

**Stanford Synchrotron Radiation Laboratory
Stanford Linear Accelerator Center**

Technical Specification IS-444-400-32-C0

**Removal of SPEAR II Equipment and Systems
&
Installation of SPEAR III Mechanical Equipment**

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DIVISION 1

GENERAL REQUIREMENTS

The following Specification broadly outlines the requirements for the removal of SPEAR II Equipment and Systems and the installation of SPEAR III Mechanical Equipment

SECTION 01100 - STATEMENT OF WORK

Location

Perform the work outlined in this specification at the Stanford Linear Accelerator Center, 2575 Sand Hill Road, Menlo Park, San Mateo County, California, at Building 100 SPEAR Storage Ring Housing.

Scope of Work

This Specification broadly outlines the requirements to decommission and remove SPEAR accelerator hardware consisting of concrete girders, electro magnets, cabling, vacuum vessels, and other miscellaneous items from the SPEAR ring tunnel.

The purpose of this specification is to describe the intended results of the work for the removal of SPEAR II Equipment and Systems and the installation of SPEAR III Mechanical Equipment. The Subcontractor shall provide all labor, specified materials, and equipment to perform the following work in accordance with Attachment 1, Site Map, and as described in Specification Section 0110-1.1 Facility Descriptions and Extent of Work. The work will be divided into two distinct Work Elements as described below.

Phase 1: Remove SPEAR II Equipment and Systems.

Phase 2: Install SPEAR III Mechanical Equipment.

On site work shall commence on April 7, 2003 and all Phase 1 work shall be completed by April 28, 2003 . Phase 2 shall commence on July 28, 2003 and all work shall be completed no later than August 28, 2003.

The Subcontractor is required to provide employees who are experienced in performing the work required under the existing conditions for this project. The subcontractor shall provide a full-time job superintendent who shall be an employee of the subcontractor, who shall be at the job site whenever work is being performed by any other, and shall not have responsibility for any other projects.

Other safety measures necessary for the preservation of life and/or property shall be implemented by the Subcontractor to provide a workplace free from recognized hazards that may cause or are likely to cause death or serious injury.

1.1 Phase 1 – Remove SPEAR II Equipment and Systems

Description of Work: Removal of SPEAR II Equipment and Systems.

- Project Kick-off Meeting and Walk down.
- Mobilization - See Specification Section 02000-2.1, Controls.
- Removal of SPEAR II Equipment and Systems - See Specification Section 02000-2.1, Controls, and Appendix 2.
- Development of Work Documents - See Specification Section 02000-2.2, Controls.
- Comply with all environmental, safety and health regulations and requirements in the handling, transportation and disposal SPEAR II equipment and systems - See Specification Sections 02000-2.1 and 2.2 Controls.

1.2 Phase 2 – Install SPEAR III Mechanical Equipment.

Description of Work: Install SPEAR III Mechanical Equipment

- Project Kick-off Meeting and Walk down.
- Mobilization - See Specification Section 02000-2.1, Controls.
- Removal of SPEAR II Equipment and Systems - See Specification Section 02000-2.1, Controls, and Appendix 3.
- Development of Work Documents - See Specification Section 02000-2.2, Controls.
- Comply with all environmental, safety and health regulations and requirements in the handling, transportation and disposal SPEAR II equipment and systems - See Specification Sections 02000-2.1 and 2.2 Controls.

SECTION 01110 - JOB CONDITIONS

1.0 Bidders may not rely solely on information provided in the Statement of Work. The Subcontractor shall verify all information in the field prior to bid. General Terms and Conditions for Fixed Price Subcontracts and Purchase Orders will have precedence over this Statement of Work.

1.1 Facility Descriptions and Extent of Work

1.2 Hazards

Known hazards are described in the table shown below:

<u>Hazard</u>	<u>Activity</u>	<u>Responsible</u>
Asbestos	Not present	n/a
PCBs	Not present	n/a
Lead	Remove lead bricks	University
Radiation	Survey equipment	University
Torch cutting	Permit, PPE	Subcontractor

SECTION 02000 - CONTROLS

2.0 General Requirements/Controls

- A. Contacts: The Subcontractor's point of contact for technical aspects of the Subcontract is the University Technical Representative. All correspondence is to be directed to the Contract Administrator.

