

ENVIRONMENT, SAFETY & HEALTH DIVISION

Chapter 44: [Penetration Safety](#)

## Quick Start Summary

Product ID: [680](#) | Revision ID: 2275 | Date published: 14 June 2021 | Date effective: 14 June 2021

URL: <https://www-group.slac.stanford.edu/esh/eshmanual/references/penetrationsQuickstart.pdf>

### 1 Who needs to know about these requirements

The requirements of Penetration Safety apply to workers engaged in *penetrations* (drilling, cutting, or otherwise piercing) of a wall, ceiling, or floor, their supervisors, area and building managers, the penetration safety program manager, and Radiation Protection. The requirements do not apply to the placement of thumbtacks, picture nails, or similar items in a hollow wall or ceiling that do not go beyond the thickness of the external material (that is, sheetrock, wood, plaster board).

### 2 Why

Penetrations may expose workers to hazards from unidentified utilities and materials affected by chemicals or radiation.

### 3 What do I need to know

Penetrations are classified as either Class 1 (made into hollow walls, ceilings, or floors or into solid materials to a depth of 2 inches or less) or Class 2 (deeper than 2 inches or all the way through solid material). A penetration permit is required for

- Class 2 penetrations
- Class 1 penetrations where the hazards and controls are not documented in a job safety analysis (JSA) (unless the supervisor has direct knowledge that a structure, wall, floor, or other surface does not contain electrical, gas, or other hazards)
- Any penetration within a radiologically controlled area (RCA), a radioactive material management area (RMMA), or into accelerator shielding

### 4 When

These requirements take effect 14 June 2021.

### 5 Where do I find more information

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 44, “Penetration Safety”](#)

Or contact the [program manager](#).



## Chapter 44

# Penetration Safety

Product ID: [6](#) | Revision ID: [2274](#) | Date published: 14 June 2021 | Date effective: 14 June 2021

URL: <https://www-group.slac.stanford.edu/esh/eshmanual/pdfs/ESHch44.pdf>

## 1 Purpose

The purpose of this program is to ensure that *penetrations* are conducted safely and in compliance with applicable regulations. It covers planning, approving, and performing penetrations. It applies to workers, supervisors, area and building managers, and the penetration safety program manager; and Radiation Protection.

The requirements of this program do not apply to penetrations of earth, soil, or ground. For those penetrations, see [Chapter 11, “Excavation Safety”](#).

### 1.1 Exemptions

The requirements of this program do not apply to the placement of thumbtacks, picture nails, or similar items in a hollow wall or ceiling that do not go beyond the thickness of the external material (that is, sheetrock, wood, plaster board).

## 2 Roles and Responsibilities

Functional roles and general responsibilities for each under this program are listed below. More detailed responsibilities and when they apply are provided in the procedures and requirements.

The roles may be performed by one or more individuals and one individual may play more than one role, depending on the structure of the organizations involved. Responsibilities may be delegated.

### 2.1 Worker

- Follows the requirements of this chapter and its supporting materials before performing penetration operations
- Conducts hazard evaluations of the planned work
- Is familiar with the hazards and controls required to perform the work safely
- Is qualified in the correct use of personal protective equipment (PPE) required for the job and wears the required PPE

## 2.2 Supervisor

- Ensures that a hazard evaluation is performed in accordance with the requirements of this program and that required controls are in place before authorizing a penetration operation
- Authorizes penetration operations by reviewing and signing penetration permits and job safety analyses (JSAs)
- Discusses the hazards and controls with workers and verifies that the workers are trained and qualified to perform the work before authorizing the work
- Ensures that the causes of incidents or problems involving penetrations are identified and that corrective actions are implemented to prevent recurrence

## 2.3 Customer / Requester

- Participates in hazard evaluation of planned penetration operations when requested

## 2.4 Area / Building Manager

- Reviews and approves penetration permits for Class 2 penetrations
- Assists in the review of historical records, engineering plans, and as-built drawings that pertain to an area/location where a penetration is planned
- Participates in hazard evaluations of planned penetration operations when requested

