

Requirements Documents

HMIS-RD-FP-8589

Hanford Fire Marshal Permits

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Rev. 0, Chg. 0

Change Summary

Description of Change

initial blue sheeting

Publication Correction to add alternate SME



Hanford Mission Integration Solutions
BLUE SHEET

Hanford Mission Essential Services Contract
Contract Number: 89303320DEM00031

Document Number: MSC-RD-FP-8589 Rev/Change: 7/3 HMIS Owner: Safeguards & Security and Emer Response

Document Title: Hanford Fire Marshal Permits Level 1 Level 2 Level 3

NOTE: If listing multiple documents on one form, list Document Number, Rev/Change, and Title for each in the Comment field. All documents must be related, need the same changes, have the same Blue Sheet Expirations Date.

HMESC Applicability:
 Document Does Not Apply to HMESC Work Scope; Cancel Interface and Integration Services
 President's Office/GM Infrastructure and Site Services
 Integrated Business and Mission Support/COO Safeguards and Security and Emergency Response
 Mission Assurance
 Engineering, Technology and Projects

DOE Approval Required OUO Information

Document Status:
 Document applies as-is, no changes needed.
 Document needs editorial changes only (e.g., changes MSA to HMIS).
 Document needs minor changes.
 Document needs revision (major changes).
 Document will be replaced by:

Sections NOT Applicable to HMIS:

Needed Updates/Revisions:
Need to make name changes from MSA to HMIS and associated changes such as reference procedure identifiers
Review for applicable NFPA updates

Blue Sheet Expiration Date: _____

Blue Sheet Disposition:
 Cancel Combine* Transition Release**
**Note Details in Comments **Concurrence of HMIS President's Office Required _____ President's Office Concurrence. Print, Sign and Date*

OR, this document is temporary and will be updated and reissued by:
 45-Day Blue Sheet 90-Day Blue Sheet 365-Day Blue Sheet

Comments:

Prepared by: Ryan Hibbs Hibbs, Ryan L Digitally signed by Hibbs, Ryan L

Print First and Last Name Signature Date
Date: 2020.09.29 13:59:39 -07'00'



Hanford Mission Integration Solutions
BLUE SHEET (Continued)

Hanford Mission Essential Services Contract
Contract Number: 89303320DEM00031

APPROVED

HMIS Owning Manager or Designee:

Adam Moldovan - Approved via telecom
Print First and Last Name

A. N. Moldovan
Signature

Digitally signed by A. N. Moldovan
Date: 2020.09.30 07:09:19 -0700
Date

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1.0 PURPOSE AND SCOPE

This Level 1 Requirements Document provides the requirements for obtaining Fire Marshal permits for activities described within. This document implements requirements from CRD O 420.1C Change 1 (Supplemented Rev. 0) *Facility Safety*, and the National Fire Protection Association, (NFPA) 1, *Fire Code*. The purpose of the permit is to ensure the fire protection/prevention objectives and goals of the fire protection program are achieved and to serve as a tool for notifying the Hanford Fire Department of changing conditions and hazards on the Hanford Site. The requirements in this document are applied in the Mission Support Contract, the Plateau Remediation Contract and the Tank Operations Contract.

This document partially implements the ISMS Core Function #3, Develop and Implement Hazard and Environmental Controls.

2.0 CONSTRUCTION/BUILDING MANAGER REQUIREMENTS**2.1 Obtaining/Approving Permits**

NOTE: For the tables in this section under the requirement "type" column, "V" means verbatim and "I" means interpreted.

#	REQUIREMENT	TYPE V or I	SOURCE
1.	<p>The responsible manager (facility, building, project), supervisor-in-charge, work planner, etc. must ensure that a request for a permit is communicated to the responsible Fire Protection Engineer (FPE)/Deputy Fire Marshal (DFM) for the activities listed in Sections 2.2 and 2.3 of this Requirements Document (RD). The communication may be through the generation of a (Hanford Fire Marshal Permit Request Form) or an e-mail by the requester to the responsible FPE/DFM. Verbal requests are acceptable when agreed to by the responsible FPE/DFM. The permit shall be obtained from the responsible FPE/DFM for the activities listed in Sections 2.2 and 2.3, before these activities commence.</p> <p>NOTE: The Hanford Fire Marshal permit system can be found on the Hanford Intranet; MSA/Emergency Services/Fire Marshal's web page or accessed via this web link: http://msc.ms.rl.gov/firepermit/</p> <p>Once approved, Fire Marshal permits are automatically retained in the Integrated Document Management System (IDMS).</p>	I	NFPA 1; 1.12.

