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Introduction

This Site Compliance Plan (SCP):
a) corresponds with the version of the DOE Order on Facility Safety listed in the Prime Contract,
b) states how the Laboratory complies with applicable requirements as tailored to the risks at the Laboratory,
c) identifies CRD sections that do not apply, and
d) documents DOE-approved methods of compliance for applicable requirements and recurring deliverables*.

Impact on the Contract:
Under the SCP, sections of the CRD are incorporated into the Contract as-is, unless the SCP indicates that a section or portion thereof is inapplicable, or the section has been changed. Thus, for example, if “in compliance” is listed next to a CRD section, that section is incorporated into the Contract as-is. However, where an SCP indicates that a section or portion thereof is inapplicable, the section or portion thereof is excluded from the Contract. In addition, where a section or portion thereof is applicable, but changes to the section have been agreed by the Parties, the section, as modified by the Parties, shall be incorporated into the Contract. The SCP also memorializes the Parties’ agreement on how SLAC will comply with sections of the CRD (whether or not modified).

Attachment 1: Contractor Requirements Document (CRD)
This contractor requirements document (CRD) includes requirements outlined in Attachments 2 and 3 of Department of Energy (DOE) Order (O) 420.1C, Facility Safety, referenced in and made a part of this CRD, and which provides program requirements and/or information applicable to contracts in which this CRD is inserted.

* Deliverables: Data delivered to DOE or other external agency (e.g., recurring reporting, external database entries)
### 1. GENERAL REQUIREMENTS.

<table>
<thead>
<tr>
<th>Attachment 1: CRD Section and Tasks</th>
<th>Compliance Status</th>
<th>Method of Compliance</th>
<th>Deliverables* (managed through SLACTrak)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Item</td>
</tr>
</tbody>
</table>

#### a. This CRD establishes facility safety requirements for design, construction, operation, management, decontamination, decommissioning and demolition of DOE sites or facilities. Regardless of the performer of the work, the contractors are responsible for complying with the requirements of this CRD. The contractors are responsible for flowing down the requirements of this CRD to subcontractors at any tier, to the extent necessary, to ensure the contractors' compliance with the requirements.

There are no specific tasks from this CRD section.

#### b. Contractors must satisfy the requirements set forth in Attachments 2 and 3 of DOE O 420.1C.

See compliance comments for Attachments 2 and 3.

#### c. For design and construction activities, contractors must identify the applicable industry codes and standards, including the *International Building Code* (IBC), and the applicable DOE requirements and technical standards. If approved by the responsible DOE Head of the Field Element, state, regional, and local building codes may be used in lieu of the IBC upon contractor submission of documentation providing a basis that demonstrates that implementation of the substituted code for the specific application will meet or exceed the level of protection that would have been provided by the IBC.

In compliance

SLAC adopts the California Building and Fire Codes in synchronization with the State of California. Compliance is monitored by ESH Project Safety through the Building Inspection Office (BIO). The BIO provides a range of review and acceptance services for 10CFR851 and federal contract requirements for all new construction projects from conceptual design through project completion. California Building Codes are based on the International Code Council (ICC) Codes.

<table>
<thead>
<tr>
<th>Item</th>
<th>Frequency</th>
<th>Due Date(s)</th>
<th>Recipient (e.g., SSO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

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Additionally, DOE O 413.3B Chg. 5, *Program and Project Management for the Acquisition of Capital Assets*, requires nuclear projects to establish and maintain a Code of Record (COR) early in project design for identifying applicable industry codes and standards. For leased facilities that are not nuclear hazard category 1, 2, or 3 facilities, the requirements of this paragraph apply to the extent determined by the DOE Head of Field Element.

<table>
<thead>
<tr>
<th>d. Contractors must satisfy the requirements (i.e., mandatory statements) in DOE technical standards and industry codes and standards identified as applicable in accordance with Section 1.c. above, unless relief is approved in accordance with Section 2, below.</th>
</tr>
</thead>
</table>


| This section not applicable to SLAC, therefore it is not included. |

| See Section 2 below. |

| DOE-STD-3009 does not apply to the operation of SLAC |

*Deliverables: Data delivered to DOE or other external agency (e.g., recurring reporting, external database entries)*
f. Contractors must carry out the analysis prescribed in Section 3.3.1 of DOE-STD-3009-2014 and include the results of this analysis in applicable DSAs for existing DOE nuclear facilities and activities whenever the safety analysis concludes that the mitigated off-site dose consequences for one or more accident scenarios exceed the Evaluation Guideline of 25 rem.

