California Code of Regulations, Title 19, Division 5, Chapter 2

California Accidental Release Prevention (CalARP) Regulations

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https://govt.westlaw.com/calregs/Browse/Home/California/CaliforniaCodeofRegulations?guid=IC40AE0B0E06511EEACF3F1DC5B9B394F&originationContext=documenttoc&transitionType=Default&contextData=(sc.Default)

California Environmental Protection Agency

California Accidental Release Prevention (CalARP) Program Detailed Analysis

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Article 1. General

§ 5050.1. Purpose.

The CalARP Program includes the federal Chemical Accident Prevention Provisions [Title 40, Code of Federal Regulations (CFR) Part 68] with certain additions specific to the state pursuant to Article 2, Chapter 6.95, of the Health and Safety Code (HSC). The purpose of the CalARP Program is to prevent the accidental releases of regulated substances. The list of regulated substances is in Section 5130.5 of this chapter.

Stationary sources with more than a threshold quantity of a regulated substance shall be evaluated to determine the potential for and impacts of accidental releases from that covered process. Under conditions specified by this chapter, the owner or operator of a stationary source may be required to develop and submit a risk management plan (RMP). The RMP components and submission requirements are identified in Article 3 of this chapter.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; and Sections 25531.2, 25533, 25535.1 and 25543, Health and Safety Code.

§ 5050.2. Scope.

This chapter sets forth:

(a) the list of regulated substances and thresholds,

(b) the requirements for owners and operators of stationary sources concerning the prevention of accidental releases,

(c) the accidental release prevention programs approved under Section 112(r) of the federal Clean Air Act (CAA) Amendments of 1990 and mandated under the CalARP program, and

(d) how the CalARP program relates to the state's Unified Program.

The list of substances, threshold quantities, and accident prevention regulations promulgated under this chapter do not in any way limit the general duty provisions under Section 112(r)(1) of the federal CAA.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Sections 25531, 25532 and 25533, Health and Safety Code; and Section 68.1, Part 68, Title 40, Code of Federal Regulations.

§ 5050.3. Definitions.

For the purposes of this chapter only:

(a) "Accidental release" means an unanticipated emission of a regulated substance or other extremely hazardous substance into the ambient air from a stationary source.

(b) "Administrative controls" means written procedural mechanisms used for hazard control.

(c) "Administrator" means the administrator of the USEPA.

(d) "Agency" means the California Environmental Protection Agency.

(e) "AIChE/CCPS" means the American Institute of Chemical Engineers/Center for Chemical Process Safety.

(f) "API" means the American Petroleum Institute.

(g) "Article" means a manufactured item, as defined under Section 5189 of Title 8 of the California Code of Regulations (CCR), that is formed to a specific shape or design during manufacture, that has end use functions dependent in whole or in part upon the shape or design during end use, and that does not release or otherwise result in exposure to a regulated substance under normal conditions of processing and use.

(h) "ASME" means the American Society of Mechanical Engineers.

(i) "Cal OSHA" means the California Occupational Safety and Health Administration.

(j) "CAS" means the Chemical Abstracts Service.

(k) "CFR" means the Code of Federal Regulations.

(l) "Catastrophic release" means a major uncontrolled emission, fire, or explosion, involving one or more regulated substances that presents an imminent and substantial endangerment to public health and the environment.

(m) "Change" means any alteration in process chemicals, technology, procedures, equipment, facilities or organization that could affect a process. A change does not include replacement-in-kind.

(n) "Classified information," as defined in the Classified Information Procedures Act, Appendix 3 of Section 1(a) of Title 18 of the United States Code, means "any information or material that has been determined by the United States Government pursuant to an executive order, statute, or regulation, to require protection against unauthorized disclosure for reasons of national security."

(o) "Condensate" means hydrocarbon liquid separated from natural gas that condenses due to changes in temperature, pressure, or both, and remains liquid at standard conditions.

(p) Covered process" means a process that has a regulated substance present in more than a threshold quantity as determined under Section 5130.2 of this chapter.

(q) "Crude oil" means any naturally occurring, unrefined petroleum liquid.

(r) "Damage mechanism" means the mechanical, chemical, physical, or other process that results in equipment or material degradation.

(s) "DOT" means the United States Department of Transportation.

(t) "Employee representative" means a union representative, where a union exists, or an employee designated representative in the absence of a union that is on-site and qualified for the task. The term is to be construed broadly, and may include the local union, the international union, or an individual designated by these parties, such as the safety and health committee representative at the site.

(u) "Environmental receptor" means natural areas such as national or state parks, forests, or monuments; officially designated wildlife sanctuaries, preserves, refuges, or areas; and Federal wilderness areas, that could be exposed at any time to toxic concentrations, radiant heat, or overpressure greater than or equal to the endpoints provided in Section 5080.2(a), as a result of an accidental release and that can be identified on local United States Geological Survey maps.

(v) "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time taking into account health, safety, economic, environmental, legal, social, and technological factors.

(w) "Field gas" means gas extracted from a production well before the gas enters a natural gas processing plant.

(x) "Hierarchy of Hazard Control" means prevention and control measures, in priority order, to eliminate or minimize a hazard. Hazard prevention and control measures ranked from most effective to least effective are: First Order Inherent Safety, Second Order Inherent Safety, and passive, active and procedural protection layers.

(y) "Highly hazardous material" means a flammable liquid, flammable gas, toxic or reactive substance as those terms are defined: (1) flammable gas, as defined in California Code of Regulation (CCR) Title 8, § 5194, Appendix B, (2) flammable liquid, as defined in CCR Title 8, § 5194, Appendix B, (3) toxic substances as acute toxicity is defined in CCR Title 8, § 5194, Appendix A, and (4) reactive substance as self-reactive chemical, as defined in CCR Title 8, § 5194, Appendix B. Highly hazardous material includes all regulated substances listed in Tables 1, 2, and 3 of this Chapter.

(z) "Hot work" means work involving electric or gas welding, cutting, brazing, or similar flame or spark-producing operations.

(aa) "Human factor" means a discipline concerned with designing machines, operations, and work environments so that they match human capabilities, limitations, and needs. Human

factors include environmental, organizational, and job factors, and human and individual characteristics, such as fatigue, that can affect job performance, process safety, and health and safety.

(bb) "Independent Protection Layer (IPL)" means a safeguard that reduces the likelihood or consequences of a major incident through the application of devices, systems, or actions and is (1) independent of an initiating cause and (2) independent of other IPLs. Independence ensures that an initiating event does not affect the function of an IPL and that failure in any one layer does not affect the function of any other layer.

(cc) "Inherent safety" means an approach to safety that focuses on eliminating or reducing the hazards associated with a set of conditions. A process is inherently safer if it reduces or eliminates the hazards associated with materials or operations used in the process, and this reduction or elimination is permanent and inseparable from the material or operation. A process with reduced hazards is described as inherently safer compared to a process with only passive, active, and procedural safeguards. The process of identifying and implementing inherent safety in a specific context is known as inherently safer design.

(1) "First Order Inherent Safety measure" is a measure that eliminates a hazard. Changes in the chemistry of a process that eliminate the hazard(s) of the chemicals used or produced are usually considered First Order Inherent Safety measures; for example, by substituting a flammable chemical with an alternative chemical that can serve the same function but with lower vapor pressure and narrower flammable range.

(2) "Second Order Inherent Safety measure" is a measure that reduces the severity of a hazard or the likelihood of a release without the use of add-on safety devices. Changes in process variables to minimize, moderate and simplify a process are usually considered Second Order Inherent Safety measures; for example, redesigning a high-pressure, high-volume, and high-temperature system to operate at lower temperatures, volumes, and pressures.

(dd) "Initiating cause" means an operational error, mechanical failure, or other internal or external event that is the first event in an incident sequence and marks the transition from a normal situation to an abnormal situation.

(ee) "Injury" means any effect on a human that results either from direct exposure to toxic concentrations; radiant heat; or overpressures from accidental releases or from the direct consequences of a vapor cloud explosion (such as flying glass, debris, and other projectiles) from an accidental release and that requires medical treatment or hospitalization.

(ff) "Interested parties" means those residents, workers, students and others who would be potentially affected by an accidental or catastrophic release.

(gg) "Isolate" means to cause equipment to be removed from service and completely protected against the inadvertent release or introduction of material or energy by such means as blanking or blinding; misaligning or removing sections of lines, pipes, or ducts;

implementing a double block and bleed system; or blocking or disconnecting all mechanical linkages.

(hh) "Major change" means: (1) introduction of a new process, or (2) new process equipment, or new regulated substance that results in any operational change outside of established safe operating limits; or (3) any alteration in a process, process equipment, or process chemistry that introduces a new hazard or increases an existing hazard.

(ii) "Major incident" means an event within or affecting a process that causes a fire, explosion or release of a highly hazardous material, and has the potential to result in death or serious physical harm (as defined in Labor Code Section 6432(e)), or results in an officially declared public shelter-in-place, or evacuation order.

(jj) "Mechanical integrity" means the process of ensuring that process equipment is fabricated from the proper materials of construction and is properly installed, maintained, and replaced to prevent failures and accidental releases.

(kk) "Medical treatment" means treatment, other than first aid, administered by a physician or registered professional personnel under standing orders from a physician.

(ll) "Mitigation or mitigation system" means specific activities, technologies, or equipment designed or deployed to capture or control substances upon loss of containment to minimize exposure of the public or the environment. Passive mitigation means equipment, devices, or technologies that function without human, mechanical, or other energy input. Active mitigation means equipment, devices, or technologies that need human, mechanical, or other energy input to function.

(mm) "Modified stationary source" means a stationary source which has undergone an addition or change which qualifies as a "major change" as defined in (hh) of this section.

(nn) "NAICS" means the North American Industry Classification System.

(oo) "NFPA" means the National Fire Protection Association.

(pp) "Natural gas processing plant" (gas plant) means any processing site engaged in the extraction of natural gas liquids from field gas, fractionation of mixed natural gas liquids to natural gas products, or both, classified as North American Industrial Classification System (NAICS) code 211112 (previously Standard Industrial Classification (SIC) code 1321).

(qq) "New stationary source" means a stationary source that now has a covered process that is not currently in the CalARP program.

(rr) "Offsite" means areas beyond the property boundary of the stationary source, and areas within the property boundary to which the public has routine and unrestricted access during or outside business hours.

(ss) "OSHA" means the Occupational Safety and Health Administration.

(tt) "Owner or operator" means any person who owns, leases, operates, controls, or supervises a stationary source.

(uu) "Part 68" means Part 68 of Subpart A of Subchapter C of Chapter I of Title 40 of CFR.

(vv) "Petroleum refinery" means a stationary source engaged in activities set forth in North American Industry Classification System (NAICS) code 324110.

(ww) "Population" means the public.

(xx) "Process" means any activity involving a regulated substance including any use, storage, manufacturing, handling, or on-site movement of such substances, or combination of these activities. For the purposes of this definition, any group of vessels that are interconnected, or separate vessels that are located such that a regulated substance could be involved in a potential release, shall be considered a single process. This definition shall not apply to Article 7.

(yy) "Process" for purposes of Article 7, means petroleum refining activities involving a highly hazardous material, including use, storage, manufacturing, handling, piping, or on-site movement. For the purposes of this definition, any group of vessels that are interconnected, or separate vessels that are located such that an incident in one vessel could affect any other vessel, shall be considered a single process. Utilities and safety related devices shall be considered part of the process if, in the event of an unmitigated failure or malfunction, they could potentially contribute to a major incident. This definition includes processes under partial or unplanned shutdowns. Ancillary administrative and support functions, including office buildings, laboratories, warehouses, maintenance shops, and change rooms are not considered processes under this definition.

(zz) "Process equipment" for purposes of Article 7, means equipment, including but not limited to: pressure vessels, rotating equipment, piping, instrumentation, process control, safeguard, except procedural safeguards, or appurtenance related to a process.

(aaa) "Process safety hazard" means a characteristic of a process that, if unmitigated, has the potential to cause a fire, explosion, or release of a highly hazardous material which could result in death or serious physical harm or a major incident.

(bbb) "Process safety culture" means a combination of group values and behaviors that reflect whether there is a collective commitment by leaders and individuals to emphasize process safety over competing goals in order to ensure protection of people and the environment.

(ccc) "Process safety performance indicators" means measurements of the facility's activities and events that are used to evaluate the performance of process safety systems.

(ddd) "Produced water" means water extracted from the earth from an oil or natural gas production well, or that is separated from oil or natural gas after extraction.

(eee) "Public" means any person except employees or contractors at the stationary source.

(fff) "Public receptor" means offsite residences, institutions (e.g., schools, hospitals), industrial, commercial, and office buildings, parks, or recreational areas inhabited or occupied by the public at any time without restriction by the stationary source where members of the public could be exposed to toxic concentrations, radiant heat, or overpressure, as a result of an accidental release.