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2.	The responsible facility manager for a hazard category 1, 2 or 3 DOE nuclear facility/complex shall ensure that an Unreviewed Safety Question (USQ) determination is performed in accordance with the established process prior to implementation of a new or revised fire marshal permit.	I	10 CFR 830.203
3.	The responsible manager (facility, building, project) and a Fire Marshal authorized representative shall approve the fire marshal permit. NOTE: <i>The permit must be in place prior to commencement of the activity.</i>	I	CRD O 420.1C Change 1 (Supp. Rev. 0), Fire Marshal Charter
4.	A copy of the approved permit shall be posted or maintained readily accessible at each place of operation, carried by the permit holder or available upon request.	I	NFPA 1; 1.12.6.9
5.	After consultation with the permit requestor, the FPE/DFM is responsible for determining if the work activity requires a permit to be issued.	I	NFPA 1; 1.12

2.2 Permit Requirements for New Activities

1.	Construction/Facility Modification/Demolition – New construction projects, modifications to or relocation of existing facilities/structures, field remediation projects (dig sites) and demolition of facilities and structures, or portions thereof (includes using the <i>Construction/Demolition Fire Safety Inspection Checklist (A-6002-692)</i> . See MSC-RD-FP-9717, <i>Fire Prevention for Construction/Occupancy/ Demolition Activities</i> .	I	NFPA 1; 1.12
2.	Fire Alarm and Detection Systems – The installation or modification of fire alarm and detection systems and related equipment.	I	NFPA 1; 1.12
3.	Fuel Fired Equipment	I	NFPA 1; 1.12
4.	Hot Roofing Application	I	NFPA 1; 1.12
5.	Modification of a Means of Egress	I	NFPA 1; 1.12
6.	Occupancy/Operation – Use, occupancy or operation of a new facility or re-start, re-occupancy or change in occupancy of an existing facility. Appendix B provides a guide for an	I	NFPA 1; 1.12

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	occupancy checklist that can be used at the discretion of the facility fire protection engineer/deputy fire marshal.		
7.	Other – Other activities, at the discretion of the Fire Marshal’s representative, and not meeting one of these distinct categories, yet falling under the scope of NFPA 1 permitting requirements. Examples could include exhibit and trade shows, combustible material storage and battery systems.	I	NFPA 1; 1.12
8.	Planned Impairment – A Permit may be issued for a planned impairment to a fire protection system.	I	NFPA 1; 1.12
9.	Relocatable Structure, Placement, Relocation or Demobilization – Construction, location, erection or placement of a relocatable structure. Note: Permits are not necessarily required for conex boxes. The requirement for permits will be at the discretion of the FPE/DFM based on factors such as hazards and occupancy.	I	NFPA 1; 1.12
10.	Road Closure	I	NFPA 1; 1.12
11.	Suppression System - The installation or modification of a fire suppression system.	I	NFPA 1; 1.12
12.	System Deactivation – Deactivation of a fire protection system, including a fire suppression system, fire alarm and detection system, fire hydrant, or standpipe. <i>NOTE: For the deactivation of fire hydrants a documented request to Fire Systems Maintenance to remove (snap-off) the hydrant must be in place as a condition of permit approval.</i>	I	NFPA 1; 1.12
13.	Water Supply – Installation or modification of water supplies, fire hydrants or underground mains.	I	NFPA 1; 1.12