DOE-STD-3009 does not apply to the operation of SLAC.

### 2. RELIEF FROM REQUIREMENTS, CODES AND STANDARDS.

a. Requests for equivalencies and exemptions to the requirements of this attachment are processed in accordance with DOE O 251.1D, Departmental Directives Program. For such equivalencies and exemptions, DOE O 251.1D requires approval, in consultation with the Office of Primary Interest, by the responsible Head of Departmental Element or designee, or in the case of NNSA, by the Administrator or designee. Because this Order affects nuclear safety, requests for advice from the Office of Primary Interest (i.e., Office of Nuclear Safety) on proposed equivalencies and exemptions for nuclear facilities should allow 45 days, in accordance with DOE O 251.1D. Requests for equivalencies and exemptions to the requirements of this attachment must be provided to the responsible contracting officer to facilitate DOE review. (Note: The requirements in this paragraph also address the requirements of this attachment, and those in Attachments 2 and 3, that relate to DOE technical standards and industry codes and standards that are invoked as required methods.)

There are no specific tasks from this CRD section.
### 3. REFERENCES AND ACRONYMS.

| b. Equivalencies to DOE technical standards and industry codes and standards determined to be applicable to the facility design or operations must demonstrate an equivalent level of safety (i.e., meets or exceeds the level of protection) and be approved by the DOE Head of Field Element or designee. | In compliance | SLAC complies with all applicable national consensus industry codes and standards, and the California Building Code (CBC) and California Fire Code (CFC). See Attachment 2, Section 3.d.(2)(c) regarding processing of Alternatives. | n/a | n/a | n/a | n/a |

- Attachment 4 of DOE O 420.1C provides a list of references and acronyms. Reference documents that may be helpful in implementing this Order include rules, directives, guidance, DOE technical standards, and industry codes and standards.

- There are no specific tasks from this CRD section.
Attachment 2: Facility Safety Requirements

This attachment provides information and/or requirements associated with the Department of Energy (DOE) Order O 420.1C, Facility Safety, as well as information and/or requirements applicable to contracts into which the associated Contractor Requirements Document (CRD), (see Attachment 1 of DOE O 420.1C) is inserted.

<table>
<thead>
<tr>
<th>Chapter I. Nuclear Safety Design Criteria (N/A)</th>
<th>Compliance Status</th>
<th>Method of Compliance</th>
<th>Deliverables* (managed through SLACTrak)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OBJECTIVE.</strong> To establish requirements for safety design of DOE hazard category 1, 2, and 3 nuclear facilities to support implementation of DOE Policy (P) 420.1, <em>Department of Energy Nuclear Safety Policy.</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This Chapter does not apply to SLAC, therefore it is not included.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter II. Fire Protection</th>
<th>Compliance Status</th>
<th>Method of Compliance</th>
<th>Deliverables* (managed through SLACTrak)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OBJECTIVE.</strong> To establish requirements for comprehensive fire protection programs for DOE facilities and emergency response organizations to:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Minimize the likelihood of occurrence of a fire-related event;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Minimize the consequence of a fire-related event affecting the public, workers, environment, property and missions; and,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Provide a level of safety protection consistent with the “highly protected risk” class of industrial risks.</td>
<td></td>
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<tr>
<td>Outlined in sections below.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Deliverables: Data delivered to DOE or other external agency (e.g., recurring reporting, external database entries)*
## 2. APPLICABILITY

This chapter applies to organizations that have responsibility for the design, construction, maintenance, or operation of government-owned or government-leased facilities and contractor-leased facilities used for DOE mission purposes. For leased facilities that are not nuclear hazard category 1, 2, or 3 facilities, the requirements of this chapter apply to the extent determined by the DOE Head of Field Element. (Note: DOE-STD-1066-2016, Fire Protection, provides guidance on a graded approach to fire protection for leased facilities.)

## 3. REQUIREMENTS

### a. General Fire Protection Program Requirements

<table>
<thead>
<tr>
<th>II.3.a: See (1) and (2) below.</th>
</tr>
</thead>
</table>

#### (1) Policy Statement

A policy must be established that affirms the contractor’s commitment to provide a comprehensive fire protection and emergency response program that meets the requirements of this chapter, related DOE directives, and other applicable requirements.