## 2.5 Radiation Protection Department

- Reviews penetration permit if planned penetration
  - Is within a radiologically controlled area (RCA) or a radioactive material management area (RMMA)
  - Is into accelerator shielding (for example, the Accelerator Housing Structure, End Station A Hall, Klystron Gallery Floor)
  - Involves the use of a radiation generating device (x-ray generating device, etc.) for *non-destructive testing (NDT)*

## 2.6 Penetration Safety Program Manager

- Develops requirements and guidance as appropriate
- Provides guidance concerning program requirements
- Periodically monitors activities for compliance

# 3 Procedures, Processes, and Requirements

These documents describe the detailed requirements for this program and how to implement them:

- [Penetration Safety: Penetration Procedures](#) (SLAC-I-730-0A23C-002). Describes processes for planning, approving, and performing penetrations

These are the forms and tools for this program:

- [Penetration Safety: Penetration Permit Form](#) (SLAC-I-730-0A23J-007). Form for documenting penetration review and conditions

## 4 Training

There are no training requirements specific to penetration safety.

## 5 Definitions

*customer/requester.* Person or organization requesting the penetration

*excavation.* Any man-made cut, cavity, trench, or depression in an earth surface formed by earth removal. This definition includes environmental characterization (for example, core drilling), jack hammering, and indoor drilling/digging operations that may contact soil. In general, excavations are operations where contact with soil is expected, such as trenching and removing soil to install foundation footings or exposing underground pipes for repair or replacement. (See [Chapter 11, “Excavation Safety”](#).)

*hidden hazard.* Unseen electrical lines, gas lines, waste lines, water lines, or other lines that, if disturbed, may injure personnel or damage equipment

*non-destructive testing (NDT).* The examination of the internal structure of a solid material without using destructive forces. Examples of NDT methods are penetrating ionizing radiation, ground-penetrating radar, and magnetic, inductive, and conductive devices and methods.

*penetration.* An opening made by drilling, cutting, or otherwise piercing a wall, ceiling, or floor. This does not include placement of thumbtacks, picture nails, or similar items in a hollow wall or ceiling that do not go beyond the thickness of the external material (that is, sheetrock, wood, and so on).

- *Class 1 penetration.* A penetration made into hollow walls, hollow ceilings, or hollow floors or into solid materials to a depth of 2 inches or less
- *Class 2 penetration.* A penetration deeper than 2 inches or all the way through *solid material*

*solid material.* A floor, slab, wall, roof, or ceiling consisting of cast-in-place or pre-cast concrete, brick, gypsum drywall, plaster, wood, or masonry block materials

## 6 References

### 6.1 External Requirements

The following are the external requirements that apply to this program:

- Title 8, *California Code of Regulations*, “Industrial Relations”, Division 1, “Department of Industrial Relations”, Chapter 4, “Division of Industrial Safety”, Subchapter 7, “General Industry Safety Orders”, Group 2, “Safe Practices and Personal Protection”
  - Article 10, “Personal Safety Devices and Safeguards”, Section 3390, “Protection from Electric Shock” ([8 CCR 3390](#))
  - Article 7, “Miscellaneous Safe Practices”, Section 3314, “The Control of Hazardous Energy for the Cleaning, Repairing, Servicing, Setting-Up, and Adjusting Operations of Prime Movers, Machinery and Equipment, including Lockout/Tagout” ([8 CCR 3314](#))
  -
- National Fire Protection Association (NFPA) 70E, “Standard for Electrical Safety in the Workplace” ([NFPA 70E](#))

## 6.2 Related Documents

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 2, “Work Planning and Control”](#)
- [Chapter 8, “Electrical Safety”](#)
- [Chapter 11, “Excavation Safety”](#)

Chapter 44: [Penetration Safety](#)

# Penetration Procedures

Product ID: [681](#) | Revision ID: 2276 | Date published: 14 June 2021 | Date effective: 14 June 2021

URL: <https://www-group.slac.stanford.edu/esh/eshmanual/references/penetrationsProced.pdf>

## 1 Purpose

The purpose of these procedures is to ensure that *penetrations* are conducted safely and in compliance with applicable regulations. They cover planning, approving, and performing penetrations. They apply to workers, supervisors, ESH coordinators, area and building managers, and Radiation Protection.