2.3 Permit Requirements for New/Existing Activities

1.	Chemicals and Chemical Waste - \geq the quantities listed in Appendix A EXCEPTION: <i>Analytical laboratory facilities operating in compliance with NFPA 45 are exempted due to equivalent compliance.</i>	I	NFPA 1; 1.12
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2.	<p>Compressed Gas and LP Gas – Storage, handling or use of compressed gases or liquefied petroleum gases. Installation or modification of any compressed gas system. The amounts requiring a permit are listed in Appendix A relative to the specific hazard of the gas (e.g., flammable, etc.)</p> <p>EXCEPTION: <i>Analytical laboratory facilities operating in compliance with NFPA 45 are exempted due to equivalent compliance.</i></p>	I	NFPA 1; 1.12
3.	<p>Designated Hot Work Area – Designated area for cutting and welding operations.</p>	I	NFPA 1; 1.12
4.	<p>Explosives and Ammunition - Includes explosive materials and operations.</p>	I	NFPA 1; 1.12
5.	<p>Flammable and Combustible Liquids – Installation, storage, use, handling, or transportation of Class I flammable liquids and Class II or Class III combustible liquids as defined by Appendix A.</p>	I	NFPA 1; 1.12
6.	<p>Off Road Travel – A Permit may be issued to address compensatory measures for variances to standard Off-Road Travel requirements as defined in the most current edition of the Hanford Fire Marshal Advisory Bulletin AB07-001, <i>OFF-ROAD VEHICLE TRAVEL</i>.</p>	I	NFPA 1; 1.12
7.	<p>Portable Heaters – Electric heaters over 1500 watts and fuel fired heaters.</p>		NFPA 1; 1.12

2.4 Enforcement

1.	<p>The Fire Marshal may issue Fire Prevention Findings for non-compliance with applicable Permit requirements to the appropriate building or facility manager and cooperate with them in order to correct the non-compliant situation. Findings that affect a hazard category 1, 2, or 3 nuclear facility/complex shall also be provided to the project Nuclear Safety organization.</p> <p>NOTE: <i>The intent of the Finding is to identify deficient items that present a danger to life or property and require timely resolution. The Fire Marshal may elevate unresolved or delinquent Findings to the appropriate contractor senior management and/or DOE if efforts to</i></p>	I	CRD O 420.1C Change 1 (Supp. Rev. 0), Fire Marshal's Charter
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	<i>resolve the non-compliant situation in a reasonable period of time are unsuccessful.</i>		
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3.0 FORMS

A-6002-692, Construction/Demolition Fire Safety Inspection Checklist

4.0 RECORD IDENTIFICATION

All records are generated, received, processed, and maintained by MSC in accordance with MSC-PRO-RM-10588, *Records Management Processes*.

Records Capture Table

Name of Document	Submittal Responsibility	Retention Responsibility
Hanford Fire Marshal Permits and Occupancy Permit Checklists, as applicable.	Fire Protection Engineers/ Deputy Fire Marshal's	Fire Marshal permits, once approved, get automatically retained in the Integrated Document Management System (IDMS).

5.0 REFERENCES**5.1 Source Requirements**

National Fire Protection Association (NFPA) 1, *Fire Code*
 Authority, Responsibilities, and Duties of the Hanford Fire Marshal (Fire Marshal's Charter)
 DOE Approval Letter 10-SED-0010, dated December 3, 2009
 10 CFR 830, *Nuclear Safety Management*
 CRD O 420.1C Change 1 (Supplemented Rev. 0), *Facility Safety*

5.2 Working References

MSC-RD-FP-9717, *Fire Prevention for Construction/Occupancy/Demolition Activities*
 MSC-RD-FP-9900, *Hot-Work Performance Requirements*
 MSC-RD-EI-15332, *Environmental Protection Requirements*
 MSC-PRO-RM-10588, *Records Management Processes*
 NFPA 45, *Standard on Fire Protection for Laboratories Using Chemicals*
 NFPA 30, *Flammable and Combustible Liquids Code*
 NFPA 400, *Hazardous Materials Code*