- **In compliance**
- **Section 1 of Chapter 12 of the ESH Manual affirms SLAC’s commitment to provide a comprehensive fire protection and suppression program consistent with a highly protected risk property. Due to its location in the ESH Manual, this statement has the force of policy.**

#### (2) Codes and Standards

The codes and standards determined to be applicable, including DOE technical standards, the building code, National Fire Protection Association (NFPA) codes and standards, and other industry codes and standards, must be identified in the fire protection and emergency response programs. The fire protection and emergency response programs may specify provisions for relief (exemptions and equivalencies) from identified, applicable fire protection codes and standards; otherwise, see Attachment 1, Section 2 for relief provisions.

- **In compliance**
- **See 3.a.(1) above.**

*Deliverables: Data delivered to DOE or other external agency (e.g., recurring reporting, external database entries)*
**Facility Safety**

**Site Compliance Plan** (Final Rev, 9/30/2019)

<table>
<thead>
<tr>
<th>(a) Facilities, and major modifications thereto, must be constructed to meet applicable codes and standards that are in effect when design criteria are approved (otherwise known as the Code of Record, or COR). Other facility changes must meet the most recent applicable codes and standards to the extent determined by the Authority Having Jurisdiction (AHJ).</th>
<th>In compliance</th>
<th>Code of Record requirements are established and tracked by the Conventional Project and Experimental Project Review Processes (ESH Manual, Chapter 1).</th>
<th>n/a</th>
<th>n/a</th>
<th>n/a</th>
<th>n/a</th>
</tr>
</thead>
<tbody>
<tr>
<td>(b) Provisions of subsequent editions of codes or standards (promulgated after the COR is established) are mandatory only to the extent that they are explicitly stated to be applicable to existing facilities.</td>
<td>In compliance</td>
<td>Requirements explicitly applicable to existing facilities are applied per the most current edition, except that Building and Fire Code editions are adopted in synchronization with the State of California. NFPA documents applicable to existing facilities (specifically, NFPA 101) are adopted as of January 1st of the year of the code edition revision.</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>(c) Conflicts between DOE O 420.1C: NFPA codes and standards; and the applicable building code must be resolved as follows:</td>
<td>II.3.a(2)(c), See 1 and 2 below.</td>
<td>1 Requirements of DOE O 420.1C take precedence over all NFPA and building code requirements and are subject to the relief requirements of DOE O 420.1C.</td>
<td>In compliance</td>
<td>SLAC complies with the requirements and procedures of the contractual portions of DOE Order 420.1C as outlined in this Implementation Plan. SLAC follows the requirements of DOE O 420.1C if relief is needed from one of its requirements.</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>2 Conflicts between NFPA requirements and the applicable building code requirements are resolved by the DOE Head of Field Element, consistent with DOE-STD-1066-2016, and in consultation with designated building code and fire protection subject matter experts.</td>
<td>In compliance</td>
<td>SLAC utilizes an alternatives process with the assistance of the DOE Bay Area Site Office to document and resolve conflicts between NFPA and CBC requirements.</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

*Deliverables: Data delivered to DOE or other external agency (e.g., recurring reporting, external database entries)
<table>
<thead>
<tr>
<th>b. Fire Protection Program Administration</th>
<th>II.3.b, Sec (1) – (3) below.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Documentation. A documented fire protection program that includes the elements and requirements identified in this chapter for design, operations, emergency response, fire analysis and assessments, wildland fire; and specific fire protection program criteria must be developed, implemented, and maintained by the contractor. Contractor must submit this documented fire protection program to the DOE Head of Field Element for review and approval [Note: this may be accomplished in conjunction with submittals required by 10 CFR Part 851, Worker, Health and Safety Program].</td>
<td>In compliance</td>
</tr>
<tr>
<td>Fire Protection Program</td>
<td>Annual</td>
</tr>
<tr>
<td>(2) Fire Protection Methods. Fire Protection Programs must describe the methods used to implement the requirements of this chapter. DOE-STD-1066-2016 is the applicable fire protection standard for use at DOE facilities. [Note: Relief provisions for applicable fire protection standards are described in Section 3.a.(2) above.]</td>
<td>In compliance.</td>
</tr>
<tr>
<td>(3) Self-Assessments. A documented comprehensive self-assessment of the fire protection program must be performed at least every three years, or at a frequency with appropriate justification approved by the DOE Head of Field Element.</td>
<td>In compliance</td>
</tr>
</tbody>
</table>