(ggg) "Qualified operator" for the purposes of Article 7 means a person designated by the owner or operator, who by fulfilling the requirements of the training program defined in Section 5110.7, has demonstrated the ability to safely perform all assigned duties.

(hhh) "Qualified person" means a person who is qualified to attest, at a minimum to: (1) the validity and appropriateness of the process hazard analyses (PHA) performed pursuant to Section 5100.2; (2) the completeness of a risk management plan; and (3) the relationship between the corrective steps taken by the owner or operator following the PHAs and those hazards which were identified in the analyses.

(iii) "Qualified position" means a person occupying a position who is qualified to attest, at a minimum to: (1) the validity and appropriateness of the PHA performed pursuant to Section 5100.2; (2) the completeness of a risk management plan; and (3) the relationship between the corrective steps taken by the owner or operator following the PHAs and those hazards which were identified in the analyses.

(jjj) "Recognized and Generally Accepted Good Engineering Practices (RAGAGEP)" for purposes of Article 7 means engineering, operation, or maintenance activities based on codes, standards, technical reports or recommended practices published by the American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE), American Society of Mechanical Engineers (ASME), American Society of Testing and Materials (ASTM), National Fire Protection Association (NFPA), Instrument Society of America (ISA), or other standard-setting organizations. RAGAGEP does not include standards or guidelines developed for internal use by the owner or operator.

(kkk) "Regulated substance" means any substance, unless otherwise indicated, listed in Section 5130.6 of this chapter.

(lll) "Replacement in kind" means a replacement that satisfies the design specifications.

(mmm) "Retail facility" means a stationary source at which more than one-half of the income is obtained from direct sales to end users or at which more than one-half of the fuel sold, by volume, is sold through a cylinder exchange program.

(nnn) "Revalidation" means a critical review of a hazard review or a process hazard analysis (PHA) with qualified team members of the most recent hazard review or PHA studies to verify that past studies remain valid and that changes made to the covered process are properly assessed. This critical review is to ensure that hazards are well understood, and existing safeguards are properly identified, past recommendations have been addressed,

the overall risk ranking of each scenario is accurate, and relevant incidents and near misses at the stationary source and industry are evaluated. For situations when past studies cannot be readily revalidated, a new complete hazard review or PHA may be warranted.

(ooo) "RMP" means the risk management plan as described by the component elements identified in Article 3 of this chapter.

(ppp) "Safeguard" means a device, system, or action designed and maintained to interrupt the chain of events or mitigate the consequences following an initiating cause.

(1) "Passive Safeguards" means minimizing the hazard through process and equipment design features that reduce either the frequency or consequence of the hazard without the active functioning of any device; for example, by providing a diked wall around a storage tank of flammable liquids.

(2) "Active Safeguards" means using controls, alarms, safety instrumented systems, and mitigation systems to detect and respond to deviations from normal process operations; for example, by using a pump that is shut off by a high-level switch in the downstream tank when the tank is 90% full.

(3) "Procedural Safeguards" means using policies, operating procedures, training, emergency response and other administrative approaches to prevent incidents or to minimize the effects of an incident. Examples include hot work procedures and permits and emergency response procedures implemented by employees.

(qqq) "Safety instrumented systems" means systems designed to achieve or maintain safe operation of a process in response to an unsafe process condition.

(rrr) "Stationary source" means any buildings, structures, equipment, installations, or substance emitting stationary activities which belong to the same industrial group, which are located on one or more contiguous properties, which are under the control of the same person (or persons under common control), and from which an accidental release may occur. The term stationary source does not apply to transportation, including storage incident to transportation, of any regulated substance or any other extremely hazardous substance under the provisions of this chapter. A stationary source includes transportation containers used for storage not incident to transportation and transportation containers connected to equipment at a stationary source for loading or unloading. Transportation includes, but is not limited to, transportation subject to oversight or regulations under Part 192, 193, or 195 of Title 49 of CFR, or a state natural gas or hazardous liquid program for which the state has in effect a certification to DOT under Section 60105 of Title 49 of USC. A stationary source does not include naturally occurring hydrocarbon reservoirs. Properties shall not be considered contiguous solely because of a railroad or pipeline right-of-way.

(sss) "Temporary pipe or equipment repair" means a repair of an active or potential leak from process piping or equipment. This definition includes active or potential leaks in

utility piping or utility equipment that could affect a process and that could result in a major incident.

(ttt) "Threshold quantity" means the quantity specified for a regulated substance pursuant to Section 5130.6 and determined to be present at a stationary source as specified in Section 5130.2 of this chapter.

(uuu) "Trade secret" means trade secrets as defined in Section 6254.7 of Subdivision (d) of the Government Code and Section 1060 of the Evidence Code and includes information submitted to a Unified Program Agency which has been designated by the stationary source as trade secret and which shall not be released by the UPA except to authorized officers and employees of other governmental agencies, and only in connection with the official duties of that officer or employee pursuant to any law for the protection of health and safety. Trade secret information is to be handled pursuant to Section 25538 of HSC.

(vvv) "Turnaround" means a planned process shutdown for the purpose of repair, maintenance, process modification, equipment upgrade or other significant process activity. This definition does not apply to Article 7.

(www) "Turnaround" for purposes of Article 7 means planned total or partial shutdown of a petroleum refinery process unit or plant to perform maintenance, overhaul or repair of a process and process equipment, and to inspect, test and replace process materials and equipment. Turnaround does not include unplanned shutdowns that occur due to emergencies or other unexpected maintenance matters in a process unit or plant. Turnaround also does not include routine maintenance, where routine maintenance consists of regular, periodic maintenance on one or more pieces of equipment at a refinery process unit or plant that may require shutdown of such equipment.

(xxx) "Typical meteorological conditions" means the temperature, wind speed, cloud cover, and atmospheric stability class, prevailing at the site based on data gathered at or near the site or from a local meteorological station.

(yyy) "Unified Program Agency (UPA)" means the local agency, pursuant to HSC Section 25501, responsible to implement the CalARP Program.

(zzz) "Utility" for purposes of Article 7, means a system that provides energy or other process-related services to enable the safe operation of a petroleum refinery process. This definition includes electrical power, fire water systems, steam, instrument power, instrument air, nitrogen, and carbon dioxide.

(aaaa) "Vessel" means any reactor, tank, drum, barrel, cylinder, vat, kettle, boiler, pipe, hose, or other container.

(bbbb) "Worst-case release" means the release of the largest quantity of a regulated substance from a vessel or process line failure that results in the greatest distance to an endpoint defined in Section 5080.2(a) of this chapter.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; and Sections 25501 and 25532, Health and Safety Code; and Section 68.3, Part 68, Title 40, Code of Federal Regulations.

§ 5050.4. Applicability.

(a) The requirements of this chapter apply to an owner or operator of a stationary source with more than a threshold quantity of a regulated substance in a process. Regulated substances are listed in three separate tables in Section 5130.6 of this chapter. An owner or operator of a stationary source shall comply with one of the following:

(1) If a stationary source has a process with more than a threshold quantity of a regulated substance as listed in Table 1 or 2 of Section 5130.6, the owner or operator shall comply with the provisions of this chapter pursuant to the time frames identified in Section 5070.1(b);

(2) If a stationary source has a process with more than a threshold quantity of a regulated substance as listed in Table 3 of Section 5130.6, and the UPA makes a determination pursuant to Section 25534 of HSC that an RMP is required, the owner or operator shall comply with the appropriate provisions of this chapter pursuant to the time frame identified in Section 5070.1(d) or (e); or,

(3) If a stationary source has a process with more than a threshold quantity of a regulated substance as listed in Tables 1 or 2 and Table 3 of Section 5130.6, the owner or operator shall comply with the provision of this chapter pursuant to the time frames identified in Section 5070.1(b).

(b) The CalARP program defines four program levels with different levels of requirements depending upon the complexity, accident history, and potential impact of releases of regulated substances.

(c) Program 1 eligibility requirements. A covered process is eligible for Program 1 requirements as provided in Section 5050.5(d) if it meets all of the following requirements:

(1) For the five years prior to the submission of an RMP, the process has not had an accidental release of a regulated substance where exposure to the substance, its reaction products, overpressure generated by an explosion involving the substance, or radiant heat generated by a fire involving the substance has led to any of the following offsite consequences:

(A) Death;

(B) Injury; or,

(C) Response or restoration activities for an exposure of an environmental receptor or a public receptor;

(2) The distance to a toxic or flammable endpoint for a worst-case release assessment conducted under Article 4 of Section 5080.3 is less than the distance to any public receptor, as defined in Section 5050.3(fff) and Section 5080.5; and,

(3) Emergency response procedures have been coordinated between the stationary source and local emergency planning and response organizations.

(d) Program 2 eligibility requirements. A covered process is subject to Program 2 requirements if it does not meet the eligibility requirements of section (c), (e) or (f).

(e) Program 3 eligibility requirements. A covered process is subject to Program 3 if the process does not meet the requirements of section (c), and if any of the following conditions apply:

(1) The process is in NAICS code 322110, 325110, 325180, 325194, 325199, 325211, 325311, or 325320.

(2) The process is subject to the Cal OSHA process safety management standards of Section 5189 of Title 8 of CCR.

(3) The UPA determines that the accident risk posed by the regulated substance in a process above the threshold quantity as listed in Table 3 of Section 5130.6, because of the nature and quantity of the regulated substance involved, requires the additional safety measures afforded by Program 3 requirements, pursuant to section 25534 of HSC.

(f) Program 4 eligibility requirements. A stationary source is subject to Program 4 if it is engaged in activities set forth in NAICS code 324110.

(g) If at any time a covered process no longer meets the eligibility criteria of its Program level, the owner or operator shall comply with the requirements of the new Program level that applies to the process and update the RMP as provided in Section 5070.11.

(h) The provisions of this chapter shall not apply to an Outer Continental Shelf ("OCS") source, as defined in Section 55.2 of Title 40 of CFR.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; Sections 25534, 25535(d) and 25536, Health and Safety Code; and Section 68.10, Part 68, Title 40, Code of Federal Regulations.

§ 5050.5. General Requirements.

(a) Coordination. The owner or operator of a stationary source shall closely coordinate with the UPA to implement the requirements of this chapter and to determine the appropriate level of documentation required for an RMP to comply with Sections 5070.3 through 5070.10 of this chapter. This requirement shall not preclude public access to RMP information. Classified information need not be included in the RMP but shall be made

available to the UPA to the extent allowable by law. Trade secrets are protected pursuant to Section 25538 of HSC.

(b) General requirements for RMPs.

(1) The owner or operator of a stationary source that is subject to this chapter, pursuant to Section 5050.4, shall submit an RMP which includes all requirements described in Section 5070.3 through 5070.10.

(2) The RMP shall include a registration that reflects all covered processes.

(c) Model RMPs may be used by stationary sources if accepted for use by UPAs, in consultation with Agency. Model RMPs for a process that has in excess of a threshold quantity of a regulated substance listed in Table 1 or 2 of Section 5130.6 must also be recognized by USEPA. Agency may limit the use, application, or scope of these models.

(d) Program 1 requirements. In addition to meeting the requirements of section (b), the owner or operator of a stationary source with a process eligible for Program 1, as provided in Section 5050.4(c) shall:

(1) Analyze the worst-case release scenario for the process(es), as provided in Section 5080.3; document that the nearest public receptor is beyond the distance to a toxic or flammable endpoint defined in Section 5080.2(a); and submit in the RMP the worst-case release scenario as provided in Section 5070.4;

(2) Complete the five-year accident history for the process as provided in Section 5080.9 of this chapter and submit it in the RMP as provided in Section 5070.5;

(3) Ensure that response actions have been coordinated with local emergency planning and response agencies (e.g., site visits by first responders); and,

(4) Certify in the RMP the following: “Based on the criteria in Section 5050.4 of Title 19 of CCR, the distance to the specified endpoint for the worst-case accidental release scenario for the following process(es) is less than the distance to the nearest public receptor: [list process(es)]. Within the past five years, the process(es) has (have) had no accidental release that caused offsite impacts provided in the risk management program Section 5050.4(c)(1). No additional measures are necessary to prevent offsite impacts from accidental releases. In the event of fire, explosion, or a release of a regulated substance from the process(es), entry within the distance to the specified endpoints may pose a danger to public emergency responders. Therefore, public emergency responders should not enter this area except as arranged with the emergency contact indicated in the RMP. The undersigned certifies that, to the best of my knowledge, information, and belief, formed after reasonable inquiry, the information submitted is true, accurate, and complete. (Signature, title, date signed).”

