subcontractor will mitigate the hazard.

Accept Description: Click or tap here to enter text.

Not Applicable Explain (required if N/A): Click or tap here to enter text.

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 it generates and will arrange for its disposal.
   2. Subcontractor will prepare Non-Hazardous Waste Manifests and Profiles, and send copies of the documents to EAPO.
   3. Construction Waste – During the planning stage, 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 Subcontractor 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.

**Subcontractor Response:**

JPL is looking for additional information surrounding why the hazard is applicable and how Subcontractor will mitigate the hazard.

Accept Description: Click or tap here to enter text.

Not Applicable Explain (required if N/A): Click or tap here to enter text.

1. *[Soils](#Soils)*
   1. If during excavation an unusual odor or color is detected in the soil, Subcontractor will stop work and contact the EAPO, the GDSCC EHS Manager and OSPO 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 or Fort Irwin.

**Subcontractor Response:**

JPL is looking for additional information surrounding why the hazard is applicable and how Subcontractor will mitigate the hazard.

Accept Description: Click or tap here to enter text.

Not Applicable Explain (required if N/A): Click or tap here to enter text.

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. Subcontractor at no time will wash any chemicals into any drain at GDSCC, or any sewer or storm drain.

**Subcontractor Response:**

JPL is looking for additional information surrounding why the hazard is applicable and how Subcontractor will mitigate the hazard.

Accept Description: Click or tap here to enter text.

Not Applicable Explain (required if N/A): Click or tap here to enter text.

1. [*Biohazardous/Medical Waste*](#BiohardousMedicalWaste)
2. Subcontractor is responsible for segregating, transporting, and disposing of biohazardous/medical waste off-site.
3. Subcontractor will prepare a biohazardous/medical waste plan and send a copy of the plan to EAPO.
4. Subcontractor will maintain onsite biohazardous/medical waste containers in a manner that is compliant with the California Department of Public Health and applicable state laws.

**Subcontractor Response:**

JPL is looking for additional information surrounding why the hazard is applicable and how Subcontractor will mitigate the hazard.

☐ Accept                    Provide hazard mitigation description:         Click or tap here to enter text.

☐ Not Applicable       Explain (required if N/A):  Click or tap here to enter text.