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**Design**

| (1) **Design Process.** A process must be established to ensure that fire protection program requirements are documented and incorporated into plans and specifications for design of new facilities and modifications to existing facilities. | In compliance | The design process is documented in the SLAC Project Review Procedure which is managed by ESH Building Inspection Office (BIO). | n/a | n/a | n/a | n/a |
|---|---|---|---|---|---|---|---|
| (2) **Protection Thresholds.** | II.3.c(2), Sec (a) – (c) below. | n/a | n/a | n/a | n/a |

*Some of the requirements in this section may not apply to portions of subterranean facilities that otherwise meet the requirements in Appendix D of DOE-STD-1066-2016.*

(a) New facilities (non-relocatable) exceeding 5,000 sq. ft. of floor area must be of Type I or II construction, as defined in the applicable building codes.

(b) Automatic fire suppression systems must be provided throughout new facilities exceeding 5,000 sq. ft. of floor area or where a Maximum Possible Fire Loss (MFPL) exceeds $5.9 million (in 2018 dollars), unless specific provision of an applicable NFPA code provides different criteria for coverage (such as elimination of sprinklers from a small closet).
<table>
<thead>
<tr>
<th></th>
<th>Requirement</th>
<th>Compliance</th>
<th>Details</th>
<th>n/a</th>
<th>n/a</th>
<th>n/a</th>
<th>n/a</th>
</tr>
</thead>
<tbody>
<tr>
<td>(c)</td>
<td>Automatic fire suppression systems must be provided throughout facilities in which any of the following conditions exist:</td>
<td>In compliance</td>
<td>SLAC provides sprinklers for all significant new buildings, including all buildings in excess of 5,000 square feet in area. This requirement is enforced through the SLAC Fire Marshal Office acting as a component of the BIO design review process.</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>1. where required by safety basis document (for example, to prevent loss of safety functions or provide defense-in-depth);</td>
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<td></td>
<td>2. significant life safety hazards;</td>
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<td></td>
<td>3. where fire may cause unacceptable mission or program interruption if automatic fire suppression systems are not provided;</td>
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<tr>
<td></td>
<td>4. where a modification to an existing facility would cause the MPFL to exceed $5.9 million (in 2018 dollars) for the facility; or,</td>
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<tr>
<td></td>
<td>5. where a modification to an existing facility results in facility floor area that exceeds 5,000 sq. ft.</td>
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</tr>
<tr>
<td>(d)</td>
<td>For property protection, multiple fire protection approaches, such as a fire suppression system and a fire detection and alarm system, must be provided in areas where the MPFL exceeds $177 million (in 2018 dollars) (refer to DOE-STD-1066-2016).</td>
<td>In compliance</td>
<td>SLAC’s fire hazard analyses for beamline facilities ensure appropriate adherence to this requirement in accordance with DOE-STD-1066-2016. No non-accelerator structure at SLAC has a Maximum Possible Foreseeable Loss (MPFL) that exceeds $177M. These requirements are overseen by the SLAC Fire Marshal acting in coordination with the BIO facility project review process.</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>(e)</td>
<td>For property protection, fire areas must be established such that the MPFL for each fire area does not exceed $412 million (in 2018 dollars). Fire walls or other separation approaches may be used to meet this requirement.</td>
<td>In compliance</td>
<td>See c.(2)(d) above. Fire areas have been established for accelerator structures using appropriate fire barrier walls to ensure the MPFL does not exceed $412 million in any one area.</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>(3) Fire Protection and Life Safety Systems</th>
<th>II.3.c(3), Sec (a) – (f) below.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Fire Suppression. The inadvertent operation or failure of fire suppression systems must not result in the loss of function of safety class or safety significant systems. (Note: This requirement addresses proper design of the fire suppression system to ensure it does not impact safety systems and is not intended to drive need for redundancy in safety significant system design.)</td>
<td>n/a</td>
</tr>
<tr>
<td>(b) Fire Barriers. Complete fire-rated construction and barriers, commensurate with the applicable codes and/or safety basis requirements, must be provided to isolate hazardous areas and minimize fire spread and loss potential consistent with limits as established in this chapter. Fire barrier locations and construction must be documented.</td>
<td>In compliance</td>
</tr>
<tr>
<td>(c) Fire Detection. Automatic fire detection must be provided to the extent required by applicable industry codes and standards.</td>
<td>In compliance</td>
</tr>
<tr>
<td>(d) Life Safety. Requirements for life safety and means of egress are provided in 10 CFR. Part 851. Other codes and standards, such as the International Building Code (IBC), and NFPA 101, Life Safety Code, may also be applicable.</td>
<td>In compliance</td>
</tr>
<tr>
<td>(e) Water Supply and Distribution. A reliable and adequate water supply and distribution system must be provided for fire suppression, as documented through appropriate analysis.</td>
<td>In compliance</td>
</tr>
<tr>
<td>Category</td>
<td>Compliance Status</td>
</tr>
<tr>
<td>----------</td>
<td>------------------</td>
</tr>
<tr>
<td>(f) Emergency Notification</td>
<td>In compliance</td>
</tr>
<tr>
<td>(4) Special Hazards</td>
<td>In compliance</td>
</tr>
</tbody>
</table>