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APPENDIX A

Chemical	Definition/Description	Minimum Amount Requiring Permit
Aerosol	Level 1 Level 2 Level 3 *In no case shall the combined net weight (wt) of a level 2 and level 3 aerosol product exceed 1000 lbs. per control area. The level 3 aerosol shall not contribute more than 500 lbs. to this total. Reference Fire Marshal bulletin FMAB-18-001.	No Limit *1000 lbs. net wt *500 lbs. net wt
Cellulose Nitrate Plastic	Cellulose Nitrate Plastic (Pyroxylin) is a plastic substance, material or compound, having cellulose nitrate as a base, or whatever name known, when in the form of blocks, slabs, sheets, tubes or fabricated shapes..	>25 pounds
Combustible Fiber	Readily ignitable and free-burning fibers, such as cotton, sisal, henequen, ixtle, jute, hemp, tow, cocoa fiber, oakum, baled waste, baled waste paper, kapok, hay, straw, excelsior, Spanish moss or other like materials.	>100 cubic feet
Combustible Liquids	A liquid having a flash point at or above 100°F. Combustible liquids are subdivided as follows. The category of combustible liquids does not include compressed gases or cryogenic fluids. <ul style="list-style-type: none"> • CLASS II liquids are those having flash points at or above 100°F and below 140°F. • CLASS III-A liquids are those having flash points at or above 140°F and below 200°F 	- >25 gallons inside - >60 gallons outside (except fuel oil used in conjunction with oil burning equipment)
Corrosive Gases	Corrosive - a chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact. A chemical is considered to be corrosive if, when tested on the intact skin of albino rabbits by the method described in Appendix A to CFR 49, Part 173, it destroys or changes irreversibly the structure of the tissue at the site of contact following an exposure period of four hours. This term does not refer to action of inanimate surfaces. <i>Example:</i> ammonia	>200 cubic feet
Corrosive Liquids	A liquid which, when in contact with living tissue, will cause destruction or irreversible alteration of such tissue by chemical action. Examples include acidic, alkaline or caustic materials.	55 gallons

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Chemical	Definition/Description	Minimum Amount Requiring Permit
Corrosive Solids	A solid which, when in contact with living tissue, will cause destruction or irreversible alteration of such tissue by chemical action. <i>Examples:</i> acidic, alkaline or caustic materials.	500 pounds
Cryogens	A fluid that has a normal boiling point below -130°F. <i>Examples (flammable):</i> hydrogen, methane <i>Examples (oxidizing):</i> fluorine and liquid oxygen <i>Examples (corrosive):</i> fluorine	<u>Inside</u> Corrosive - >1 gal. Flammable - >1 gal. Toxic/Highly Toxic - >1 gal. Nonflamm. - 60 gal. Oxidizer (incl. O ₂) - 10 gal. <u>Outside</u> Corrosive - >1 gal. Flammable - 60 gal. Toxic/Highly Toxic - >1 gal. Nonflamm. - 500 gal. Oxidizer (incl. O ₂) - 50 gal.
Explosives	Explosives are defined as: Any chemical compound or mechanical mixture that is designed to function as an explosive, or chemical compound that functions through self-reaction as an explosive, and that, when subjected to heat, impact, friction, shock, or other suitable initiation stimulus, undergoes a very rapid chemical change with the evolution of large volumes of highly heated gases that exert pressures in the surrounding medium. The term applies to materials that either detonate or deflagrate. <i>Examples:</i> dynamite, TNT, nitroglycerine, C-3, C-4, black powder, smokeless powder, propellant explosives, ammunition and display fireworks	See NFPA 1, Chapter 65, Section 65.9.2.
Flammable Gas	Any material which is a gas at 68°F or less at 14.7 psia of pressure (a material has a boiling point of 68°F or less at 14.7 psia) which: 1. Is ignitable at 14.7 psia when in a mixture of 13 percent or less by volume with air, or 2. Has a flammable range at 14.7 psia with air of at least 12 percent, regardless of the lower limit.	200 cubic feet (except cryogenic fluids and Liquefied Petroleum Gas (LPG))

