Subcontractor Name:       Project Title and Subcontract Number:

Description of planned activities/tasks for the scope-of-work for the entire project.

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| Hazard / Regulatory Requirements | ES&H Clause | Worker Information and Requirements |
| Cryogenics29 CFR 191049 CFR 173 | Seller shall ensure that pressurized containers that contain cryogenic material are protected with multiple pressure-relief devices. Seller shall store, ship and handle cryogenic liquids in containers that are designed for the pressures and temperatures to which they may be subjected. Seller shall ensure that Dewar flasks, which should be used for relatively small amounts of material, have a dust cap over the outlet to prevent atmospheric moisture from condensing and plugging the neck of the tube. Dewar flasks shall not be used for extended periods of time without completely emptying the dewar. Prolonged use can lead to accumulation of explosive liquid oxygen. Seller shall not fill cylinders and other pressure vessels used for storage and handling of liquefied gases to more than 80% of capacity to protect against possible thermal expansion and bursting of the vessel. If it is possible that the temperature of the cylinder may increase to above 30 degrees C (86 degrees F), 60% of capacity shall be the limit. Seller shall ensure that unprotected body parts do not contact uninsulated vessels or pipes that contain cryogenic liquids. Appropriate eye and face protection shall be used when transferring cryogenic liquids | Workers shall ensure they are experienced and trained to perform the assigned work with cryogenic liquids.Workers shall ensure they use containers approved and rated for cryogenics and work in well-ventilated areas.Workers shall routinely inspect cryogenic containers and systems and use containers in accordance with manufacturer specifications. Workers shall ensure they wear personal protective equipment specified in the AHA and implement other controls in the AHA to mitigate exposures to cryogenic hazards.In the event of an emergency, contact the LSS office at 865.576.4577 |

**Subcontractor Activity Hazard Analysis (AHA)**

| Activity | Hazard | Controls |
| --- | --- | --- |
|       |       | **Elimination, substitution, engineering controls**:[ ]  HEPA-Filtered vacuum cleaner [ ]  Laboratory hood or glove box [ ]  Air Handler, HEPA filtered [ ]  Shrouded tool with HEPA filter [ ]  Continuous wetting (dust control) [ ]  Containment[ ]  Isolation [ ]  General Ventilation [ ]  Other Local Exhaust System:      Other: Specify below      |
| **Administrative controls** (work methods, training, medical, etc.):      |
| **Personal protective equipment** - specify the exact type of PPE (e.g. hearing protection device with minimum NRR of 20 dBA, Ansell Nitrile SOL-VEX gloves, etc.):      |

AHA Author:       Date:

ES&H/QHSP Representative Concurrence signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_

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| Technical Procurement Officer (TPO) signature indicates approval of activity-specific hazard controls identified in the subcontractor AHA. Printed Name/Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_  |