### d. Operations

<table>
<thead>
<tr>
<th>1. Criteria and Procedures</th>
<th>Compliance Status</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>In compliance</td>
<td>Addressed through ESH Manual and SLAC Fire Marshal Office procedures, available on the Fire Protection Program SharePoint site.</td>
<td>n/a</td>
</tr>
</tbody>
</table>

*Deliverables: Data delivered to DOE or other external agency (e.g., recurring reporting, external database entries)*
**STANFORD UNIVERSITY**

SLAC National Accelerator Laboratory
Operated by Stanford University for the U.S. Department of Energy

**DOE Order 420.1C, Chg. 2 - Facility Safety (07/26/2018)**

Site Compliance Plan (Final Rev, 9/30/2019)

<table>
<thead>
<tr>
<th>(2) Implementation</th>
<th>II.3.d.2, Sec (a) – (d) below.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Staffing</td>
<td>In compliance</td>
</tr>
<tr>
<td></td>
<td>SLAC uses in-house fire protection staff, contractors and a memorandum of agreement with a neighboring municipal fire district. This is documented in SLAC’s Baseline Needs Assessment (BNA).</td>
</tr>
<tr>
<td></td>
<td>n/a</td>
</tr>
<tr>
<td>(b) Design Review</td>
<td>In compliance</td>
</tr>
<tr>
<td></td>
<td>Design review is managed through a review and acceptance process owned by the BIO. Responsibilities are shared between the BIO and the SLAC Fire Marshal Office. The Fire Marshal (an FPE) or the staff FPE oversees all fire protection related activities as part of this process. Reviews are conducted by a SLAC FPE or by a qualified fire prevention specialist under the direct supervision of a SLAC FPE.</td>
</tr>
<tr>
<td></td>
<td>n/a</td>
</tr>
<tr>
<td>(c) Equivalencies and Exemptions</td>
<td>In compliance</td>
</tr>
<tr>
<td></td>
<td>Equivalencies and exemptions are developed by, or under the oversight of, the Fire Marshal Office and are coordinated closely with the DOE FPE acting as the DOE subject matter expert. Procedures are maintained by the BIO.</td>
</tr>
<tr>
<td></td>
<td>n/a</td>
</tr>
<tr>
<td>(d) Assigned Authority</td>
<td>In compliance</td>
</tr>
<tr>
<td></td>
<td>AHJ (Fire Marshal) roles and responsibilities are described in ESH Manual, Chapter 12, Section 2.7.</td>
</tr>
<tr>
<td></td>
<td>n/a</td>
</tr>
</tbody>
</table>