(e) Program 2 requirements. In addition to meeting the requirements of section (b), the owner or operator of a stationary source with a process subject to Program 2, as provided in Section 5050.4(d), shall:

(1) Develop and implement a management system as provided in Section 5050.6;

(2) Conduct a hazard assessment as provided in Sections 5080.1 through 5080.9;

(3) Implement the Program 2 prevention steps provided in Sections 5090.1 through 5090.7 or implement the Program 3 prevention steps provided Sections 5100.1 through 5100.12;

(4) Develop and implement an emergency response program as provided in Sections 5120.1 and 5120.2; and

(5) Submit as part of the RMP the data on prevention program elements for Program 2 processes as provided in Section 5070.6.

(f) Program 3 requirements. In addition to meeting the requirements of section (b), the owner or operator of a stationary source with a process subject to Program 3, as provided in Section 5050.4(e) shall:

(1) Develop and implement a management system as provided in Section 5050.6;

(2) Conduct a hazard assessment as provided in Sections 5080.1 through 5080.9;

(3) Implement the prevention requirements of Sections 5100.1 through 5100.12;

(4) Develop and implement an emergency response program as provided in Sections 5120.1 and 5120.2; and,

(5) Submit as part of the RMP the data on prevention program elements for Program 3 processes as provided in Section 5070.7.

(g) Program 4 requirements. In addition to meeting the requirements of section (b), the owner or operator of a stationary source, as defined in Section 5050.4(f) shall:

(1) Conduct a hazard assessment as provided in Sections 5080.1 through 5080.9;

(2) Implement the prevention and management system requirements of Sections 5110.3 through 5110.20; and submit as part of the RMP the data on prevention program elements for Program 4 processes as provided in Section 5070.8.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; and Sections 25533, 25534, 25534.05 and 25538, Health and Safety Code; and Section 68.12, Part 68, Title 40, Code of Federal Regulations.

§ 5050.6. CalARP Program Management System.

(a) The owner or operator of a stationary source with processes subject to Program 2 or Program 3 shall develop a management system to oversee the implementation of the risk management program elements. The owner or operator of a stationary source with processes subject to Program 4 shall develop a management system as stated in Section 5110.19.

(b) The owner or operator shall assign a qualified person or position that has the overall responsibility for the development, implementation, and integration of the risk management program elements.

(c) When responsibility for implementing individual requirements of this chapter is assigned to persons other than the person identified under section (b), the names or positions of these people shall be documented and the lines of authority defined through an organization chart or similar document.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; Sections 25534.1, 25535.1, 25535 and 25536, Health and Safety Code; and Section 68.15, Part 68, Title 40, Code of Federal Regulations.

§ 5050.7. Emergency Information Access.

Upon request of a state or local emergency response agency the UPA shall provide immediate access to all components of the CalARP program. If any of the components of the CalARP Program are designated as "trade secret" as defined in Section 6254.7(d) of the Government Code and Section 1060 of the Evidence Code, the emergency response agency or agencies shall be given notice that the information released shall be used only in connection with the official duties of the agency or agencies and shall not otherwise be released.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Sections 25538(c) and 25539, Health and Safety Code.

Article 2. Registration

§ 5060.1. Registration.

(a) If an RMP is required under Section 5050.4(a)(1) and (a)(3), the owner or operator of the stationary source shall complete the registration information required in (d) of this section and submit it with the RMP to USEPA, in accordance with 40 CFR § 68.150, with a copy provided to the UPA.

(b) If an RMP is required under Section 5050.4(a)(2), the owner or operator of the stationary source shall complete the registration information required in (d) of this section and submit it with the RMP to the UPA.

(c) The UPA may request a registration from a stationary source covered by this chapter prior to submittal of the RMP. Registration submitted prior to an RMP submittal shall include a certification of accuracy.

(d) The registration shall include the following data:

(1) Stationary source name, street, city, county, state, zip code, latitude, and longitude, method for obtaining latitude and longitude, and description of location that latitude and longitude represent;

(2) The stationary source Dun and Bradstreet number;

(3) Name and Dun and Bradstreet number of the corporate parent company;

(4) The name, telephone number, and mailing address of the owner or operator;

(5) The name and title of the person or position with overall responsibility for RMP elements and implementation, and (optional) the e-mail address for that person or position;

(6) The name, title, telephone number, and 24-hour telephone number, and, as of June 21, 2004, the e-mail address (if an e-mail address exists) of the emergency contact;

(7) For each covered process, the name and CAS number of each regulated substance held above the threshold quantity in the process, the maximum quantity of each regulated substance or mixture in the process (in pounds) to two significant digits, the five- or six-digit NAICS code that most closely corresponds to the process, and the Program level of the process;

(8) The stationary source USEPA identifier;

(9) The number of full-time employees at the stationary source;

(10) Whether the stationary source is subject to Section 5189 of Title 8 of CCR;

(11) Whether the stationary source is subject to Part 355 of Title 40 of CFR;

(12) If the stationary source has a CAA Title V operating permit, the permit number;

(13) The date of the last safety inspection of the stationary source by a federal, state, or local government agency and the identity of the inspecting entity.

(14) As of June 21, 2004, the name, the mailing address, and the telephone number of the contractor who prepared the RMP (if any);

(15) Source or parent company e-mail address (Optional);

(16) Source homepage address (Optional);

(17) Phone number at the source for public inquiries (Optional);

(18) Local Emergency Planning Committee (Optional);

(19) OSHA Voluntary Protection Program status (Optional); and,

(20) As of June 21, 2004, the type of and reason for any changes being made to a previously submitted RMP; the types of changes to RMP are categorized as follows:

(A) Updates and re-submissions required under Section 5070.11(a) or (b);

(B) Corrections under Section 5070.12 or for purposes of correcting minor clerical errors, updating administrative information, providing missing data elements or reflecting facility ownership changes, and which do not require an update and resubmission as specified in Section 5070.11(a) or (b);

(C) De-registrations required under Section 5070.11(c) or (d); and,

(D) Withdrawals of an RMP for any facility that was erroneously considered subject to the CalARP Program.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Sections 25531, 25534.05(a)(1) and 25533(b), Health and Safety Code; and Section 68.160, Part 68, Title 40, Code of Federal Regulations.

§ 5060.2. (Reserved).

Article 3. Risk Management Plan Components and Submission Requirements

§ 5070.1. Submission.

(a) The owner or operator of a stationary source, which handles more than a threshold quantity of a regulated substance in a process, shall determine the applicability of this chapter as set forth in Section 5050.4(a) and shall submit a single RMP to the UPA. The owner or operator of a Program 4 stationary source shall submit a revised RMP to address the changes stated in Article 7 Program 4 within twenty-four (24) months of the effective date of this Article.

(b) The RMP information required by USEPA at Sections 68.155-68.185, Part 68, Title 40 of CFR shall be submitted to USEPA no later than the latest of the following dates:

(1) Three years after the date on which a regulated substance is first listed under Section 68.130, Part 68, Title 40 of CFR; or,

(2) The date on which a regulated substance is first present in a process, above the threshold quantity, as listed on Section 5130.6 Table 1 or 2.

(c) The owner or operator of a stationary source shall submit a copy of USEPA required RMP information according to the time frame set forth in (b) of this section to the UPA.

(d) If a determination is made pursuant to section 5050.4(a)(2) that a new or modified stationary source must comply with this chapter, the owner or operator shall submit an RMP to the UPA prior to the date in which a regulated substance is first present in a process above the listed threshold quantity, as listed on Section 5130.6.

(e) This chapter does not require the owner or operator to submit external event analysis or supplemental information, required by the UPA, to USEPA unless that information is required by federal law.

(f) If a pesticide, as defined in Section 12753 of the Food and Agricultural Code, is used on a farm or nursery and is determined by the UPA to pose a regulated substances accident risk; the UPA shall first consult with the county agricultural commissioner or the Department of Food and Agriculture to evaluate whether the existing RMP is adequate in relation to the regulated substances accident risk. This paragraph does not prohibit, or limit the authority of an UPA to conduct its duties.

(g) RMPs submitted under this Section shall be updated and corrected in accordance with Section 5070.11 and Section 5070.12.

(h) Notwithstanding the provisions of Sections 5070.3 through 5070.10 the RMP shall exclude classified information. Subject to appropriate procedures to protect such information from public disclosure, classified data or information excluded from the RMP may be made available in a classified annex to the RMP for review by federal and state representatives who have received the appropriate security clearances required for the classified data or information being reviewed.

(i) Upon request, the UPA shall submit to Agency copies of the RMP and the federal registration.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; Sections 25533, 25534, 25535.1 and 25536, Health and Safety Code; and Section 68.150, Part 68, Title 40, Code of Federal Regulations.

§ 5070.2. RMP Review Process.

The RMP review process shall include:

(a) Consultation and review. The RMP shall be certified complete by a qualified person and the stationary source owner or operator and shall be submitted to the UPA. Completeness shall be determined in accordance with Sections 5070.3 through 5070.10. The stationary source shall work closely with the UPA to determine that the RMP contains an appropriate level of detail.

(b) Deficiency notice. The UPA shall review the RMP to determine if all the elements pursuant to Sections 5070.3 through 5070.10 are contained in the document and provide a written notice to the owner or operator of a stationary source of any deficiencies. The UPA may authorize the air pollution control district (APCD) or air quality management district (AQMD) to conduct a technical review of the RMP.

(1) The owner or operator of the stationary source shall have 60 calendar days from receipt of the notification of RMP deficiencies to make any corrections. An owner or operator of the stationary source may request, in writing, a one-time 30 calendar day extension to correct deficiencies. At the end of the 60 calendar days, and any extension period if applicable, the stationary source shall resubmit the corrected, revised RMP to the UPA. Failure to correct deficiencies during the specified time frame shall subject the owner or operator of the stationary source to the penalties specified in Sections 25540 and 25541 of HSC.

(2) If no deficiencies are identified, the UPA shall accept the RMP as complete and submit the RMP for formal public review.

(c) Formal public review. Within 15 calendar days after the UPA determines that the RMP is complete, the UPA shall make the RMP available to the public for review and comment by publishing a notice in a local newspaper of general circulation, or on the UPA's website. The notice shall describe the RMP and state a location where it may be reviewed. The UPA shall directly notify individuals and organizations who have specifically requested to be notified. The public shall have 45 calendar days to comment following the publication date of the notice. The UPA shall review all public comments.

(d) Evaluation review. The evaluation review shall be conducted by the UPA at the end of the formal public review period. The UPA shall take the public comments into consideration during the evaluation review. The UPA shall consider standard application of engineering and scientific principles, site specific characteristics, technical accuracy, severity of offsite consequences, and other information in the possession of or reviewed by the UPA. The evaluation review may include inspections and onsite document review of records and data which may not be in the possession of the UPA.

(e) The evaluation review shall be completed by the UPA as follows:

(1) For an RMP which includes only Program 1 or Program 2 processes, the evaluation review shall be completed within 36 months.

(2) For an RMP which includes a Program 3 process, the evaluation review shall be completed within 24 months.

(3) For an RMP that is for a Program 4 stationary source, the evaluation review shall be completed within 36 months.

(4) The evaluation review does not include time for corrections of deficiencies pursuant to section (b)(1).

(f) Inspection or audit authority. Nothing in this section shall preclude the authority of an UPA to inspect or audit a stationary source.

(g) Public access. Subject to the requirements of section 5140.6(b), the public shall have access to the RMP, including any electronic data developed as part of the USEPA reporting requirements. Classified information need not be included. Trade secrets are protected pursuant to Section 25538 of HSC.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; and Sections 25531.1, 25534.5, 25535, 25535.2 and 25538, Health and Safety Code.

§ 5070.3. RMP Executive Summary Component.

The owner or operator shall provide in the RMP, for all Program levels, an executive summary that includes a brief description of the following elements:

(a) The accidental release prevention and emergency response policies at the stationary source;

(b) The stationary source and regulated substances handled;

(c) The general accidental release prevention program and chemical-specific prevention steps;

(d) The five-year accident history;

(e) The emergency response program; and,

(f) Planned changes to improve safety.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.155, Part 68, Title 40, Code of Federal Regulations.

§ 5070.4. RMP Offsite Consequence Analysis Component.

(a) The owner or operator shall submit the following information in the RMP:

(1) Program 1 processes: One worst-case release scenario for each Program 1 process; and,

(2) Program 2 and 3 processes and Program 4 stationary sources: One worst-case release scenario to represent all regulated toxic substances held above the threshold quantity and one worst-case release scenario to represent all regulated flammable substances held above the threshold quantity.

(A) If additional worst-case scenarios for toxics or flammables are required by Section 5080.3(a)(2)(C), the owner or operator shall submit the same information on the additional scenario(s).

(B) The owner or operator shall also submit information on one alternative release scenario for each regulated toxic substance held above the threshold quantity and one alternative release scenario to represent all regulated flammable substances held above the threshold quantity.