These procedures do not apply to penetrations of earth, soil, or ground. For those penetrations, see [Chapter 11, “Excavation Safety”](#).

## 2 Procedures

Penetrations require a permit, as described below.

### 2.1 Penetration Planning Procedure

Step	Person	Action
1.	Supervisor	Classifies penetration: <ul style="list-style-type: none"> <li>▪ A <i>Class 1 penetration</i> is one made into hollow walls, hollow ceilings, or hollow floors or into <i>solid material</i> to a depth of 2 inches or less. A penetration permit is required unless the activity and associated hazard analysis and controls are documented in job safety analysis (JSA). (See <a href="#">Chapter 2, “Work Planning and Control”</a>.)</li> <li>▪ If the supervisor has direct knowledge that a structure, wall, floor, or other surface does not contain electrical, gas, or other hazards, these requirements do not apply and a Class 1 penetration may be authorized without a hazard evaluation or documentation.</li> <li>▪ A <i>Class 2 penetration</i> is one deeper than 2 inches or all the way through solid material. A penetration permit is required for all Class 2 penetrations. The activity and subsequent hazard analysis and controls must be documented on the permit, unless they have already been documented in a JSA, in which case the permit will reference that documentation.</li> <li>▪ All penetrations within a radiologically controlled area (RCA), a radioactive material management area (RMMA), into accelerator shielding (for example, the Accelerator Housing Structure, End Station A Hall, Klystron Gallery Floor), or involving the use of a radiation generating device (x-ray generating device, etc.) for <i>non-destructive testing (NDT)</i> require a penetration permit, including review by the Radiation Protection Department.</li> </ul>

Step	Person	Action
		If permit not required, goes to Section 2.2, "Penetration Procedure"
2.	Worker	Initiates permit process
3.	Worker	Evaluates hazards of the planned work
4.	Area / building manager	Assists in the review of historical records, engineering plans, and as-built drawings that pertain to the area/location where the penetration is planned
5.	ESH coordinator, area / building manager	Assist in hazard evaluation when requested
6.	Worker	Completes appropriate checklist (Class 1 or Class 2) on <a href="#">Penetration Safety: Penetration Permit Form</a>
7.	Worker	Documents hazards and controls on permit (or attaches appropriate JSA or similar work planning and control document)
8.	Worker	If radiological safety review required (see Step 1), submits permit to Radiation Protection Department for review, otherwise, goes to Step 10
9.	Radiation Protection Department	Performs review and completes "Radiological Safety" section of permit
10.	Supervisor	Reviews completed permit and approves Ensures the completed permit is kept at the worksite during the work. Any deviation from the scope of work identified on the permit requires re-approval of the permit. Permit expires 30 days after issuance.
11.	Area / building manager	For Class 2 permits only, reviews completed permit and approves

## 2.2 Penetration Procedure

Step	Person	Action
1.	Supervisor	Ensures hazards and controls are communicated to workers
2.	Worker	Performs work, implementing all required controls

## 3 Forms

The following forms and systems are required by this procedure:

- [Penetration Safety: Penetration Permit Form](#) (SLAC-I-730-0A23J-007). Form for documenting review and approval of penetrations

## 4 Recordkeeping

The following recordkeeping requirements apply for this procedure:

- Upon completion of the work the supervisor must retain the permit for at least 12 months.