- B. Federal, State and Local License: The Subcontractor is required to provide employees who are experienced in performing the work required under the existing conditions for this project. All employees shall have the level of education, experience and training requisite for the efficient and safe carrying out of their subcontract tasks. Proof of certification for required training or experience shall be available at the work site for review by the University Technical Representative. Only employees qualified by training or experience shall be permitted to operate equipment or machinery.

- C. Subcontractor Safety

Safety and Health Designee: A Supervisor having the authority to act as a representative for the Subcontractor shall be on the job at all times during the course of the work being performed. The Subcontractor shall designate one of its employees who will have overall responsibility for the safety program, who will have stop work authority, and who is authorized to serve as the Subcontractor's contact for safety issues. This includes, but is not limited to:

- a. Correct unsafe conditions and practices.
- b. Perform daily job site safety and health inspections, documenting (in a logbook) the dates of the inspections, findings, observations and corrective actions. SLAC Jobsite Checklist may be used.
- c. Investigate all accidents/incidents assuring the availability of all information, personnel, and data pertinent to the investigation. The University and the Department of Energy may perform additional investigations.
- d. Prepare and submit required safety related submittals.
- e. Maintain an up-to-date listing (inventory) of all chemicals on the project site, including the appropriate Material Safety Data Sheets (MSDS).
- f. Ensure all employees have received Hazard Communication training for the chemicals they may use, or may be exposed to in a reasonably foreseeable emergency as required by 29 CFR 1926.59.
- g. Ensure appropriate spill control measures will be utilized at all work locations, including spill response equipment, which will be inspected and documented monthly.
- h. Ensure all work locations are maintained in a neat and orderly manner. Housekeeping shall be conducted at a minimum of once daily.

The Safety and Health designee shall be trained and experienced in the abatement and mitigation of the potential hazards anticipated during performance of the work elements, i.e. ladder safety, hoisting and rigging safety, fall protection, electrical safety, construction, etc.

Personnel Protective Equipment: The Subcontractor shall provide all Personnel Protective Equipment (PPE) required for each specific operation. (Head protection, eye protection, ear, foot, etc. All employees working near, or spotting for heavy equipment shall wear high visibility vests with reflected properties for work being conducted at night.

Fire Protection System: All fire protection systems in the work area are inactive, including sprinkler, fire alarm, and detection systems. All fire extinguishers have been removed from the work areas. The Subcontractor shall provide fire extinguishers in all occupied areas during performance of the work. Type, size, and placement of fire extinguishers shall comply with National Fire Protection Agency (NFPA) 10, Standard for Portable Fire-Extinguishers. Combustible materials that may be used during performance of the work shall be kept to a minimum. Storage of excess combustibles and general materials in the buildings shall be in accordance with provisions established in Articles 11 and 87 of the UFC.

The Subcontractor shall provide proper storage facilities for materials not immediately in use. The use of flammable and combustible liquids shall comply with the NFPA-30, Flammable and Combustible Liquids Code, Subpart H of OSHA, and Article 79 of the UFC. The Subcontractor shall maintain all egress points in accordance with Subpart E of 29 CFR 1910, Article 12 (Maintenance of Means of Egress and Emergency Escapes) of the Uniform Fire Code (UFC), and National Fire Protection Agency (NFPA)-101, Life Safety Code.

- D. Emergency Response: The Subcontractor must provide sufficient communication devices; i.e. cell phones. Emergency situations on site shall be communicated by calling 9-911. In the event of a Subcontractor emergency, the University may assume control of the situation. The Subcontractor shall follow response directions provided by the University Site Emergency Response Organization. All fires shall be reported to the University Technical Representative, including those that are extinguished without causing damage.
- E. Accident Investigation: In the event that an emergency or accident occurs, the Subcontractor shall fully comply with any investigation conducted by the University, or lead regulatory agency, at no additional cost to the University.

If an accident occurs, the following shall be verbally reported immediately to the University Technical Representative.

- a. All work related accidents involving employee injury/illness and/or property damage. University form SU-17 must be completed.

- b. All work related spills (including fuels and lubricants).
- c. All work related near miss type accidents that may result in a serious injury/illness and/or property damage.

F. Project Management (Scheduling/Meetings): The University will provide the following notices to the Subcontractor:

Removal of SPEAR II Equipment and Systems:

- a. Notice-to-Proceed with development of work documents.
- b. Notice of document compliance.
- c. Notice to initiate mobilization activities.
- d. Notice to initiate demobilization activities.