(b) The owner or operator shall submit the following data:

(1) Chemical name;

(2) Percentage weight of the chemical in a liquid mixture (toxics only);

(3) Physical state (toxics only);

(4) Basis of results (give model name if used);

(5) Scenario (explosion, fire, toxic gas release, or liquid spill and vaporization)

(6) Quantity released in pounds;

(7) Release rate;

(8) Release duration;

(9) Wind speed and atmospheric stability class (toxics only);

(10) Topography (toxics only);

(11) Distance to endpoint;

(12) Public and environmental receptors within the distance;

(13) Passive mitigation considered; and,

(14) Active mitigation considered (alternative releases only).

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; Sections 25531.1 and 25534.05, Health and Safety Code; and Section 68.165, Part 68, Title 40, Code of Federal Regulations.

§ 5070.5. RMP Five-Year Accident History Component.

The owner or operator shall submit as part of the RMP the information required by Section 5080.9(b) on each accident covered by Section 5080.9(a).

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25543.1, Health and Safety Code; and Section 68.168, Part 68, Title 40, Code of Federal Regulations.

§ 5070.6. RMP Program 2 Prevention Program Component.

(a) For each Program 2 process, the owner or operator shall provide in the RMP the information indicated in sections (b) through (l). If the same information applies to more than one covered process, the owner or operator may provide the information only once, but shall indicate to which processes the information applies.

(b) The five- or six-digit NAICS code that most closely corresponds to the process.

(c) The name(s) of the chemical(s) covered.

(d) The date of the most recent review or revision of the safety information and a list of federal or state regulations or industry-specific design codes and standards used to demonstrate compliance with the safety information requirement.

(e) The date of completion of the most recent hazard review or update.

(1) The expected date of completion of any changes resulting from the hazard review;

(2) Major hazards identified;

(3) Process controls in use;

(4) Mitigation systems in use;

(5) Monitoring and detection systems in use; and,

(6) Changes since the last hazard review.

(f) The date of the most recent review or revision of operating procedures.

(g) The date of the most recent review or revision of training programs;

(1) The type of training provided -- classroom, classroom plus on the job, on the job; and,

(2) The type of competency testing used.

(h) The date of the most recent review or revision of maintenance procedures and the date of the most recent equipment inspection or test and the equipment inspected or tested.

(i) The date of the most recent compliance audit and the expected date of completion of any changes resulting from the compliance audit.

(j) The date of the most recent incident investigation and the expected date of completion of any changes resulting from the investigation.

(k) The date of the most recent change that triggered a review or revision of safety information, the hazard review, operating or maintenance procedures, or training.

(l) The owner or operator shall submit the following external events analysis information:

(1) The types of natural and human caused external events considered in PHA Section 5100.2 or Hazard Review Section 5090.2.

(2) The estimated magnitude or scope of external events which were considered. If not known, the owner or operator of the stationary source shall work closely with the UPA to determine what is required. If seismic events are applicable, the parameters used in the consideration of the seismic analysis and which edition of the Building Code was used when the process was designed.

(3) For each external event, with a potential to create a release of a regulated substance that will reach an endpoint offsite, apply sections (e)(1) through (e)(6).

(4) The date of the most recent field verification that equipment is installed and maintained as designed.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.170, Part 68, Title 40, Code of Federal Regulations.

§ 5070.7. RMP Program 3 Prevention Program Component.

(a) For each Program 3 process, the owner or operator shall provide the information indicated in sections (b) through (q). If the same information applies to more than one covered process, the owner or operator may provide the information only once, but shall indicate to which processes the information applies.

(b) The five- or six-digit NAICS code that most closely corresponds to the process.

(c) The name(s) of the substance(s) covered.

(d) The date on which the safety information was last reviewed or revised.

(e) The date of completion of the most recent PHA or update and the technique used.

(1) The expected date of completion of any changes resulting from the PHA;

(2) Major hazards identified;

(3) Process controls in use;

(4) Mitigation systems in use;

(5) Monitoring and detection systems in use; and,

(6) Changes since the last PHA.

(f) The date of the most recent review or revision of operating procedures.

(g) The date of the most recent review or revision of training programs.

(1) The type of training provided--classroom, classroom plus on the job, on the job; and,

(2) The type of competency testing used.

(h) The date of the most recent review or revision of maintenance procedures and the date of the most recent equipment inspection or test and the equipment inspected or tested.

(i) The date of the most recent change that triggered management of change procedures and the date of the most recent review or revision of management of change procedures.

(j) The date of the most recent pre-startup safety review.

(k) The date of the most recent compliance audit and the expected date of completion of any changes resulting from the compliance audit.

(l) The date of the most recent incident investigation and the expected date of completion of any changes resulting from the investigation.

(m) The date of the most recent review or revision of employee participation plans.

(n) The date of the most recent review or revision of hot work permit procedures.

(o) The date of the most recent review or revision of contractor safety procedures.

(p) The date of the most recent evaluation of contractor safety performance.

(q) The owner or operator shall submit the following external events analysis information:

(1) The types of natural and human caused external events considered in PHA Section 5100.2;

(2) The magnitude or scope of external events which were considered. If not known, the owner or operator of the stationary source shall work closely with the UPA to determine what is required. If seismic events are applicable, the parameters used in the consideration of the seismic analysis and which edition of the Building Code was used when the process was designed;

(3) For each external event, with a potential to create a release of a regulated substance that will reach an endpoint offsite, apply Sections (e)(1) through (e)(6); and,

(4) The date of the most recent field verification that equipment is installed and maintained as designed.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.175, Part 68, Title 40, Code of Federal Regulations.

§ 5070.8. RMP Program 4 Component.

(a) For each Program 4 stationary source the owner or operator shall provide the information indicated in sections (b) through (t). If the same information applies to more than one Program 4 process, the owner or operator may provide the information only once, but shall indicate to which processes the information applies.

(b) The five- or six-digit NAICS code that most closely corresponds to the stationary source.

(c) The name(s) of the highly hazardous material(s) covered.

(d) The date on which the safety information was last reviewed or revised.

(e) The date of completion of the most recent PHA or PHA revalidation and the technique used.

(1) The expected date of completion of any changes resulting from the PHA;

(2) Major hazards identified;

(3) Process controls in use;

(4) Mitigation systems in use;

(5) Monitoring and detection systems in use; and,

(6) Changes since the last PHA.

(f) The date of the most recent review or revision of management of change procedures.

(g) The date of the most recent pre-startup safety review.

(h) The date of the most recent compliance audit and the expected date of completion of any changes resulting from the compliance audit.

(i) The date of the most recent major incident investigation and the expected date of completion of any changes resulting from the investigation.

(j) The date of the most recent review or revision of employee participation plans.

(k) The date of the most recent review or revision of hot work permit procedures.

(l) The date of the most recent review or revision of contractor safety procedures.

(m) The date of the most recent evaluation of contractor safety performance.

(n) The date of the most recent Hierarchy of Hazard Control Analysis.

(o) The date of the most recent Process Safety Culture Assessment.

(p) The date of the most recent evaluation of the Accidental Release Prevention Program Management policies and procedures.

(q) The date of the most recent evaluation of the Human Factors Program.

(r) The date of the most recent Safeguard Protection Analysis.

(s) The date of completion of the most recent Damage Mechanism Review or update.

(1) The expected date of completion of any changes resulting from the Damage Mechanism Review,

(2) Major damage mechanisms identified; and

(3) Changes since the last Damage Mechanism Review.

(t) The owner or operator shall submit the following external events analysis information:

(1) The types of natural and human caused external events considered in PHA Section 5110.4;

(2) The magnitude or scope of external events which were considered. If not known, the owner or operator of the stationary source shall work closely with the UPA to determine what is required. If seismic events are applicable, the parameters used in the consideration of the seismic analysis and which edition of the Building Code was used when the process was designed;

(3) For each external event, with a potential to create a release of a regulated substance that will reach an endpoint offsite, apply sections (e)(1) through (e)(6); and,

(4) The date of the most recent field verification that equipment is installed and maintained as designed.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; Section 25531, Health and Safety Code; and Section 68.175, Part 68, Title 40, Code of Federal Regulations.

§ 5070.9. RMP Emergency Response Program Component.

(a) The owner or operator shall provide in the RMP the following information:

(1) Do you have a written emergency response plan?

(2) Does the plan include specific actions to be taken in response to an accidental release of a regulated substance?

(3) Does the plan include procedures for informing the public and local agencies responsible for responding to accidental releases?

(4) Does the plan include information on emergency health care?

(5) The date of the most recent review or update of the emergency response plan.

(6) The date of the most recent emergency response training for employees.

(b) The owner or operator shall provide the name and telephone number of the primary local emergency response agency with which the plan is coordinated.

(c) The owner or operator shall list other federal or state emergency plan requirements to which the stationary source is subject.

(d) For Program 4 stationary sources, the last date that a drill was performed with the emergency response agencies that may respond to an incident at the stationary source and the local UPA.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; Section 25531, Health and Safety Code; and Section 68.180, Part 68, Title 40, Code of Federal Regulations.

§ 5070.10. RMP Certification.

(a) For Program 1 processes, the owner or operator shall submit in the RMP the certification statement provided in Section 5050.5(d)(4).

(b) For all other covered processes, the owner or operator shall submit in the RMP a single certification that, to the best of the signer's knowledge, information, and belief formed after reasonable inquiry, the information submitted is true, accurate, and complete.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.185, Part 68, Title 40, Code of Federal Regulations.

§ 5070.11. RMP Updates.

(a) The owner or operator of a stationary source which has a regulated substance listed in Table 1 or Table 2 in Section 5130.6 in quantities greater than the corresponding thresholds listed in Table 1 or 2 shall review and update the RMP and submit it in a method and format to a central point specified by USEPA and to the UPA as of the date of submission. The owner or operator of a stationary source shall revise and update the RMP submitted under Section 5070.1 as follows:

(1) At least once every five years from the date of its initial submission or most recent update required by sections (a)(2) through (a)(7), whichever is later. For purposes of determining the date of initial submissions, RMPs submitted before June 21, 1999 are considered to have been submitted on June 21, 1999;

(2) No later than three years after a newly regulated substance is first listed by USEPA;

(3) No later than the date on which a new regulated substance is first present in an already covered process above a threshold quantity;

(4) No later than the date on which a regulated substance is first present above a threshold quantity in a new process;

(5) Within six months of a change that requires a revised PHA or hazard review;

(6) Within six months of a change that requires a revised offsite consequence analysis as provided in section 5080.7; and,

(7) Within six months of a change that alters the Program level that applied to any covered process, except as provided in Section 5070.1(a).

(b) The owner or operator of a stationary source which has regulated substances in a process listed in Section 5130.6 in quantities greater than Table 3 thresholds and less than thresholds in Table 1 shall revise and update the RMP submitted under Section 5070.1(a). The updated RMP shall be submitted to the UPA as follows:

(1) At least once every five years from the date of its initial submission or most recent update required by sections (b)(2) through (b)(7),

(2) No later than three years after a newly regulated substance is first listed by Agency;

(3) No later than the date on which a new regulated substance is first present in an already covered process above a threshold quantity;

(4) No later than the date on which a regulated substance is first present above a threshold quantity in a new process;

(5) Within six months of a change that requires a revised PHA or hazard review;

(6) Within six months of a change that requires a revised offsite consequence analysis as provided in Section 5080.7; and,

(7) Within six months of a change that alters the Program level that applied to any covered process.

(c) If a stationary source is no longer subject to the applicability requirements of Section 5050.4(a)(1), the owner or operator shall submit a de-registration pursuant to Section 5060.1(a) to USEPA within six months indicating that the stationary source is no longer covered. A copy of the de-registration shall also be submitted to the UPA.

(d) If a stationary source is no longer subject to the applicability requirements of Section 5050.4(a)(2) the owner or operator shall submit a de-registration pursuant to Section 5060.1(b) to the UPA within six months indicating that the stationary source is no longer covered.

(e) Revised RMPs shall be subject to the public review process outlined in Section 5070.2.

(f) Within 30 days of a change in the owner or operator, the new owner or operator shall contact the UPA to update registration information. The new owner or operator shall determine if RMP changes are necessary.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; Section 25531, Health and Safety Code; and Section 68.190, Part 68, Title 40, Code of Federal Regulations.

§ 5070.12. Required RMP Corrections.

The owner or operator of a stationary source for which a RMP was submitted shall correct the RMP as follows:

(a) New accident history information -- For any accidental release meeting the five-year accident history reporting criteria of Section 5080.9, the owner or operator shall submit the data required under Sections 5070.5, 5070.6(j), 5070.7(l) and 5070.8(l) with respect to that accident within six months of the release or by the time the RMP is updated under Section 5070.11, whichever is earlier.