## 5 References

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 44, “Penetration Safety”](#)
- [Chapter 2, “Work Planning and Control”](#)
- [Chapter 11, “Excavation Safety”](#)





Chapter 44: [Penetration Safety](#)  
**Penetration Permit Form**

Product ID: [282](#) | Revision ID: 2277 | Date Published: 14 June 2021 | Date Effective: 14 June 2021  
 URL: <https://www-group.slac.stanford.edu/esh/eshmanual/references/penetrationsFormPermit.pdf> | [docx](#)

**ENVIRONMENT, SAFETY & HEALTH DIVISION**

A penetration permit is required for all Class 2 penetrations; for those Class 1 penetrations where the hazards and controls are not documented in a job safety analysis (JSA) (unless the supervisor has direct knowledge that a structure, wall, floor, or other surface does not contain electrical, gas, or other hazards); and for any penetration within a radiologically controlled area (RCA), a radioactive material management area (RMMA), or into accelerator shielding.

Any deviation from the scope of work identified on this permit requires re-approval of this permit. Permit expires 30 days after issuance.

The completed permit must be kept at the worksite during the work. Upon completion of the work the supervisor must retain the permit for at least 12 months. (See [Penetration Safety: Penetration Procedures](#) [SLAC-I-730-0A23C-002].)

Work request number (if applicable):	Date permit submitted:
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# 1 General Information

Area / location:	Date(s) work will be performed:	
Job description (location of penetration, material to be penetrated, tools, etc):		
Other information (depth of penetration, etc):		
Requester:	Phone number:	Organization:

Sample form, see URL at top of page

Penetration Classification	Yes	N/A
Penetration is into hollow walls, hollow ceilings, or hollow floors, or a penetration into solid materials to a depth of 2 inches or less? <i>If yes, complete "Class 1 Penetration Checklist".</i>	<input type="checkbox"/>	
Penetration is deeper than 2 inches or all the way through solid materials? <i>If yes, complete "Class 2 Penetration Checklist".</i>	<input type="checkbox"/>	

Radiological Review Determination <i>If any of the following are checked, submit permit to Radiation Protection to complete "Radiological Safety".</i>	Yes	No
Penetration is within a radiologically controlled area or a radioactive material management area?	<input type="checkbox"/>	<input type="checkbox"/>
Penetration is into part of accelerator shielding (for example, the Accelerator Housing Structure, End Station A Hall, Klystron Gallery Floor)?	<input type="checkbox"/>	<input type="checkbox"/>
Penetrations that meet any of the conditions below require a radiation safety work control form (RSWCF) and approval from Radiation Physics.		
▪ Into or through non-concrete radiation shielding	<input type="checkbox"/>	<input type="checkbox"/>
▪ Into concrete radiation shielding, with penetration exceeding 2 inches in diameter	<input type="checkbox"/>	<input type="checkbox"/>
▪ Into concrete radiation shielding, with penetration exceeding 6 inches deep	<input type="checkbox"/>	<input type="checkbox"/>
▪ Into concrete radiation shielding where penetration is not refilled with a dense material (for example concrete or steel)	<input type="checkbox"/>	<input type="checkbox"/>
▪ All the way through concrete radiation shielding	<input type="checkbox"/>	<input type="checkbox"/>
▪ Into FEH hutch roof concrete radiation shielding, with penetration exceeding 3 inches deep	<input type="checkbox"/>	<input type="checkbox"/>
Non-destructive testing (NDT) involves the use of a radiation generating device (x-ray generating device, etc.)?	<input type="checkbox"/>	<input type="checkbox"/>



## 2 Class 1 Penetration Checklist

Complete for penetrations into hollow walls, ceilings or floors, or 2 inches or less into solid material

	Yes	N/A
Checked other side of walls, under floors, or through false ceilings for hazards? <b>Caution</b> For roofing work, electrical raceways (conduit) may be recessed or painted the same color as the interior ceiling. Use supplemental lighting and binoculars, or a man lift or scissor lift for a closer approach to the area of inspection, if necessary to positively confirm the presence or absence of electrical raceways.	<input type="checkbox"/>	<input type="checkbox"/>
Verified stud locations?	<input type="checkbox"/>	<input type="checkbox"/>
Non-conductive tools to be used?	<input type="checkbox"/>	<input type="checkbox"/>
Masonry bits and hand tools to be used for initial penetration?	<input type="checkbox"/>	<input type="checkbox"/>
Drill bit stops or short drill bits (2 inches or less) to be used for solid material?	<input type="checkbox"/>	<input type="checkbox"/>
Electrical tools equipped with GFCIs or double insulated?	<input type="checkbox"/>	<input type="checkbox"/>
GFCIs tested?	<input type="checkbox"/>	<input type="checkbox"/>
Appropriate PPE specified (see "Controls") and obtained?	<input type="checkbox"/>	<input type="checkbox"/>
PPE inspection(s) up to date?	<input type="checkbox"/>	<input type="checkbox"/>
Checklist completed by:	Date:	