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Flammable Liquids	<p>A liquid having a flash point below 100°F and having a vapor pressure not exceeding 40 psia at 100°F. The category of flammable liquids does not include compressed gases or cryogenic fluids. Class I liquids are flammable liquids and include those having flash points below 100°F. Class I liquids are subdivided as follows:</p> <ul style="list-style-type: none"> • Class I-A liquids include those having a flash point below 73°F and having a boiling point below 100°F. • Class I-B liquids include those having a flash point below 73°F and having a boiling point at or above 100°F. • Class I-C liquids include those having a flash point at or above 73°F and below 100°F 	<p>>5 gal. Inside >10 gal. Outside</p> <p>See NFPA 1, Table 1.12. 8(a) for exception.</p>
Flammable Solids	<p>A solid substance, other than one which is defined as a blasting agent or explosive, that is liable to cause fire through friction or as a result of retained heat from manufacture, which has an ignition temperature below 212°F, or which burns so vigorously or persistently when ignited that it creates a serious hazard. Flammable solids include finely divided solid materials which when dispersed in air as a cloud could be ignited and cause an explosion.</p> <p>Examples (organic): camphor, cellulose nitrate and naphthalene</p> <p>Examples (Inorganic): decaborane, lithium amide, phosphorous heptasulfide, phosphorous sesquisulfide, potassium sulfide, anhydrous sodium sulfide and sulfur.</p>	100 pounds
Highly Toxic Gases, Liquids and Solids (including pesticides and fumigants)	<p>A material which produces a lethal dose or lethal concentration which falls within any of the following categories:</p> <ol style="list-style-type: none"> 1. A chemical that has a median lethal dose (LD₅₀) of 50 mg/kg or less of body weight when administered orally to albino rats weighing between 200 g and 300 g each. 2. A chemical that has a median lethal dose (LD₅₀) of 200 mg/kg or less of body weight when administered by continuous contact for 24 hours, or less if death occurs within 24 hours, with the base skin of albino rabbits weighing between 2 kg and 3 kg each. 3. A chemical that has a median lethal dose concentration (LC₅₀) in air of 200 parts per million by volume or less of gas or vapor, or 2 mg/L or less of mist, fume or dust, when administered by continuous inhalation for one 	Any Amount

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	<p>hour, or less if death occurs within one hour, to albino rats weighing between 200 g and 300 g each.</p> <p>Mixtures of these materials with ordinary materials, such as water, might not warrant classification as highly toxic.</p> <p>While this system is basically simple in application, any hazard evaluation that is required for the precise categorization of this type of material shall be performed by experienced, technically competent persons.</p>	
Inert and Simple Asphyxiant Gases	<p>Inert Gas – Any gas that is nonflammable, nonreactive, and noncontaminating.</p> <p>Simple Asphyxiant Gas - A gas that does not provide sufficient oxygen to support life and that has none of the other physical or health hazards Asphyxiants work by displacing oxygen from the ambient atmosphere thus reducing available oxygen inhaled in the lungs which is used by the hemoglobin in the blood to oxygenate the tissues. As a result, the victim slowly suffocates.</p> <p>Examples: nitrogen (N₂), helium (He), neon (Ne), argon (Ar), methane (CH₄), propane (CH₃CH₂CH₃), and carbon dioxide (CO₂).</p>	6,000 cubic feet
Liquefied Petroleum Gases	<p>A material having a vapor pressure not exceeding that allowed for commercial propane gas that is composed predominantly of following hydrocarbons, either by mixtures: propane, propylene, butane (normal butane or isobutane) and butylenes.</p>	<ol style="list-style-type: none"> 1. >125 gallons (water capacity) 2. To install or modify LP Gas systems.
Nitrate Film	<p>See explosive materials-not in general use today.</p>	Any Amount
Oxidizing Gases	<p>A gas that can support combustion in other materials, thereby causing fire either by itself or through the release of oxygen or other gases.</p> <p>Examples: oxygen, ozone, oxides of nitrogen fluorine and chlorine</p>	504 cubic feet
Oxidizing Liquids	<p>A liquid that can support combustion in other materials, thereby causing fire either by itself or through the release of oxygen or other gases.</p> <p>Examples: bromine, hydrogen peroxide, nitric acid, perchloric acid, sulfuric acid</p>	<p>Class 4 - Any Amount</p> <p>Class 3 - 1 gal.</p> <p>Class 2 -10 gal.</p> <p>Class 1 - 55 gal.</p>
Oxidizing Solids	<p>A solid that can support combustion in other materials, thereby causing fire either by itself or through the release of oxygen or other gases.</p> <p>Examples: chlorates, chromates, chromic acid, iodine, nitrates, perchlorates, peroxides</p>	<p>Class 4 – Any Amount</p> <p>Class 3 - 10 pounds</p> <p>Class 2 -100 pounds</p> <p>Class 1 - 500 pounds</p>