(b) Emergency Contact information -- Beginning June 21, 2004, within one month of any change in the emergency contact information required under Section 5060.1(d)(6), the owner or operator shall submit a correction of that information.

Authority cited: Sections 25531, 25533 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.195, Part 68, Title 40, Code of Federal Regulations.

§ 5070.13. Covered Process Modification.

(a) When an owner or operator intends to make a modification to a stationary source relating to a covered process and the modification may result in a significant increase in either: the amount of regulated substances handled at the stationary source as compared to the amount of regulated substances identified in the stationary source's RMP, or the risk of handling a regulated substance as compared to the amount of risk identified in the stationary source's RMP, then the owner or operator shall do all of the following:

(1) Where reasonably possible, notify the UPA in writing of the owner or operator's intent to modify the stationary source at least five calendar days before implementing any modifications. As part of the notification process, the owner or operator shall consult with the UPA when determining whether the RMP should be reviewed and revised. Where prenotification is not reasonably possible, the owner or operator shall provide written notice to the UPA no later than 48 hours following the modification.

(2) Establish procedures to manage the proposed modification, which shall be substantially similar to the procedures specified in Sections 5100.6 and 5100.7, and notify the UPA that the procedures have been established.

(b) The owner or operator of the stationary source shall revise the appropriate documents, as required pursuant to section (a), expeditiously, but not later than 60 days from the date of the stationary source modification.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25543.2, Health and Safety Code.

§ 5070.14. Certificate of Occupancy.

New or modified stationary sources shall comply with Section 65850.2(b) of the Government Code prior to the issuance of a certificate of occupancy.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25534.2, Health and Safety Code.

Article 4. Hazard Assessment

§ 5080.1. Hazard Assessment Applicability.

The owner or operator of a stationary source subject to this chapter with a Program 1 process shall prepare a worst-case release scenario analysis as provided in Section 5080.3 and complete the five-year accident history as provided in Section 5080.9. The owner or operator of a Program 2 or 3 process or Program 4 stationary source shall comply with all sections in this article for these processes.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; Section 25531, Health and Safety Code; and Section 68.20, Part 68, Title 40, Code of Federal Regulations.

§ 5080.2. Offsite Consequence Analysis Parameters.

(a) Endpoints. The following endpoints shall be used for analyses of offsite consequences:

(1) Toxic endpoints for Table 1 and Table 3 regulated substances (Section 5130.6), are provided in Appendix A of this chapter.

(2) Flammables. For Table 2 regulated flammable substances (Section 5130.6), flammable endpoints vary according to the scenarios studied, based upon the following:

(A) Explosion. An overpressure of 1 psi.

(B) Radiant heat/exposure time. A radiant heat of 5 kw/m2 for 40 seconds.

(C) Lower flammability limit. A lower flammability limit as provided in NFPA documents or other generally recognized sources.

(b) Wind speed/atmospheric stability class. For the worst-case release analysis, the owner or operator shall use a wind speed of 1.5 meters per second and F atmospheric stability class. If the owner or operator can demonstrate that local meteorological data applicable to the stationary source show a higher minimum wind speed or less stable atmosphere at all times during the previous three years, these minimums may be used. For analysis of alternative scenarios, the owner or operator may use the typical meteorological conditions for the stationary source.

(c) Ambient temperature/humidity. For worst-case release analysis of a regulated toxic substance, the owner or operator shall use the highest daily maximum temperature in the previous three years and average humidity for the site, based on temperature/humidity data gathered at the stationary source or at a local meteorological station; an owner or operator using the RMP Offsite Consequence Analysis Guidance may use 25 degrees centigrade and 50 percent humidity as values for these variables. For analysis of alternative scenarios, the owner or operator may use typical temperature/humidity data gathered at the stationary source or at a local meteorological station.

(d) Height of release. The worst-case release of a regulated toxic substance shall be analyzed assuming a ground level (0 feet) release. For an alternative scenario analysis of a regulated toxic substance, release height may be determined by the release scenario.

(e) Surface roughness. The owner or operator shall use either urban or rural topography, as appropriate. Urban means that there are many obstacles in the immediate area; obstacles include buildings or trees. Rural means there are no buildings in the immediate area and the terrain is generally flat and unobstructed.

(f) Dense or neutrally buoyant gases. The owner or operator shall ensure that tables or models used for dispersion analysis of regulated toxic substances appropriately account for gas density.

(g) Temperature of released substance. For worst case, liquids other than gases liquefied by refrigeration only shall be considered to be released at the highest daily maximum temperature, based on data for the previous three years appropriate for the stationary source, or at process temperature, whichever is higher. For alternative scenarios, substances may be considered to be released at a process or ambient temperature that is appropriate for the scenario.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; Section 25531, Health and Safety Code; and Section 68.22, Part 68, Title 40, Code of Federal Regulations.

§ 5080.3. Worst-Case Release Scenario Analysis.

(a) The owner or operator shall analyze and report in the RMP:

(1) For Program 1 processes, one worst-case release scenario including an offsite consequence analysis, for each Program 1 process using the offsite consequence analysis parameters in Section 5080.2;

(2) For Program 2 and 3 processes and Program 4 stationary sources:

(A) One worst-case release scenario that is estimated to create the greatest distance in any direction to an endpoint as defined in Section 5080.2(a) resulting from an accidental release of regulated toxic substances from covered processes under worst-case conditions defined in Section 5080.2 (b) through (g);

(B) One worst-case release scenario that is estimated to create the greatest distance in any direction to an endpoint defined in Section 5080.2(a) resulting from an accidental release of regulated flammable substances from covered processes under worst-case conditions defined in Section 5080.2; and,

(C) Additional worst-case release scenarios for a hazard class if a worst-case release from another covered process at the stationary source potentially affects public receptors different from those potentially affected by the worst-case release scenario developed under sections (a)(2)(A) or (a)(2)(B).

(b) Determination of worst-case release quantity. The worst-case release quantity shall be the greater of the following:

(1) For substances in a vessel, the greatest amount held in a single vessel, taking into account administrative controls that limit the maximum quantity; or

(2) For substances in pipes, the greatest amount in a pipe, taking into account administrative controls that limit the maximum quantity.

(c) Worst-case release scenario--toxic gases.

(1) For regulated toxic substances that are normally gases at ambient temperature and handled as a gas or as a liquid under pressure, the owner or operator shall assume that the quantity in the vessel or pipe, as determined under section (b), is released as a gas over 10 minutes. The release rate shall be assumed to be the total quantity divided by 10 unless passive mitigation systems are in place.

(2) For regulated toxic gases handled as refrigerated liquids at ambient pressure:

(A) If the released substance is not contained by passive mitigation systems or if the contained pool would have a depth of 1 centimeter or less, the owner or operator shall assume that the substance is released as a gas in 10 minutes;

(B) If the released substance is contained by passive mitigation systems in a pool with a depth greater than 1 centimeter, the owner or operator may assume that the quantity in the vessel or pipe, as determined under section (b), is spilled instantaneously to form a liquid pool. The volatilization rate (release rate) shall be calculated at the boiling point of the substance and at the conditions specified in section (d).

(d) Worst-case release scenario--toxic liquids.

(1) For regulated toxic substances that are normally liquids at ambient temperature, the owner or operator shall assume that the quantity in the vessel or pipe, as determined under section (b), is spilled instantaneously to form a liquid pool.

(A) The surface area of the pool shall be determined by assuming that the liquid spreads to 1 centimeter deep unless passive mitigation systems are in place that serve to contain the spill and limit the surface area. Where passive mitigation is in place, the surface area of the contained liquid shall be used to calculate the volatilization rate.

(B) If the release would occur onto a surface that is not paved or smooth, the owner or operator may take into account the actual surface characteristics.

(2) The volatilization rate shall account for the highest daily maximum temperature occurring in the past three years, the temperature of the substance in the vessel, and the concentration of the substance if the liquid spilled is a mixture or solution.

(3) The rate of release to air shall be determined from the volatilization rate of the liquid pool. The owner or operator may use the methodology in the RMP Offsite Consequence Analysis Guidance or any other publicly available techniques that account for the modeling conditions and are recognized by industry as applicable

as part of current practices. Proprietary models that account for the modeling conditions may be used provided the owner or operator allows the implementing agency access to the model and describes model features and differences from publicly available models to local emergency planners upon request.

(e) Worst-case release scenario--flammable gases. The owner or operator shall assume that the quantity of the substance, as determined under section (b) and the provisions below, vaporizes resulting in a vapor cloud explosion. A yield factor of 10 percent of the available energy released in the explosion shall be used to determine the distance to the explosion endpoint if the model used is based on TNT-equivalent methods.

(1) For regulated flammable substances that are normally gases at ambient temperature and handled as a gas or as a liquid under pressure, the owner or operator shall assume that the quantity in the vessel or pipe, as determined under section (b), is released as a gas over 10 minutes. The total quantity shall be assumed to be involved in the vapor cloud explosion.

(2) For flammable gases handled as refrigerated liquids at ambient pressure:

(A) If the released substance is not contained by passive mitigation systems or if the contained pool would have a depth of one centimeter or less, the owner or operator shall assume that the total quantity of the substance is released as a gas in 10 minutes, and the total quantity will be involved in the vapor cloud explosion.

(B) If the released substance is contained by passive mitigation systems in a pool with a depth greater than 1 centimeter, the owner or operator may assume that the quantity in the vessel or pipe, as determined under section (b), is spilled instantaneously to form a liquid pool. The volatilization rate (release rate) shall be calculated at the boiling point of the substance and at the conditions specified in section (d). The owner or operator shall assume that the quantity which becomes vapor in the first 10 minutes is involved in the vapor cloud explosion.

(f) Worst-case release scenario -- flammable liquids. The owner or operator shall assume that the quantity of the substance, as determined under section (b) and the provisions below, vaporizes resulting in a vapor cloud explosion. A yield factor of 10 percent of the available energy released in the explosion shall be used to determine the distance to the explosion endpoint if the model used is based on TNT equivalent methods.

(1) For regulated flammable substances that are normally liquids at ambient temperature, the owner or operator shall assume that the entire quantity in the vessel or pipe, as determined under section (b), is spilled instantaneously to form a liquid pool. For liquids at temperatures below their atmospheric boiling point, the volatilization rate shall be calculated at the conditions specified in section (d).

(2) The owner or operator shall assume that the quantity which becomes vapor in the first 10 minutes is involved in the vapor cloud explosion.

(g) Parameters to be applied. The owner or operator shall use the parameters defined in Section 5080.2 to determine distance to the endpoints. The owner or operator may use either the methodology provided in the RMP Offsite Consequence Analysis Guidance or any commercially or publicly available air dispersion modeling techniques, provided the techniques account for the specified modeling conditions and are recognized by industry as applicable as part of current practices. Proprietary models that account for the modeling conditions may be used provided the owner or operator allows the UPA access to the model and describes model features and differences from publicly available models to local emergency planners upon request.

(h) Consideration of passive mitigation. Passive mitigation systems may be considered for the analysis of worst case provided that the mitigation system is capable of withstanding the release event triggering the scenario and would still function as intended.

(i) Factors in selecting a worst-case scenario. Notwithstanding the provisions of section (b), the owner or operator shall select as the worst case for flammable regulated substances or the worst case for regulated toxic substances, a scenario based on the following factors if such a scenario would result in a greater distance to an endpoint defined in Section 5080.2(a) beyond the stationary source boundary than the scenario provided under section (b):

(1) Smaller quantities handled at higher process temperature or pressure; and,

(2) Proximity to the boundary of the stationary source.

(j) Solids. In performing an offsite consequence analysis for solids that are listed in Section 5130.6 Table 3, an owner or operator may use a USEPA, California Air Resources Board, or Agency approved model which appropriately considers the dispersion and settling of particles. For the worst case scenario, the owner or operator shall assume a one-hour release and pursuant to Section 5080.2(b), use a wind speed of 1.5 meters per second and F atmospheric stability class.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; Section 25531, Health and Safety Code; and Section 68.25, Part 68, Title 40, Code of Federal Regulations.

§ 5080.4. Alternative Release Scenario Analysis.

(a) The number of scenarios. The owner or operator shall identify and analyze at least one alternative release scenario for each regulated toxic substance held in a covered process(es) and at least one alternative release scenario to represent all flammable substances held in covered processes.

(b) Scenarios to consider.

(1) For each scenario required under section (a), the owner or operator shall select a scenario:

(A) That is more likely to occur than the worst-case release scenario under Section 5080.3;

(B) That will reach an endpoint offsite, unless no such scenario exists; and

(C) That will reach a public receptor, unless no such scenario exists.