## 3 Class 2 Penetration Checklist

Complete for penetrations greater than 2 inches into solid material

	Yes	N/A
Reviewed historical records, engineering plans, and drawings?	<input type="checkbox"/>	<input type="checkbox"/>
Area responsible person/designee, customer/requester, or other personnel consulted?	<input type="checkbox"/>	<input type="checkbox"/>
Visually inspected proposed location of penetration?	<input type="checkbox"/>	<input type="checkbox"/>
<b>Caution</b> For roofing work, electrical raceways (conduit) may be recessed or painted the same color as the interior ceiling. Use supplemental lighting and binoculars, or a man lift or scissor lift for a closer approach to the area of inspection, if necessary to positively confirm the presence or absence of electrical raceways.		
Checked other side of walls, under floors, or through false ceilings for hazards?	<input type="checkbox"/>	<input type="checkbox"/>
De-energized and locked/tagged-out energy sources as required?	<input type="checkbox"/>	<input type="checkbox"/>
NDT used to determine if additional hazards exist? <i>If yes, list results in the "Hazards" section.</i>	<input type="checkbox"/>	<input type="checkbox"/>
NDT used to determine wall reinforcement?	<input type="checkbox"/>	<input type="checkbox"/>
Electrical tools equipped with GFCI or double-insulated?	<input type="checkbox"/>	<input type="checkbox"/>
GFCIs tested?	<input type="checkbox"/>	<input type="checkbox"/>
Appropriate PPE specified (see "Controls") and obtained?	<input type="checkbox"/>	<input type="checkbox"/>
PPE inspection(s) up to date?	<input type="checkbox"/>	<input type="checkbox"/>
Short drill bits used or equipment marked to limit penetration depth?	<input type="checkbox"/>	<input type="checkbox"/>
Checklist completed by:	Date:	

## 4 Hazards and Required Controls

Complete for all penetrations. May reference JSA or similar work authorization document if hazards / controls are documented there.

### 4.1 Hazards

Type and size of energy sources present (including results from NDT, if used):

Hazards specific to the tools that will be used:

Work environment hazards (such as moisture, lead, asbestos, concrete dust (silica), etc.):

Other hazards:

Sample form, see URL at top of page

### 4.2 Controls

Procedural requirements:

Types and classification of PPE:

Other controls:

## 5 Radiological Safety

This section, if applicable (see Radiological Review Determination in "General Information"), must be completed by Radiation Protection, Field Operations (RPFO). Please allow two days for review.

Radiation Protection, Field Operations (RPFO) ext. 4299		
	Yes	N/A
Pre-work survey required?	<input type="checkbox"/>	<input type="checkbox"/>
Radiological HEPA vacuum cleaner required?	<input type="checkbox"/>	<input type="checkbox"/>
Radiation safety work control form (RSWCF) required? <i>If yes, Radiation Physics must review (below).</i>	<input type="checkbox"/>	<input type="checkbox"/>
Additional requirements for this penetration? <i>If yes, describe:</i>	<input type="checkbox"/>	<input type="checkbox"/>
Reviewed by		
Name:	Signature:	Date:

Review of penetration permit by Radiation Protection, Radiation Physics (RPRP) <i>Required for any penetrations that require a radiation safety work control form (RSWCF)</i>		
Reviewed by		
Name:	Signature:	Date:

Sample form, see URL at top of page

## 6 Approval and Authorization

### 6.1 Supervisor

*Required for Class 1 and Class 2 penetrations*

I have discussed the hazards and controls with the workers and verified that they are trained / qualified to perform the work.		
Name:	Signature:	Date:

### 6.2 Area / Building Manager

*Required for Class 2 penetrations*

Name:	Signature:	Date:
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## 7 Additional Requirements

- Check behind walls, under floors, or through false ceilings to attempt to locate hidden utilities or other hazards (such as asbestos). In most industrial environments, electric wiring is run in metal conduit. However, it is possible for Romex cable or other soft-surfaced electrical wiring to be present within hollow walls of some buildings, especially in some portable buildings.
- Pay particular attention to roofing penetration operations. Electrical raceways (conduit) on the interior ceiling may be particularly difficult to detect visually, especially if the raceway is recessed or painted the same color as the ceiling. Use supplemental lighting and binoculars, or a man lift or scissor lift for a closer approach to the area of inspection, if necessary to positively confirm the presence or absence of electrical raceways.
- Verify metal stud locations by measuring from adjacent studs or by using detection equipment to determine that the metal is not an electric conduit or gas pipe.
- If it is suspected that hidden hazards exist at the point of penetration, relocate the work if possible. If the work cannot be relocated, use non-destructive testing (NDT) devices (ground penetrating radar, x-ray, magnetic, induction, conductive, or other devices and methods) to determine whether additional hazards exist. For hollow structures a pilot hole may be useful to look for hidden utilities. If the penetration is to be made into a solid load-bearing wall, use NDT before performing the penetration to ensure that it does not interrupt wall reinforcement.
- Before vacuuming mineral dusts or slurries verify that fire technicians have bypassed any local smoke detectors.

Sample form, see URL at top of page

# 851>Cal/OSHA Implementation Plan: Penetration Safety

This form is for documenting changes to a program and the program's supporting resources (ESH Manual chapter or similar program description, training courses, databases, and so on) resulting from the adoption of the model Revolutionary Working Group (RWG) contract (see below) and the associated DOE variance from 10 CFR 851, "Worker Safety and Health Program". The purpose is to ensure consistent, concise descriptions of the resulting changes. The form is to be completed by the program manager and sent to the DOE as a cover sheet with the revised documents. The general process is as follows:

1. Program manager completes form
2. Changes to program resources made and reviewed following normal revision processes
3. DOE sent draft form and revisions
4. Changes to program resources published
5. DOE sent final form and revisions

## 1 Introduction

The RWG model contract and 10 CFR 851 variance are intended to simplify and improve the implementation of worker safety and health requirements by tailoring the laws, regulations, and standards that apply while achieving a level of protection equivalent to the requirements of 10 CFR 851. This mostly entails replacing federal Occupational Safety and Health Administration (OSHA) regulations (29 CFR 1910 and 1926) with Cal/OSHA regulations (8 CCR) as external requirements to be complied with but may also involve other laws and regulations and either different versions of industry standards than those cited in 10 CFR 851 or entirely different standards. (One purpose of this form is to capture the specific changes in external requirements for each program.) (For more information on this effort, see the variance application in [851>Cal/OSHA](#) resources.)

## 2 Plan

Field Number	Field Name	Field
1.	Program name	<a href="#">Penetration Safety</a>
2.	Program manager	<a href="#">Stickney, Doug</a>
3.	LBNL counterpart	Stephanie Collins 510-926-1720 ( <a href="#">SME list</a> ) ( <a href="#">LBNL Phonebook</a> )
4.	Program documents	<i>The following is a list of existing program documents, to be reviewed by the program manager to determine which will need to be revised to reflect 851&gt;Cal/OSHA changes.</i> <ul style="list-style-type: none"><li>▪ <a href="#">ESH Manual Chapter44: Penetration Safety</a></li><li>▪ <a href="#">Penetration Safety: Quick Start Summary</a></li><li>▪ <a href="#">Penetration Safety: Penetration Procedures</a></li><li>▪ <a href="#">Penetration Safety: Penetration Permit Form</a></li></ul>
5.	Training courses	<i>The following is a list of existing training courses, to be reviewed by the program manager to determine which will need to be revised to reflect 851&gt;Cal/OSHA changes.</i> <i>Course materials are available for review.</i> <ul style="list-style-type: none"><li>▪ None</li></ul>