Installation of SPEAR III Mechanical Equipment:

- a. Notice-to-Proceed with development of work documents.
- b. Notice of document compliance.
- c. Notice to initiate mobilization activities.
- d. Notice to initiate demobilization activities.

The following meetings will be held as directed by the University Technical Representative. Meetings will be held to discuss Subcontract required submittals (see Specification Section 2.4, Submittals/Control Documentation for specific requirements).

Work Element 1: Removal of SPEAR II Equipment and Systems

- a. Removal of SPEAR II Equipment and Systems Kick-off Meeting and Walkdown: This will be conducted one week after award of the Subcontract.
- b. Removal of SPEAR II Equipment and Systems PWHAF Review Meeting: The Subcontractor shall conduct a review meeting one week after deliverable submittal.
- c. Removal of SPEAR II Equipment and Systems Progress Meeting: The Subcontractor shall conduct a progress meeting each week and present an updated schedule, status of activities, and recovery actions.
- d. Daily Toolbox Meetings: The Subcontractor shall conduct daily pre-work meetings, (normally 5 to 15 minutes) to discuss safety in general, the planned activities for the day, the hazards involved, and associated controls that will be implemented to protect employees. An outline of topics covered and signed attendance rosters shall be provided to the UTR at the end of each week.
- e. Notifications: In addition to these meetings, the University Technical Representative shall be notified in writing one week before transporting any chemicals, propane, and/or compressed gas cylinders on-site.

Work Element 2: Installation of SPEAR III Mechanical Equipment:

- a. Installation of SPEAR III Mechanical Equipment Kick-off Meeting and Walkdown: To be conducted 1 week prior to initiation of installation activities.
 - b. Installation of SPEAR III Mechanical Equipment PWHAF Review Meeting: The Subcontractor shall conduct a review meeting one week after deliverable submittal.
 - c. Installation of SPEAR III Mechanical Equipment Progress Meeting: The Subcontractor shall conduct a progress meeting each week and present an updated schedule, status of activities, and recovery actions.
 - e. Daily Toolbox Meetings: The Subcontractor shall conduct daily pre-work meetings, (normally 5 to 15 minutes) to discuss safety in general, the planned activities for the day, hazards involved, and associated controls that will be implemented to protect employees. An outline of topics covered and signed attendance roster shall be provided to the UTR at the end of each week.
 - f. Notifications: In addition to these meetings, the UTR shall be notified in writing one week before transporting any chemicals, propane, and compressed gas cylinders on-site.
- G. Cooperation with Site Authorities: In the event that an investigation is conducted by the University or Federal Regulatory Agency, the Subcontractor shall cooperate fully with the appropriate SLAC authorities, and as directed by the University Technical Representative.
- H. On-Site Transportation: The transportation of all equipment, materials (including waste) and personnel shall be conducted in accordance with all applicable federal regulations and requirements. While transporting equipment on-site, the Subcontractor shall follow all posted traffic signs.
- I. Equipment: All equipment (including machinery and hand tools) used to perform operations, shall be in good working condition for the purpose intended, and meet all applicable National Electrical Manufacturers Association (NEMA), National Electrical Code (NEC) and National Fire Protection Agency (NFPA) requirements.
- All compressed gas cylinders shall be stored with positive latching mechanisms to preclude the inadvertent release or disconnection of the rack's securing means.
- J. Use of Premises/Physical Boundaries: Staging and work areas are limited to those areas agreed upon with the University. Portions of the site beyond those designated areas are not accessible (except for travel to the work site and to exit the site), to the Subcontractor or its employees or lower-tier subcontractors without the express written permission of the UTR. All Subcontractor personnel shall understand their work boundaries, and what their limitations are for travel while on-site.

The Subcontractor is responsible for the security of its work area and all associated equipment. The Subcontractor shall install temporary physical/security barriers around the facilities as necessary. The barriers shall remain in place while activities are being conducted. The University may request adjustments to the exact locations of the barriers.

- K. Use of Site Resources: The University will provide 120/208V power sources. If the Subcontractor wishes to use these power sources, the Subcontractor shall supply the necessary electrical distribution panel.

University Air Quality Management (AQM) personnel will be involved with any plans to bring stationary fuel-fired equipment on-site. A stationary source is defined as any building, structure, facility, or equipment that emits regulated air pollutants from a stationary source. Examples include fuel-fired generators, compressors, pumps, and heaters. Excluded are mobile sources, such as backhoes and cranes. The Subcontractor shall maintain a logbook documenting the hours of fuel-fired equipment operation and fuel consumption. Information from this logbook shall be forwarded to the University Technical Representative at the beginning of each week.