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**Stanford University**

**SLAC National Accelerator Laboratory**
Operated by Stanford University for the U.S. Department of Energy

**DOE Order 420.1C, Chg. 2 - Facility Safety (07/26/2018)**

**Site Compliance Plan (Final Rev, 9/30/2019)**

<table>
<thead>
<tr>
<th>e. Emergency Response. Provide emergency response capabilities, as necessary, to meet site needs as established by the baseline needs assessment (BNA), safety basis requirements, and applicable regulations, codes and standards.</th>
<th>II.3.e, See (1) – (3) below.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) <strong>Baseline Needs Assessment.</strong> A BNA of the fire protection and emergency response organization must be conducted, and the BNA must: A BNA of the fire protection and emergency response organization must be conducted, and the BNA must:</td>
<td>In compliance</td>
</tr>
<tr>
<td>(a) establish capabilities to provide:</td>
<td>SLAC’s BNA is submitted to the DOE Site Office on a triennial basis.</td>
</tr>
<tr>
<td>1 effective response to extinguish fires;</td>
<td>BNA</td>
</tr>
<tr>
<td>2 emergency medical, rescue and hazardous materials response; and,</td>
<td>Annual</td>
</tr>
<tr>
<td>3 staffing, apparatus, facilities, equipment, training, pre-incident plans, mutual aid, and procedures.</td>
<td>9/30/2019 BASO Manager</td>
</tr>
<tr>
<td>(b) reflect applicable requirements of NFPA codes and standards, and DOE direction;</td>
<td></td>
</tr>
<tr>
<td>(c) be submitted to the DOE Head of Field Element for approval;</td>
<td></td>
</tr>
<tr>
<td>(d) be reviewed at least every three years, or whenever a significant new hazard that is not covered by the current BNA is introduced, and be updated as appropriate (Note: If no update is necessary, this result must be documented following the review) and submitted to the DOE Head of Field Element for approval; and,</td>
<td></td>
</tr>
<tr>
<td>(e) be incorporated into site emergency plans, FHAs, and safety basis documentation.</td>
<td></td>
</tr>
</tbody>
</table>

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### Pre-Incident Plans

Pre-incident strategies, plans, and standard operating procedures must be established to enhance the effectiveness of manual fire suppression activities, including areas within or adjacent to moderator-controlled areas. The criticality safety staff must review pre-incident plans and procedures related to moderator-controlled areas.

In compliance

Pre-incident plans have been established for high value and high occupancy structures. Updates to the plans are tracked as a BNA requirement. Firefighter standard operating procedures are under the control of Menlo Park Fire Protection District, which provides fire and other emergency response services to SLAC. Standard Operating Procedures for the SLAC Emergency Response Team are maintained by the SLAC Emergency Management Coordinator.

- n/a
- n/a
- n/a
- n/a

### Manual Fire Suppression Activities

- Physical access and appropriate equipment that is accessible for effective manual firefighting intervention must be provided.

- Procedures governing the use of firefighting water or other neutron moderating materials to suppress fire within, or adjacent to, moderator controlled areas must be established and reviewed by a criticality subject matter expert prior to release.

- Procedures governing firefighting techniques to be used during deactivation, decontamination, and demolition phases, must be established, when applicable.

- Where no alternative exists to criticality safety restrictions on the use of water for fire suppression, the need for such restrictions must be fully documented with written technical justification.

In compliance

Equipment for manual fire suppression activities is provided by the Menlo Park Fire Protection District under a Memorandum of Agreement. See BNA for details of firefighting equipment requirements and capabilities.

- n/a
- n/a
- n/a
- n/a

*Deliverables: Data delivered to DOE or other external agency (e.g., recurring reporting, external database entries)*
f. Fire Hazard Analyses and Facility Assessments.

<table>
<thead>
<tr>
<th>(1)</th>
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<tbody>
<tr>
<td><strong>Fire Hazards Analyses.</strong> FHAs, using a graded approach, must be conducted for the following cases: (1) all hazard category 1, 2, and 3 nuclear facilities and major modifications thereto; (2) facilities that represent unique fire safety risks; (3) new facilities or modifications to existing facilities with value greater than $177 million (in 2018 dollars); and (4) when directed by the responsible DOE authority. The FHAs must be:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>In Compliance</td>
</tr>
<tr>
<td></td>
<td>Fire Hazard Analyses are overseen by the SLAC Fire Marshal and conducted in accordance with this requirement.</td>
</tr>
<tr>
<td></td>
<td>n/a</td>
</tr>
<tr>
<td>(a)</td>
<td>performed under the direction of an FPE;</td>
</tr>
<tr>
<td>(b)</td>
<td>reviewed every three years by an FPE and revised as appropriate (Note: If no revision is necessary, this result must be documented following the review);</td>
</tr>
<tr>
<td>(c)</td>
<td>revised when--</td>
</tr>
<tr>
<td>1</td>
<td>changes to the facility structure or layout, processes, occupancy, safety basis documentation or BNA impacts the analysis in the FHA;</td>
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<tr>
<td>2</td>
<td>a modification to an associated facility or process adds a significant new fire safety risk; or,</td>
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<tr>
<td>3</td>
<td>the periodic (three-year) review identifies the need for changes; and</td>
</tr>
<tr>
<td>(d)</td>
<td>integrated into safety basis documentation.</td>
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</table>