Field Number	Field Name	Field
6.	Other program resources	<p><i>The following is a list of existing program resources, to be reviewed by the program manager to determine which will need to be revised to reflect 851&gt;Cal/OSHA changes.</i></p> <ul style="list-style-type: none"> <li>▪ Any?</li> </ul>
7.	Current external requirements	<p><i>The following is a list of current external requirements for this program, as identified in the program documents above.</i></p> <ul style="list-style-type: none"> <li>▪ Title 29, Code of Federal Regulations, “Labor”, Subtitle B, “Regulations Relating to Labor (Continued)”, Chapter 17, “Occupational Safety and Health Administration, Department of Labor”, Part 1910, “Occupational Safety and Health Standards”, Subpart I Electrical Protective Equipment (29 CFR 1910.137)</li> <li>▪ Title 29, Code of Federal Regulations, “Labor”, Subtitle B, “Regulations Relating to Labor (Continued)”, Chapter 17, “Occupational Safety and Health Administration, Department of Labor”, Part 1910, “Occupational Safety and Health Standards”, Subpart J, Control of Hazardous Energy (29 CFR 1910.147)</li> <li>▪ Title 29, Code of Federal Regulations, “Labor”, Subtitle B, “Regulations Relating to Labor (Continued)”, Chapter 17, “Occupational Safety and Health Administration, Department of Labor”, Part 1910, “Occupational Safety and Health Standards”, Subpart S, “Electrical” (<a href="#">29 CFR 1910 Subpart S</a>)</li> <li>▪ Title 29, Code of Federal Regulations, “Labor”, Subtitle B, “Regulations Relating to Labor (Continued)”, Chapter 17, “Occupational Safety and Health Administration, Department of Labor”, Part 1926, “Safety and Health Regulations for Construction”, Subpart K, “Electrical” (<a href="#">29 CFR 1926 Subpart K</a>)</li> <li>▪ National Fire Protection Association (NFPA) 70E, “Standard for Electrical Safety in the Workplace” (<a href="#">NFPA 70E</a>)</li> </ul> <p><i>The following is a list of current external reference/guidance documents.</i></p> <ul style="list-style-type: none"> <li>▪ None</li> </ul>
8.	Proposed external requirements	<p><i>List all the external requirements that will apply to this program. To determine, start by looking up existing external requirements in <a href="#">851&gt;Cal/OSHA</a> resources (variance, gap analysis, and contract) and finding replacements (for example a specific section in 29 CFR 1910 to a specific section in 8 CCR or a current version of an industry standard). Where Cal/OSHA requirements are less stringent than those of 10 CFR 851, check with Jeremy Sawyer on which to use. <b>Enter “no changes” if none.</b></i></p> <ul style="list-style-type: none"> <li>▪ §3390. Protection from Electric Shock</li> <li>▪ §3314. The Control of Hazardous Energy for the Cleaning, Repairing, Servicing, Setting-Up, and Adjusting Operations of Prime Movers, Machinery and Equipment, Including Lockout/Tagout</li> <li>▪ National Fire Protection Association (NFPA) 70E, “Standard for Electrical Safety in the Workplace” (<a href="#">NFPA 70E</a>)</li> </ul>
9.	Proposed substantive changes	<p>Describe (list) the substantive changes to be made in the program, based on the new external requirements. <b>Enter “no changes” if none.</b></p> <ul style="list-style-type: none"> <li>▪ No changes</li> </ul>
10.	Additional proposed substantive changes	<p><i>Describe (list) the substantive changes to be made in the program, in addition to those based on the new external requirements. For example, those due to stakeholder input, other reviews and audits, operating experience. <b>Enter “no changes” if none.</b></i></p>