- L. Lock and Tag: The Subcontractor shall verify electrical and other utility isolation prior to initiating any work and install necessary locking devices. The verification shall be conducted in the presence of the University Technical Representative or University Technical Representative designee.

2.1 Requirements and Controls

While performing the work, including handling and transportation, the Subcontractor must comply with all applicable federal, state, and local regulations in effect at the time work is being performed, including but not limited to:

29 CFR 1910 – OSHA Standards, as applicable
29 CFR 1926 – Safety and Health Regulations for Construction
40 CFR 61 – National Emission Standard for Hazardous Air Pollutants (NESHAP)
49 CFR 383 – Commercial Drivers License Standards
NFPA 101 – Life Safety Code
NFPA 241 – Standard for Safeguarding Construction, Alteration and Demolition Operations
NEMA 250-1997 – Enclosures for Electrical Equipment (1000 Volts maximum)
UFC, Article 11, General Safety Precautions
UFC, Article 12, Maintenance of Means of Egress and Emergency Escapes
UFC, Article 74, Compressed Gases
UFC, Article 79, Flammable and Combustible Liquids
UFC, Article 80, Hazardous Materials
UFC, Article 82, Liquefied Petroleum Gases
UFC, Article 87, Fire Safety During Construction, Alteration or Demolition of a Building

NFPA 52, Compressed Natural Gas (CNG) Vehicular Fuel Systems Code
NFPA 54, National Fuel Gas Code
NFPA 57, Liquefied Natural Gas (LNG) Vehicular Fuel Systems Code
NFPA 58, Liquefied Petroleum Gas Code
NFPA 101, Life Safety Code
NFPA 241, Standard for Safeguarding Construction, Alteration, and Demolition Operations

The Subcontractor is responsible for all notification requirements per Bay Area Air Quality Management District (BAAQMD) Reg. 11, Rule 2. Notifications require 10 days advance notification. .

The implementation of these controls shall be documented in Subcontractor's submittals as described in Section 2.2.

2.2 Submittals and /Control Documentation

All submittals will be reviewed by the University Technical Representative for compliance with the Scope Of Work. No modifications, deviations, or changes shall be made to a document without the written approval of the University Technical Representative.

The Subcontractor shall submit five (5) copies of each submittal to the Contract Administrator.

The following items shall be submitted to the University Technical Representative:

- A. Schedule to Complete Each Major Work Element: The Subcontractor shall submit an acceptable schedule. Upon issuance of Notice-to- Proceed the schedule shall be updated each week by close of business Thursday, and provided to the University Technical Representative. Subcontractor schedule shall be prepared and maintained to a level of detail that identifies activities and allows progress tracking in one-week increments. Subcontractor shall show interdependence of activities, and the sequence in which the work is to be accomplished. The detail of information shall be such that the duration of each activity will range from 1 to 7 days.
- B. The Subcontractor shall submit a Pre-Work Hazards Analysis Form (PWHAF) before commencing any work. The PWHAF shall comply with applicable OSHA requirements in 29 CFR 1910 and 1926. In addition to describing the specific work activities, associated hazards, and controls used for worker protection and hazard mitigation, and shall also include a contingency plan for emergencies. A description of how foot traffic will be controlled during performance of the work shall be included. A contingency plan shall be submitted for possible emergencies, and response to be taken should the situation arise. Example include, but are not limited to:

- a. Electrical faults or shock
- b. Fire
- c. Accident
- d. Life threatening injury
- e. Non life threatening injury
- f. Rescue
- g. Power failure
- h. Water leaks
- i. Waste spills
- j. Unauthorized entry into work area
- k. Excessive heat/cold
- l. Breach of critical barrier
- m. Supplied air system failure
- n. Unexpected breach of structural integrity

C. Work Control Document: The Subcontractor shall submit a Work Control Document to the Contract Administrator prior to initiation of activities. The work control document shall describe the sequence of events required to accomplish the work described in this Specification.

The document shall describe how the Subcontractor will comply with the requirements and specifications as described within this Specification, and all applicable federal regulations.

D. Notifications: The Subcontractor shall file a notice with the Bay Area Air Quality Management District (BAAQMD).

Appendix 1

(add site map here showing relevant work and storage areas)