(2) Release scenarios considered should include, but are not limited to, the following, where applicable:

(A) Transfer hose releases due to splits or sudden hose uncoupling;

(B) Process piping releases from failures at flanges, joints, welds, valves and valve seals, and drains or bleeds;

(C) Process vessel or pump releases due to cracks, seal failure, or drain, bleed, or plug failure;

(D) Vessel overfilling and spill, or over pressurization and venting through relief valves or rupture disks; and,

(E) Shipping container mishandling and breakage or puncturing leading to a spill.

(c) Parameters to be applied. The owner or operator shall use the parameters defined in Section 5080.2 to determine distance to the endpoints. The owner or operator may use either the methodology provided in the RMP Offsite Consequence Analysis Guidance or any commercially or publicly available air dispersion modeling techniques, provided the techniques account for the specified modeling conditions and are recognized by industry as applicable as part of current practices. Proprietary models that account for the modeling conditions may be used provided the owner or operator allows the UPA access to the model and describes model features and differences from publicly available models to local emergency planners upon request.

(d) Consideration of mitigation. Active and passive mitigation systems may be considered provided they are capable of withstanding the event that triggered the release and would still be functional.

(e) Factors in selecting scenarios. The owner or operator shall consider the following in selecting alternative release scenarios:

(1) The five-year accident history provided in Section 5080.9;

(2) Accidents/incidents or events in related industries available through trade magazines, industry associations and other publicly available sources; either digital or print, and

(3) Failure scenarios identified under Section 5090.2, 5100.2, or 5110.4.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; Section 25531, Health and Safety Code; and Section 68.28, Part 68, Title 40, Code of Federal Regulations.

§ 5080.5. Defining Offsite Impacts to the Population.

(a) The owner or operator shall estimate in the RMP the population within a circle with its center at the point of the release and a radius determined by the distance to the endpoint defined in Section 5080.2(a).

(b) Population to be defined. Population shall include residential population. The presence of institutions (schools, hospitals, long term health care facilities, child day care facilities, prisons), parks and recreational areas, and major commercial, office, and industrial buildings shall be noted in the RMP.

(c) Data sources acceptable. The owner or operator may use the most recent Census data, or other more accurate information if it is available, to estimate the population potentially affected.

(d) Level of accuracy. Population shall be estimated to two significant digits.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Sections 25531 and 25534.1, Health and Safety Code; and Section 68.30, Part 68, Title 40, Code of Federal Regulations.

§ 5080.6. Defining Offsite Impacts to the Environment.

(a) The owner or operator shall list in the RMP environmental receptors within a circle with its center at the point of the release and a radius determined by the distance to the endpoint defined in Section 5080.2(a).

(b) Data sources acceptable. The owner or operator may rely on information provided on local United States Geological Survey (USGS) maps or on any data source containing USGS data to identify environmental receptors.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.33, Part 68, Title 40, Code of Federal Regulations.

§ 5080.7. Offsite Consequence Analysis Review and Update.

(a) The owner or operator shall document the review and update of the offsite consequence analyses at least once every five years.

(b) If changes in processes, quantities stored or handled, or any other aspect of the stationary source might reasonably be expected to increase or decrease the distance to the endpoint by a factor of two or more, the owner or operator shall complete a revised analysis within six months of the change and submit a revised RMP as provided in Section 5070.11.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.36, Part 68, Title 40, Code of Federal Regulations.

§ 5080.8. Offsite Consequence Analysis Documentation.

The owner or operator shall maintain the following records on the offsite consequence analyses:

(a) For worst-case scenarios, a description of the vessel or pipeline and substance selected as worst case, assumptions and parameters used, and the rationale for selection. Assumptions shall include use of any administrative controls and any passive mitigation that were assumed to limit the quantity that could be released. Documentation shall include the anticipated effect of the controls and mitigation on the release quantity and rate.

(b) For alternative release scenarios, a description of the scenarios identified, assumptions and parameters used, and the rationale for the selection of specific scenarios. Assumptions shall include use of any administrative controls and any mitigation that were assumed to limit the quantity that could be released. Documentation shall include the effect of the controls and mitigation on the release quantity and rate.

(c) Documentation of estimated quantity released, release rate, and duration of release.

(d) Methodology, including the model used to determine distance to endpoints.

(e) Data used to estimate population and environmental receptors potentially affected.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.39, Part 68, Title 40, Code of Federal Regulations.

§ 5080.9. Five-Year Accident History.

(a) The owner or operator shall include in the five-year accident history all accidental releases from covered processes that resulted in deaths, injuries, or significant property damage on site, or known offsite deaths, injuries, evacuations, sheltering in place, property damage, or environmental damage.

(b) Data required. For each accidental release included, the owner or operator shall report the following information:

(1) Date, time, and approximate duration of the release;

(2) Regulated substance(s) released;

(3) Estimated quantity released in pounds and, for mixtures containing regulated toxic substances, percentage concentration by weight of the released regulated toxic substance in the liquid mixture;

(4) Five- or six-digit NAICS code that most closely corresponds to the process;

(5) The type of release event and its source;

(6) Weather conditions, if known;

(7) On-site impacts;

(8) Known offsite impacts;

(9) Initiating event and contributing factors if known;

(10) Whether offsite responders were notified if known; and,

(11) Operational or process changes that resulted from investigation of the release and that have been made by the time this information is submitted in accordance with Section 5070.5.

(c) Level of accuracy. Numerical estimates shall be provided to two significant digits.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.42, Part 68, Title 40, Code of Federal Regulations.

Article 5. Program 2 Prevention Program

§ 5090.1. Safety Information.

(a) The owner or operator shall compile and maintain the following up-to-date safety information related to the regulated substances, processes, and equipment:

(1) Material Safety Data Sheets that meet the requirements of Section 5189 of Title 8 of CCR;

(2) Maximum intended inventory of equipment in which the regulated substances are stored or processed;

(3) Safe upper and lower temperatures, pressures, flows, and compositions;

(4) Equipment specifications; and,

(5) Codes and standards used to design, build, and operate the process.

(b) The owner or operator shall ensure that the process is designed in compliance with recognized and generally accepted good engineering practices. Compliance with federal or state regulations that address industry-specific safe design or with industry-specific design codes and standards may be used to demonstrate compliance with this section.

(c) The owner or operator shall update the safety information if a major change occurs that makes the information inaccurate.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.48, Part 68, Title 40, Code of Federal Regulations.

§ 5090.2. Hazard Review.

(a) The owner or operator shall conduct a review of the hazards associated with the regulated substances, processes, and procedures. The review shall identify the following:

(1) The hazards associated with the process and regulated substances;

(2) Opportunities for equipment malfunctions or human errors that could cause an accidental release;

(3) The safeguards used or needed to control the hazards or prevent equipment malfunction or human error; and,

(4) Any steps used or needed to detect or monitor releases.

(b) The owner or operator of a stationary source shall consult with the UPA to decide which hazard review methodology is best suited to determine and evaluate the hazards of the process being analyzed.

(c) The owner or operator may use checklists, if acceptable to the UPA, developed by persons or organizations knowledgeable about the process and equipment as a guide to conducting the review. The hazard review shall be performed by a team familiar with process operations and shall include at least one employee who has experience and knowledge specific to the process being reviewed. For processes designed to meet industry standards or federal or state design rules, the hazard review shall, by inspecting all equipment, determine whether the process is designed, fabricated, and operated in accordance with the applicable standards or rules.

(d) The hazard review shall include the consideration of applicable external events, including seismic events.

(e) The owner or operator shall document the results of the hazard review and ensure that problems identified are resolved. The owner or operator shall enter into an agreement with the UPA on a timetable for resolution of these problems. Otherwise these resolutions shall be completed within two and one-half (2.5) years of performing the hazard review or the next planned turnaround for items requiring a turnaround. These timelines shall not apply to any hazard review completed prior to January 1, 2015. The final resolution taken to address the hazard review recommendation and the actual completion date shall be documented.

(f) The hazard review shall be updated and revalidated at least once every five years. The owner or operator shall also conduct reviews whenever a major change in the process occurs. All issues identified in the hazard review shall be resolved before startup of the changed process.

(g) A hazard review may be revalidated only once between full hazard reviews, unless the UPA agrees in writing that a full hazard review is unwarranted.

(h) The owner or operator shall retain hazard reviews and updates or revalidations for each process covered by this section, as well as the documented resolution of recommendations described in (e) for the life of the process.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.50, Part 68, Title 40, Code of Federal Regulations.

§ 5090.3. Operating Procedures.

(a) The owner or operator shall prepare written operating procedures that provide clear instructions or steps for safely conducting activities associated with each covered process consistent with the safety information for that process. Operating procedures or instructions provided by equipment manufacturers or developed by persons or organizations knowledgeable about the process and equipment may be used as a basis for a stationary source's operating procedures.

(b) The procedures shall address the following:

(1) Initial startup;

(2) Normal operations;

(3) Temporary operations;

(4) Emergency shutdown and operations;

(5) Normal shutdown;

(6) Startup following a normal or emergency shutdown or a major change that requires a hazard review;

(7) Consequences of deviations and steps required to correct or avoid deviations; and,

(8) Equipment inspections.

(c) The owner or operator shall ensure that the operating procedures are developed and/or updated, as necessary to reflect current practice, or whenever the tasks or steps to perform on the covered process are found to be inadequate or inaccurate.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.52, Part 68, Title 40, Code of Federal Regulations.

§ 5090.4. Training.

(a) The owner or operator shall ensure that each employee presently operating a process, and each employee newly assigned to a covered process has been trained or tested competent in the operating procedures provided in Section 5090.3 that pertain to their duties. For those employees already operating a process on June 21, 1999, the owner or operator may certify in writing that the employee has the required knowledge, skills, and abilities to safely carry out the duties and responsibilities as provided in the operating procedures.

(b) Refresher training. Refresher training shall be provided at least every three years, and more often if necessary, to each employee operating a process to ensure that the employee understands and adheres to the current operating procedures of the process. The owner or operator, in consultation with the employees operating the process, shall determine the appropriate frequency of refresher training.

(c) The owner or operator may use training conducted under federal or state regulations or under industry-specific standards or codes or training conducted by covered process equipment vendors to demonstrate compliance with this section to the extent that the training meets the requirements of this section.

(d) The owner or operator shall ensure that operators are trained in any updated or new procedures prior to needing to use the procedures.

(e) The owner or operator shall document initial and refresher training for each employee.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.54, Part 68, Title 40, Code of Federal Regulations.

§ 5090.5. Maintenance.

(a) The owner or operator shall prepare and implement written procedures to maintain the on-going mechanical integrity of the process equipment. The owner or operator may use procedures or instructions provided by covered process equipment vendors or procedures in federal or state regulations or industry codes as the basis for stationary source maintenance procedures.

(b) The owner or operator shall train or cause to be trained each employee involved in maintaining the on-going mechanical integrity of the process. To ensure that the employee can perform the job tasks in a safe manner, each such employee shall be trained in the hazards of the process, in how to avoid or correct unsafe conditions, and in the procedures applicable to the employee's job tasks.

(c) The owner or operator shall ensure that each contractor can document that their employees are trained to perform the maintenance and appropriate operation procedures developed under section (a).

(d) The owner or operator shall perform or cause to be performed inspections and tests on process equipment. Inspection and testing procedures shall follow recognized and generally accepted good engineering practices. The frequency of inspections and tests of process equipment shall be consistent with applicable manufacturers' recommendations, industry standards or codes, good engineering practices, and prior operating experience.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.56, Part 68, Title 40, Code of Federal Regulations.

§ 5090.6. Compliance Audits.

(a) The owner or operator shall certify that they have evaluated compliance with the provisions of this article at least every three years to verify that the procedures and practices developed under this chapter are adequate and are being followed.

(b) The compliance audit shall be conducted by at least one person knowledgeable in the process.

(c) The owner or operator shall develop a report of the audit findings.

(d) The owner or operator shall promptly determine and document an appropriate response to each of the findings of the compliance audit. The owner or operator shall enter into an agreement with the UPA on a timetable for resolution of these findings. Otherwise these responses shall be completed within one and one-half (1.5) years after performing the compliance audit, or the next planned turnaround for items requiring a turnaround. These timelines shall not apply to any compliance audit completed prior to January 1, 2015. The owner or operator shall document the actual completion dates when deficiencies were corrected.

(e) The owner or operator shall retain the two most recent compliance audit reports.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.58, Part 68, Title 40, Code of Federal Regulations.

§ 5090.7. Incident Investigation.

(a) The owner or operator shall investigate each incident which resulted in, or could reasonably have resulted in, a catastrophic release.

(b) An incident investigation shall be initiated as promptly as possible, but not later than 48 hours following the incident.

(c) A summary shall be prepared at the conclusion of the investigation which includes at a minimum:

(1) Date the investigation began;

(2) A description of the incident, including all of the data required under 5080.9(b); and,

(3) Any recommendations resulting from the investigation.