*Deliverables: Data delivered to DOE or other external agency (e.g., recurring reporting, external database entries)*
<table>
<thead>
<tr>
<th>(2) Facility Assessments</th>
<th>In compliance</th>
<th>Buildings addressed by a Fire Hazard Analysis are reviewed annually.</th>
<th>n/a</th>
<th>n/a</th>
<th>n/a</th>
<th>n/a</th>
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<tbody>
<tr>
<td>a. annually, or at a frequency with appropriate justification approved by the DOE Head of Field Element, for facilities with a replacement value in excess of $118 million (in 2018 dollars), facilities considered a high hazard, or those in which vital programs are involved, as defined by the responsible DOE authority; and,</td>
<td>In compliance</td>
<td>Buildings with more than 10 occupants and not covered under Fire Hazard Analyses are reviewed for sprinkler system condition and life safety triennially. SLAC also conducts assessments on all low and ordinary hazard facilities at least every five years, with supporting information from reviews by the Program for Facility Building Reviews.</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>b. at least every three years, or at a frequency with appropriate justification approved by the DOE Head of Field Element, for remaining low and ordinary hazard facilities.</td>
<td></td>
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<tr>
<td>g. Wildland Fire</td>
<td>In compliance</td>
<td>SLAC's Wildland Fire Management Plan is developed by the Fire Marshal Office and implemented by SLAC Facilities and ESH departments.</td>
<td>n/a</td>
<td>n/a</td>
<td>5/31</td>
<td>BASO Manager</td>
</tr>
<tr>
<td>An integrated site-wide wildland fire management plan, consistent with the Federal Wildland Fire Management Policy, must be developed, provided to DOE Head of Field Element for approval, and implemented in accordance with the relevant portions of the NFPA 1143, Standard for Wildland Fire Management.</td>
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**Chapter III. Nuclear Criticality Safety (N/A)**

1. **OBJECTIVE.** To establish requirements for developing and implementing nuclear criticality safety programs (CSPs) for nuclear facilities and activities, including materials transportation activities, which provide adequate protection to the public, workers, and the environment.

   This Chapter does not apply to SLAC, therefore it is not included.

**Chapter IV. Natural Phenomena Hazards Mitigation**

1. **OBJECTIVE.** To establish requirements for DOE facility design, construction, and operations to protect the public, workers, and the environment from the impact of natural phenomena hazards (NPH) events (e.g., earthquake, wind, flood, lightning, snow and volcanic eruption).

   Outlined in sections below.

2. **APPLICABILITY.** Requirements in this chapter apply to all government-owned and government-leased nuclear and nonnuclear facilities and sites. Design requirements (Sections 3.a, 3.b, and 3.c, below) apply to new facilities, major modifications, and modifications that may be warranted based on periodic NPH assessment and upgrade requirements. For leased facilities that are not nuclear hazard category 1, 2, or 3 facilities, the requirements of this chapter apply to the extent determined by the DOE Head of Field Element.

   Outlined in sections below.

*Deliverables: Data delivered to DOE or other external agency (e.g., recurring reporting, external database entries)*
### 3. REQUIREMENTS.

| a. General | Facilities must be designed, constructed, maintained, and operated to ensure that SSCs will be able to perform their intended safety functions effectively under the combined effects of NPH and normal loads defined in the applicable building codes contained in facilities’ CORs. Nuclear facility safety functions that the SSCs must perform during an NPH must be defined in the facility’s safety basis documentation. Safety functions include:  
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<tbody>
<tr>
<td>In compliance</td>
<td>Safety Requirements are included in project-specific Facilities Design Guidance and have been reviewed in accordance with BIO review and authorization processes. Preventative maintenance and SLAC’s Work Planning and Control procedures ensure safety during operations and maintenance activities.</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
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<tr>
<td>(1) confinement/containment of hazardous materials;</td>
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<td>(2) protection of occupants and co-located workers of the facility and the public;</td>
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<td>(3) continued operation of essential facilities and equipment;</td>
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<tr>
<td>(4) safe shutdown of hazardous facilities and equipment; and,</td>
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<td>(5) maintenance of personnel access to areas needed for responding to accidents during NPH events.</td>
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| b. NPH Design Criteria. The design of new facilities and major modifications must be developed in accordance with the applicable requirements and criteria contained in DOE-STD-1020-2016, *Natural Phenomena Hazards Analysis and Design Criteria for DOE Facilities.* (Note: Requirements for non-nuclear facilities are described in Section 2.2 of DOE-STD-1020-2016.) | In Compliance | DOE-STD-1020-2016 directs that SLAC use the ASCE/SEI-7 and NFPA 780 as design guidance for structures. Building and Fire Code editions are adopted in synchronization with the State of California. NFPA documents applicable to existing facilities are adopted as of January 1st of the year of the code edition revision, and are documented in the BIO Review and Authorization Manual. | n/a | n/a | n/a |
c. **NPH Accident Analysis.** The NPH analysis supporting design and construction of facilities and safety SSCs must be documented and include evaluation of:

   - (1) potential damage to and failure of safety SSCs resulting from both direct and indirect NPH events; and,
   - (2) common cause/effect and interactions resulting from failures of other nearby facilities or other SSCs in the same facility caused by or induced by an NPH event.

<table>
<thead>
<tr>
<th></th>
<th>In compliance</th>
<th>Included as part of the required Basis of Design documentation, and reviewed in accordance with BIO Review and Authorization Manual, and project-specific Facilities Design Guidance.</th>
<th>n/a</th>
<th>n/a</th>
<th>n/a</th>
<th>n/a</th>
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d. **Review and Upgrade Requirements for Existing DOE Nuclear Facilities (Hazard Category 1, 2 and 3).**

   IV.3.d, See (1) and (2) below.

<p>| | | | | | |</p>
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(1) Existing facility or site NPH assessments must be reviewed at least every 10 years and whenever significant changes in NPH data, criteria, and assessment methods warrant updating the assessments. Sections 9.0 and 9.2 of DOE-STD-1020-2016 contains criteria and guidance for performing these reviews. The review results, along with any recommended update actions, must be submitted to the DOE Head of Field Element for approval. If no update is necessary, this result must be documented following the review.

<table>
<thead>
<tr>
<th></th>
<th>n/a</th>
<th>SLAC is not a Nuclear Facility. Requirement is not applicable.</th>
<th>n/a</th>
<th>n/a</th>
<th>n/a</th>
<th>n/a</th>
</tr>
</thead>
</table>

(2) If a new assessment of NPH indicates deficiencies in existing SSC design, a plan for upgrades must be developed and implemented on a prioritized schedule, based on the safety significance of the upgrades, time or funding constraints, and mission requirements. The upgrade plans must also be submitted to the DOE Head.

<table>
<thead>
<tr>
<th></th>
<th>n/a</th>
<th>See section 3.d.(1) above.</th>
<th>n/a</th>
<th>n/a</th>
<th>n/a</th>
<th>n/a</th>
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### Chapter V. Cognizant System Engineer Program (N/A)

<table>
<thead>
<tr>
<th>OBJECTIVE</th>
<th>This Chapter does not apply to SLAC, therefore it is not included.</th>
</tr>
</thead>
</table>

**Attachment 3: Design Criteria for Safety Structures, Systems, and Components (N/A)**

(Not Applicable to SLAC: Applies only to the design and construction of new hazard category 1, 2, and 3 nuclear facilities as defined by 10 Code of Federal Regulations (C.F.R.) Part 830, *Nuclear Safety Management*; and, (2) major modifications to hazard category 1, 2, and 3 nuclear facilities, as defined in 10 C.F.R. Part 830, that substantially change the facility safety basis.)

(end Contractual Attachments)
# Approvals

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carole Fried</td>
<td>Director, ESH, SLAC</td>
<td>Carole Fried</td>
<td>10/15/2019</td>
</tr>
<tr>
<td>John Saidi</td>
<td>Fire Safety Engineer/Emergency Management, BASO/OS</td>
<td>John Saidi</td>
<td>10/15/2019</td>
</tr>
<tr>
<td>Thomas V. Rizzi</td>
<td>ES&amp;H &amp; Facilities Ops Team Lead, BASO</td>
<td>Thomas V. Rizzi</td>
<td>10/15/2019</td>
</tr>
<tr>
<td>Paul Golan</td>
<td>Head of Field Element</td>
<td>Paul Golan</td>
<td>10/16/2019</td>
</tr>
</tbody>
</table>

PLEASE RETURN SIGNED IMPLEMENTATION PLAN TO:
CONTRACT MANAGEMENT, MS 75

## Revision History

<table>
<thead>
<tr>
<th>Revision</th>
<th>Revision Date</th>
<th>Summary of Change(s)</th>
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<tbody>
<tr>
<td>R0</td>
<td>09/30/2019</td>
<td>Original Release</td>
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</table>