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Chemical	Definition/Description	Minimum Amount Requiring Permit
Organic Peroxide Liquids and Solids	<p>An organic compound that contains the bivalent –O-O- structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms have been replaced by an organic radical. Organic peroxides can present an explosion hazard (detonation or deflagration) or they can be shock sensitive. They can also decompose into various unstable compounds over an extended period of time.</p> <p>Examples: Unclassified detonable organic peroxides – Organic peroxides that are capable of detonation. Class 1 – acetyl cyclohexane sulfonyl 60-65% concentration by weight, fulfonyl peroxide, diisopropyl peroxydicarbonate 100% Class 2 – acetyl peroxide 25%, t-butyl hydroperoxide 70%, peroxyacetic acid 43% Class 3 – benzoyl peroxide 78%, cumene hydroperoxide 86%, decanoyl peroxide 98.5% Class 4 – benzoyl peroxide 70%, t-butyl hydroperoxide 70%, decumyl peroxide 98%, Class 5 – benzoyl peroxide 35%, 1,1-di-tbutyl peroxy 3,5,5-trimethylcyclohexane 40%</p>	Unclassified Detonable – Any amount Class I – Any Amount Class II - Any Amount Class III - 10 pounds Class IV - 20 pounds
Pyrophoric Gases	<p>A gas with an autoignition temperature in air at or below 130°F.</p> <p>Examples: diborane, phosphine, silane</p>	Any Amount
Pyrophoric Liquids	<p>A liquid chemical that spontaneously ignites in air at or below a temperature of 130°F.</p> <p>Examples: diethyl aluminum chloride, diethyl beryllium, diethyl phosphine, diethyl zinc, dimethyl arsine, triethyl aluminum etherate, triethyl bismuthine, triethyl boron, trimethyl aluminum and trimethyl gallium.</p>	Any Amount
Pyrophoric Solids	<p>A solid chemical that spontaneously ignites in air at or below a temperature of 130°F.</p> <p>Examples: cesium, hafnium, lithium, white or yellow phosphorus, plutonium, potassium, rubidium, sodium and thorium.</p>	Any Amount

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Chemical	Definition/Description	Minimum Amount Requiring Permit
Toxic Gases	<p>A gas with a median lethal concentration (LD₅₀) in air of more than 200 parts per million but not more than 2,000 parts per million by volume of gas or vapor, or more than two milligrams per liter but not more than 20 milligrams per liter of mist, fume or dust, when administered by continuous inhalation for one hour, or less if death occurs within one hour, to albino rats weighing between 200 and 300 grams each.</p> <p><i>Examples:</i> arsine, cyanogen, diborane, fluorine, germane, hydrogen cyanide, nitric oxide</p>	Any Amount
Toxic Liquids	<p>A liquid material which produces a lethal dose or a lethal concentration within any of the following categories:</p> <ol style="list-style-type: none"> 1. A material that has a median lethal dose (LD₅₀) of 50 milligrams or less per kilogram but not more than 500 milligrams per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each. 2. A material that has a median lethal dose (LD₅₀) of more than 200 milligrams per kilogram but not more than 1,000 milligrams per kilogram of body weight when administered by continuous contact for 24 hours, or less if death occurs within 24 hours, with the bare skin of albino rabbits weighing between 2 and 3 kilograms each. <p><i>Examples:</i> acrolein, acrylic acid, hydrazine, hydrocyanic acid, tromethane, tetraethylstannane</p>	10 gal.
Toxic Solids	<p>A solid material which produces a lethal dose or a lethal concentration within any of the following categories:</p> <ol style="list-style-type: none"> 1. A material that has a median lethal dose (LD₅₀) of 50 milligrams or less per kilogram but not more than 500 milligrams per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each. 2. A material that has a median lethal dose (LD₅₀) of more than 200 milligrams per kilogram but not more than 1,000 milligrams per kilogram of body weight when administered by continuous contact for 24 hours, or less if death occurs within 24 hours, with the bare skin of albino rabbits weighing between 2 and 3 kilograms each. <p><i>Examples:</i> acrolein, acrylic acid, hydrazine, hydrocyanic acid, tromethane, tetraethylstannane</p> <p><i>Examples:</i> phenylmercury, arsenic pentoxide, calcium cyanide, aflatoxin B, barium chloride, cadmium chloride, chromium oxide, mercury chloride</p>	100 pounds