(d) The owner or operator shall promptly address and resolve the investigation findings and recommendations. The owner or operator shall enter into an agreement with the AA on a timetable for resolution of these findings and recommendations. Otherwise these resolutions shall be completed no later than one and one-half (1.5) years after the completion of the incident investigation, or two (2) years after the date of the incident, whichever is the earlier of the two dates, or the next planned turnaround for those items requiring a turnaround. Resolutions and corrective actions with actual completion dates shall be documented.

(e) The findings shall be reviewed with all affected personnel whose job tasks are affected by the findings.

(f) Investigation summaries shall be retained for five years.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.60, Part 68, Title 40, Code of Federal Regulations.

Article 6. Program 3 Prevention Program

§ 5100.1. Process Safety Information.

(a) In accordance with the schedule set forth in Section 5100.2, the owner or operator shall complete a compilation of written process safety information before conducting any PHA required by the chapter. The compilation of written process safety information shall be maintained and kept up-to-date to enable the owner or operator and the employees involved in operating the process to identify and understand the hazards posed by those processes involving regulated substances. This process safety information shall include information pertaining to the hazards of the regulated substances used or produced by the process, information pertaining to the technology of the process, and information pertaining to the equipment in the process.

(b) Information pertaining to the hazards of the regulated substances in the process. This information shall consist of at least the following:

(1) Toxicity information;

(2) Permissible exposure limits;

(3) Physical data;

(4) Reactivity data and chemical compatibility data during handling, use and application at the stationary source;

(5) Corrosivity data;

(6) Thermal and chemical stability data; and,

(7) Hazardous effects of inadvertent mixing of different materials that could foreseeably occur.

NOTE TO SECTION (b): Material Safety Data Sheets meeting the requirements of Section 5189 of Title 8 of CCR may be used to comply with this requirement to the extent they contain the information required by this subsection.

(c) Information pertaining to the technology of the process.

(1) Information concerning the technology of the process shall include at least the following:

(A) A block flow diagram or simplified process flow diagram;

(B) Process chemistry;

(C) Maximum intended inventory;

(D) Safe upper and lower limits for such items as temperatures, pressures, flows or compositions; and,

(E) An evaluation of the consequences of deviations.

(2) Where the original technical information no longer exists, such information may be developed in conjunction with the PHA in sufficient detail to support the analysis.

(d) Information pertaining to the equipment in the process.

(1) Information pertaining to the equipment in the process shall include:

(A) Materials of construction;

(B) Piping and instrument diagrams (P&ID's);

(C) Electrical classification;

(D) Relief system design and design basis;

(E) Ventilation system design;

(F) Design codes and standards employed;

(G) Material and energy balances for processes built after June 21, 1999; and,

(H) Safety systems (e.g., interlocks, detection, or suppression systems).

(2) The owner or operator shall document that equipment complies with recognized and generally accepted good engineering practices.

(3) For existing equipment designed and constructed in accordance with codes, standards, or practices that are no longer in general use, the owner or operator shall determine and document that the equipment is designed, maintained, inspected, tested, and operating in a safe manner.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.65, Part 68, Title 40, Code of Federal Regulations.

§ 5100.2. Process Hazard Analysis [PHA].

(a) The owner or operator shall perform an initial PHA (hazard evaluation) on processes covered by this article. The PHA shall be appropriate to the complexity of the process and shall identify, evaluate, and control the hazards involved in the process. The PHA shall be conducted as soon as possible during the development of the CalARP program, but not later than the date of submittal of the RMP. Notwithstanding section (c) below, PHAs completed to comply with Section 5189 of Title 8 of CCR are acceptable as initial PHAs. These PHAs shall be updated and revalidated, based on their completion date.

(b) The owner or operator shall work closely with AAs in deciding which PHA methodology is best suited to determine the hazards of the process being analyzed. The owner or operator shall use one or more of the following methodologies that are appropriate to determine and evaluate the hazards of the process being analyzed:

(1) What-If;

(2) Checklist;

(3) What-If / Checklist;

(4) Hazard and Operability Study (HAZOP);

(5) Failure Mode and Effects Analysis (FMEA);

(6) Fault Tree Analysis; or,

(7) An appropriate equivalent methodology.

(c) The PHA shall address:

(1) The hazards of the process;

(2) The identification of any previous incident which had a likely potential for catastrophic consequences;

(3) Engineering and administrative controls applicable to the hazards and their interrelationships such as appropriate application of detection methodologies to provide early warning of releases. (Acceptable detection methods might include process monitoring and control instrumentation with alarms, and detection hardware such as hydrocarbon sensors.);

(4) Consequences of failure of engineering and administrative controls;

(5) Stationary source siting;

(6) Human factors;

(7) A qualitative evaluation of a range of the possible safety and health effects of failure of controls; and,

(8) The PHA shall include the consideration of external events, including seismic events, if applicable. PHAs completed for other programs where external events were not considered shall be updated to include external events.

(d) The PHA shall be performed by a team with expertise in engineering and process operations, and the team shall include at least one employee who has experience and knowledge specific to the process being evaluated. Also, one member of the team must be knowledgeable in the specific PHA methodology being used.

(e) The owner or operator shall establish a system to address the team's findings and recommendations; assure that the recommendations are resolved and documented; document what actions are to be taken; develop a written schedule of when these actions are to be completed; complete these actions on a timetable agreed upon with the AA, or within two and one-half (2.5) years of performing the PHA, or the next planned turnaround, for those items that require a turnaround; document the final resolution taken to address each recommendation and actual completion date; and communicate the actions to operating, maintenance and other employees whose work assignments are in the process and who may be affected by the recommendations or actions. The above timelines shall not apply to any process hazard analysis completed prior to January 1, 2015.

(f) At least every five years after the completion of the initial PHA, the PHA shall be updated and revalidated by a team meeting the requirements in section (d), to assure that the PHA is consistent with the current process. Notwithstanding section (c), updated and revalidated PHA[s] completed to comply with Section 5189 of Title 8 of CCR are acceptable to meet the requirements of this section.

(g) The owner or operator shall retain PHAs and updates or revalidations for each process covered by this section, as well as the documented resolution of recommendations described in section (e), for the life of the process.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.67, Part 68, Title 40, Code of Federal Regulations.

§ 5100.3. Operating Procedures.

(a) The owner or operator shall develop and implement written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information and shall address at least the following elements:

(1) Steps for each operating phase:

(A) Initial startup;

(B) Normal operations;

(C) Temporary operations;

(D) Emergency shutdown including the conditions under which emergency shutdown is required, and the assignment of shutdown responsibility to qualified operators to ensure that emergency shutdown is executed in a safe and timely manner;

(E) Emergency operations;

(F) Normal shutdown; and,

(G) Startup following a turnaround, or after an emergency shutdown.

(2) Operating limits:

(A) Consequences of deviation; and,

(B) Steps required to correct or avoid deviation.

(3) Safety and health considerations:

(A) Properties of, and hazards presented by, the chemicals used in the process;

(B) Precautions necessary to prevent exposure, including engineering controls, administrative controls, and personal protective equipment;

(C) Control measures to be taken if physical contact or airborne exposure occurs;

(D) Quality control for raw materials and control of hazardous chemical inventory levels; and,

(E) Any special or unique hazards.

(4) Safety systems and their functions.

(b) Operating procedures shall be readily accessible to employees who work in or maintain a process.

(c) The operating procedures shall be reviewed as often as necessary to assure that they reflect current operating practice, including changes that result from changes in process chemicals, technology, and equipment, and changes to stationary sources. The owner or operator shall certify annually that these operating procedures are current and accurate.

(d) The owner or operator shall develop and implement safe work practices to provide for the control of hazards during operations such as lockout/tagout; confined space entry; opening process equipment or piping; and control over entrance into a stationary source by maintenance, contractor, laboratory, or other support personnel. These safe work practices shall apply to employees and contractor employees.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.69, Part 68, Title 40, Code of Federal Regulations.

§ 5100.4. Training.

(a) Initial training.

(1) Each employee presently involved in operating a process, and each employee before being involved in operating a newly assigned process, shall be trained in an overview of the process and in the operating procedures as specified in Section 5100.3. The training shall include emphasis on the specific safety and health hazards, emergency operations including shutdown, and safe work practices applicable to the employee's job tasks.

(2) In lieu of initial training for those employees already involved in operating a process on June 21, 1999 an owner or operator may certify in writing that the employee has the required knowledge, skills, and abilities to safely carry out the duties and responsibilities as specified in the operating procedures.

(b) Refresher training. Refresher training shall be provided at least every three years, and more often if necessary, to each employee involved in operating a process to assure that the employee understands and adheres to the current operating procedures of the process. The owner or operator, in consultation with the employees involved in operating the process, shall determine the appropriate frequency of refresher training.

(c) Training documentation. The owner or operator shall ascertain that each employee involved in operating a process has received and understood the training required by this section. The owner or operator shall prepare a record which contains the identity of the employee, the date of training, and the means used to verify that the employee understood the training.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.71, Part 68, Title 40, Code of Federal Regulations.

§ 5100.5. Mechanical Integrity.

(a) Application. Sections (b) through (f) of this section apply to the following process equipment:

(1) Pressure vessels and storage tanks;

(2) Piping systems (including ancillary components such as valves);

(3) Relief and vent systems and devices;

(4) Emergency shutdown systems;

(5) Controls (including monitoring devices and sensors, alarms, and interlocks); and,

(6) Pumps, compressors and their drivers.

(b) Written procedures. The owner or operator shall establish and implement written procedures to maintain the on-going integrity of process equipment.

(c) Training for process maintenance activities. The owner or operator shall train each employee involved in maintaining the on-going integrity of process equipment in an overview of that process and its hazards and in the procedures applicable to the employee's job tasks to assure that the employee can perform the job tasks in a safe manner.

(d) Inspection and testing.

(1) Inspections and tests shall be performed on process equipment.

(2) Inspection and testing procedures shall follow recognized and generally accepted good engineering practices.

(3) The frequency of inspections and tests of process equipment shall be consistent with applicable manufacturers' recommendations and good engineering practices, and more frequently if determined to be necessary by prior operating experience.

(4) The owner or operator shall document each inspection and test that has been performed on process equipment. The documentation shall identify the date of the

inspection or test, the name of the person who performed the inspection or test, the serial number or other identifier of the equipment on which the inspection or test was performed, a description of the inspection or test performed, and the results of the inspection or test.

(e) Equipment deficiencies. The owner or operator shall correct deficiencies in equipment that are outside acceptable limits (defined by the process safety information in Section 5100.1) before further use or in a safe and timely manner when necessary means are taken to assure safe operation.

(f) Quality assurance.

(1) In the construction of new plants and equipment, the owner or operator shall assure that equipment as it is fabricated is suitable for the process application for which they will be used.

(2) Appropriate checks and inspections shall be performed to assure that equipment is installed properly and consistent with design specifications and the manufacturer's instructions.

(3) The owner or operator shall assure that maintenance materials, spare parts and equipment are suitable for the process application for which they will be used.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.73, Part 68, Title 40, Code of Federal Regulations.

§ 5100.6. Management of Change.

(a) The owner or operator shall establish and implement written procedures to manage changes (except for “replacements in kind”) to process chemicals, technology, equipment, and procedures; and, changes to stationary sources that affect a covered process.

(b) The procedures shall assure that the following considerations are addressed prior to any change:

(1) The technical basis for the proposed change;

(2) Impact of change on safety and health;

(3) Modifications to and/or development of new operating and maintenance procedures;

(4) Necessary time period for the change; and,

(5) Authorization requirements for the proposed change.

(c) Employees involved in operating a process and maintenance and contract employees whose job tasks will be affected by a change in the process shall be informed of, and trained in, the change prior to start-up of the process or affected part of the process.

(d) If a change covered by this section results in a change in the process safety information required by Section 5100.1, such information shall be updated accordingly.

(e) If a change covered by this section results in a change in the operating procedures or practices required by Section 5100.3, and/or results in a change in the written procedures to maintain the ongoing integrity of process equipment required by Section 5100.5, such procedures or practices shall be updated prior to start-up of the process.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.75, Part 68, Title 40, Code of Federal Regulations.

§ 5100.7. Pre-Startup Safety Review.

(a) The owner or operator shall perform a pre-startup safety review for new stationary sources and for modified stationary sources when the modification is significant enough to require a change in the process safety information.

(b) The pre-startup safety review shall confirm, as a verification check, independent of the management of change process, that prior to the introduction of regulated substances to a process:

(1) Construction and equipment is in accordance with design specifications;

(2) Safety, operating, maintenance, and emergency procedures are in place and are adequate;

(3) For new stationary sources, a PHA has been performed and recommendations have been resolved or implemented before startup, and modified stationary sources meet the requirements contained in management of change, Section 5100.6; and,

(4) Training of each employee involved in operating a process has been completed.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.77, Part 68, Title 40, Code of Federal Regulations.