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Chemical	Definition/Description	Minimum Amount Requiring Permit
Unstable (Reactive) Gases	A gas that in the pure state or as commercially produced will vigorously polymerize, decompose, condense, become self-reactive or otherwise undergo a violent chemical change, under conditions of shock, pressure or temperature.	Any Amount
Unstable (Reactive) Solids	A solid material that in the pure state or as commercially produced will vigorously polymerize, decompose, condense, become self-reactive or otherwise undergo a violent chemical change, under conditions of shock, pressure or temperature	Class 4 – Any Amount Class 3 - Any Amount Class 2 - 50 pounds Class 1 - 100 pounds
Unstable (Reactive) Liquids	A liquid material that in the pure state or as commercially produced will vigorously polymerize, decompose, condense, become self-reactive or otherwise undergo a violent chemical change, under conditions of shock, pressure or temperature. Examples: Class 4 – acetyl peroxide, dibutyl peroxide, dinitrobenzene, ethyl nitrate, peroxyacetic acid, trinitrobenzene Class 3 – hydrogen peroxide >52%, hydroxylamine, paranitroaniline, perchloric acid Class 2 – acrolein, acrylic acid, hydrazine, methacrylic acid, sodium perchlorate, styrene Class 1 – acetic acid hydrogen peroxide 35% to 52%, paraldehyde, tetrahydrofuran	Class 4 - Any Amount Class 3 - Any Amount Class 2 - 5 gal. Class 1 - 10 gal.
Water-Reactive Liquids	A material which explodes; violently reacts; produces flammable, toxic or other hazardous gases; or evolves enough heat to cause self-ignition or ignition of nearby combustibles upon exposure to water or moisture. Examples: Class 3: triethylaluminum, isobutylaluminum, trimethylaluminum, bromine pentafluoride, bromine trifluoride Class 2: calcium carbide, calcium metal, cyanogen bromide, lithium hydride, potassium metal, sodium metal, sodium peroxide, sulfuric acid Class 1: acetic anhydride, sodium hydroxide, sulfur monochloride, titanium tetrachloride	Class 3 - Any Amount Class 2 - 5 gal. Class 1 - 10 gal.
Water-Reactive Solids	Same definition as Water – Reactive Liquids above.	Class 3 - Any Amount Class 2 - 50 pounds Class 1 - 100 pounds

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APPENDIX B

OCCUPANCY PERMIT CHECKLIST				
Building:		FPE/DFM:		
Occupancy Type:				
Item/Inspection Criteria	Yes	No	N/A	Comments/Deficiencies
Identification				
Facility Identified per MSC-RD-FP-10606				
Identification Visible from Street				
Construction				
Building Construction Complete				
Electrical Inspected				
Portable Fire Extinguishers (PFX)				
Mounted				
a. At the Correct Height				
b. Not Obstructed				
c. Location Sign (if applicable)				
Inspection Tag				
Operable				
Appropriate Type (based on hazards)				
Appropriate Quantity of PFXs				
Notification Made to HFD ¹				
Fire Protection Systems (Active)				
<u>Suppression Systems</u>				
Certificate of Completion				
In Service				
<u>Alarm Systems</u>				
ATP Complete				
In service				
Fire Protection Systems (Passive)				
Fire Doors and Hardware in place, Operable				
Fire Wall Penetrations Sealed				
Life Safety Review Complete (including, but not limited to)				
Appropriate Signs Installed (exit, no exit, etc.)				
Exit Path Unobstructed, Illuminated				
Exit Discharge Stairs/Handrails Compliant				
Emergency Lighting				

NOTE: Employees may print off this document for reference purposes but are responsible to check MSA PS to ensure the most current version is used to prevent unintended use of obsolete versions.

Hanford Fire Marshal Permits

Published Date: 11/20/2018

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Provided				
Operable				
Illuminates Exit Path				
Pre-Incident Plan				
In Place				
Accurate				
Current or notification made to HFD Operations				
Point of Contact Person				
Assigned				
Emergency Building Access				
Unobstructed				
Emergency Preparedness (Ref: MSC-RD-EM-7647)				
Boards in Place				
Evacuation Routes Identified				
Staging Areas Identified				
Building Emergency Director/Building Warden Assigned				
Wildfire Exposure				
Defensible Space Adequate				

¹ Send notification of number and location of PFXs to HFD via HFDE@rl.gov (^HFD Extinguishers).