§ 5100.8. Compliance Audits.

(a) The owner or operator shall certify that they have evaluated compliance with the provisions of this article at least every three years to verify that the procedures and practices developed under the chapter are adequate and are being followed.

(b) The compliance audit shall be conducted by at least one person knowledgeable in the process.

(c) A report of the scope, methods used, results and findings of the audit shall be developed. This report, including results, shall be available for UPA review.

(d) The owner or operator shall promptly determine and document an appropriate response to each of the findings of the compliance audit. The owner or operator shall enter into an agreement with the UPA on a timetable for resolution of these findings. Otherwise these responses shall be completed one and one-half (1.5) years after performing the compliance audit, or the next planned turnaround for items requiring a turnaround. These timelines shall not apply to any compliance audit completed prior to January 1, 2015. The owner or operator shall document the actual completion dates when deficiencies were corrected.

(e) The owner or operator shall retain the two most recent compliance audit reports.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.79, Part 68, Title 40, Code of Federal Regulations.

§ 5100.9. Incident Investigation.

(a) The owner or operator shall investigate each incident which resulted in, or could reasonably have resulted in, a catastrophic release of a regulated substance.

(b) An incident investigation shall be initiated as promptly as possible, but not later than 48 hours following the incident.

(c) An incident investigation team shall be established and consist of at least one person knowledgeable in the process involved, including a contract employee if the incident involved work of the contractor, and other persons with appropriate knowledge and experience to thoroughly investigate and analyze the incident.

(d) A report shall be prepared at the conclusion of the investigation which includes at a minimum:

(1) Date the investigation began;

(2) A description of the incident, including all of the data required under 5080.9(b); and,

(3) Recommendations resulting from the investigation.

(e) The owner or operator shall establish a system to promptly address and resolve the incident report findings and recommendations. The owner or operator shall enter into an agreement with the AA on a timetable for resolution of these findings and recommendations. Otherwise these resolutions shall be completed no later than one and

one-half (1.5) years after the completion of the incident investigation, or two (2) years after the date of the incident, whichever is the earlier of the two dates, or the next planned turnaround for those items requiring a turnaround. Resolutions and corrective actions with actual completion dates shall be documented.

(f) The report shall be reviewed with all affected personnel whose job tasks are relevant to the incident findings including contract employees where applicable.

(g) Incident investigation reports shall be retained for five years.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.81, Part 68, Title 40, Code of Federal Regulations.

§ 5100.10. Employee Participation.

(a) The owner or operator shall develop a written plan of action regarding the implementation of the employee participation required by this section.

(b) The owner or operator shall consult with employees and their representatives on the conduct and development of PHA and on the development of the other elements of process safety management in this chapter.

(c) The owner or operator shall provide employees and their representatives with access to PHAs and to all other information required to be developed under this chapter.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.83, Part 68, Title 40, Code of Federal Regulations.

§ 5100.11. Hot Work Permit.

(a) The owner or operator shall issue a hot work permit for hot work operations conducted on or near a covered process.

(b) The permit shall document that the fire prevention and protection requirements in Section 5189 of Title 8 of CCR have been implemented prior to beginning the hot work operations; it shall indicate the date(s) authorized for hot work; and identify the object on which hot work is to be performed. The permit shall be kept on file until completion of the hot work operations.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.85, Part 68, Title 40, Code of Federal Regulations.

§ 5100.12. Contractors.

(a) Application. This section applies to contractors performing maintenance or repair, turnaround, major renovation, or specialty work on or adjacent to a covered process. It does not apply to contractors providing incidental services which do not influence process safety, such as janitorial work, food and drink services, laundry, delivery or other supply services.

(b) Owner or operator responsibilities.

(1) The owner or operator, when selecting a contractor, shall obtain and evaluate information regarding the contract owner or operator's safety performance and programs.

(2) The owner or operator shall inform the contract owner or operator of the known potential fire, explosion, or toxic release hazards related to the contractor's work and the process.

(3) The owner or operator shall explain to the contract owner or operator the applicable provisions of Article 8.

(4) The owner or operator shall develop and implement safe work practices consistent with Section 5100.3(d), to control the entrance, presence, and exit of the contract owner or operator and contract employees in covered process areas.

(5) The owner or operator shall periodically evaluate and document the evaluation of the performance of the contract owner or operator in fulfilling their obligations as specified in section (c).

(c) Contract owner or operator responsibilities.

(1) The contract owner or operator shall assure that each contract employee is trained in the work practices necessary to safely perform his or her job.

(2) The contract owner or operator shall assure that each contract employee is instructed in the known potential fire, explosion, or toxic release hazards related to his or her job and the process, and the applicable provisions of the emergency action plan.

(3) The contract owner or operator shall document that each contract employee has received and understood the training required by this section. The contract owner or operator shall prepare a record which contains the identity of the contract employee, the date of training, and the means used to verify that the employee understood the training.

(4) The contract owner or operator shall assure that each contract employee follows the safety rules of the stationary source including the safe work practices required by Section 5100.3(d).

(5) The contract owner or operator shall advise the owner or operator of any unique hazards presented by the contract owner or operator's work, or of any hazards found by the contract owner or operator's work.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.87, Part 68, Title 40, Code of Federal Regulations.

Article 7. Program 4 Prevention Program

§ 5110.1. Applicability.

(a) This Article shall apply to processes within petroleum refineries.

(b) All processes of the petroleum refinery are covered except process plant laboratories or laboratories that are under the supervision of a technically qualified individual as defined in section 720.3(ee) of 40 CFR. This exemption does not apply to specialty chemical production; manufacture, processing or use of substances in pilot plant scale operations; and activities conducted outside the laboratory.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; and Sections 25531, 25531.2 and 25534, Health and Safety Code.

§ 5110.2. Purpose.

The purpose of Program 4 is to prevent major incidents at petroleum refineries in order to protect the health and safety of communities and the environment.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; and Sections 25531, 25531.2, 25534, 25535 and 25535.1, Health and Safety Code.

§ 5110.3. Process Safety Information.

(a) The owner or operator shall develop and maintain a compilation of written process safety information before conducting any PHA, Hierarchy of Hazard Control Analysis, Safeguard Protection Analysis, or Damage Mechanism Review, as required by this Article. The compilation of written process safety information shall be sufficient to enable the owner or operator and the employees involved in operating or maintaining a process to identify and understand the hazards posed by the process. This process safety information shall include information pertaining to (1) the hazards of any highly hazardous materials used or produced by the process; (2) the technology of the process; (3) process equipment used in the process; and (4) results of previous Damage Mechanism Reviews. The process safety information shall be made available to all employees and relevant process safety information shall be made available to affected employees of contractors. Information pertaining to the hazards of the process shall be effectively communicated to all affected employees.

(b) Information pertaining to hazards of substances used in, present in or produced by the process shall include at least the following:

(1) Toxicity information, including acute and chronic health hazards;

(2) California Permissible exposure limits (PELs);

(3) For regulated substances: American Conference of Governmental Industrial Hygienists (ACGIH) Emergency Response Planning Guideline values, U.S. EPA Acute Exposure Guideline Levels (AEGLs), and the California Office of Environmental Health Hazard Assessment (OEHHA) acute and eight-hour Reference Exposure Levels (RELs);

(4) Physical data;

(5) Corrosion data;

(6) Thermal and chemical stability data;

(7) Reactivity data; and

(8) Hazardous effects of incompatible mixtures that could foreseeably occur.

(c) Information pertaining to the technology of the process shall include at least the items specified in paragraphs (c)(1) through (c)(5). Safety Data Sheets meeting the requirements of section 5194(g) of Title 8 of CCR may be used to comply with this requirement to the extent they contain the information required by this subsection.

(1) A block flow diagram or simplified process flow diagram;

(2) Process chemistry;

(3) Maximum intended inventory;

(4) Safe upper and lower limits for process variables such as temperatures, pressures, flows, levels, and compositions; and,

(5) The consequences of deviations, including chemical mixing or reactions that may affect the safety and health of employees or the public.

(d) Information pertaining to the process equipment shall include at least the following:

(1) Materials of construction;

(2) Piping and instrument diagrams (P&ID's);

(3) Electrical classification;

(4) Relief system design and design basis;

(5) Ventilation system design;

(6) Design codes and standards employed, including design conditions and operating limits;

(7) Material and energy balances for processes built after June 21, 1999 and previously covered under Program 3, and material and energy balances for all other processes as of the effective date of this Article;

(8) Safety systems, such as interlocks, detection and suppression systems; and

(9) Electrical supply and distribution systems.

(e) The owner or operator shall document that process equipment complies with recognized and generally accepted good engineering practices (RAGAGEP), where RAGAGEP has been established for that process equipment, or with other more protective internal practices that ensure safe operation. If the owner or operator installs new process equipment for which no RAGAGEP exists, the owner or operator shall document that the equipment is designed, constructed, installed, maintained, inspected, tested and operated in a safe manner.

(f) If existing process equipment was designed and constructed in accordance with codes, standards, or practices that are no longer in general use, the owner or operator shall document that the process equipment is designed, installed, maintained, inspected, tested, and operating in a safe manner for its intended purpose.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; Section 25531, Health and Safety Code; and Section 68.65, Part 68, Title 40, Code of Federal Regulations.

§ 5110.4. Process Hazard Analysis [PHA].

(a) The owner or operator shall perform and document an effective PHA appropriate to the complexity of each process in order to identify, evaluate, and control hazards associated with each process. All initial PHAs for processes not previously covered under Article 6 shall be completed within three years of the effective date of this Article, in accordance with this section. PHAs performed in accordance with the requirements of Article 6 shall satisfy the initial PHA requirements of this section. All modes of operation as set forth in subsection 5110.6(a)(1) shall be covered by the PHA. The owner or operator shall determine and document the priority order for conducting PHAs based on the extent of process hazards, the number of potentially affected people, the age of the process and the process operating history.

(b) The owner or operator shall work with the UPA in selecting and using at least one of the following methods:

(1) What-If;

(2) Checklist;

(3) What-If / Checklist;

(4) Hazard and Operability Study (HAZOP);

(5) Failure Mode and Effects Analysis (FMEA);

(6) Fault Tree Analysis;

(7) Other PHA methods recognized by engineering organizations or governmental agencies.

(c) The PHA shall address:

(1) The hazards of the process;

(2) Previous publicly documented incidents in the petroleum refinery and petrochemical industry sector that are relevant to the PHA;

(3) Damage Mechanism Review reports pursuant to subsection 5110.8(e) that are applicable to the process units;

(4) Hierarchy of Hazard Control Analysis reports pursuant to section 5110.16 that are applicable to the process units;

(5) A review of Management of Change documents completed since the last PHA that apply to the process unit.

(6) Potential consequences of failures of process equipment;

(7) Facility siting, including the placement of processes, equipment, buildings, employee occupancies and work stations in order to effectively protect employees and the public from process safety hazards;

(8) Human factors as required under section 5110.18;

(9) A qualitative evaluation of the types, severity, and likelihood of possible incidents that could result from a failure of a process or of process equipment;

(10) The potential effects of external events, including seismic events, if applicable; and

(11) The findings of incident investigations relevant to the process.

(d) The PHA shall be performed by a team with expertise in engineering and process operations and shall include at least one operating employee who currently works or provides training in the unit, and has experience and knowledge specific to the process being evaluated. The team shall also include one member with expertise in the specific

PHA method being used. As necessary, the team shall consult with individuals with expertise in damage mechanisms, process chemistry, and control systems. The owner or operator shall provide for employee participation in this process, pursuant to section 5110.13.

(e) For each scenario in the PHA that identifies the potential for a major incident, the owner or operator shall perform a Safeguard Protection Analysis (SPA) pursuant to section 5110.5. Upon completion of the SPA, append SPA recommendations to PHA report.

(f) For all recommendations made by the PHA team for each scenario that identifies the potential for a major incident, the owner or operator shall conduct in a timely manner a Hierarchy of Hazard Control Analysis pursuant to section 5110.16.

(g) The team shall document its findings and recommendations in a report, which shall be available in the respective work area for review by any person working in that area.

(h) The PHA report shall include: (1) the method, analyses and factors considered by the PHA team; (2) the findings of the PHA team; and (3) the PHA team's recommendations.

(i) Except as required in (f), the owner or operator shall follow the corrective action work process documented in subsections 5110.19(d) and (e) when resolving the PHA team's findings and recommendations, determining action items for implementation, tracking to completion, and documentation of closeout.

(j) At least once every five (5) years, a written PHA shall be updated and revalidated in accordance with the requirements of this section, to ensure that the PHA is consistent with the current process.

(k) The owner or operator shall retain for the life of the process all PHAs and PHA updates and revalidations for each process covered by this section. This information shall contain the documented resolution of recommendations as appendices described in subsections 5110.19(d) and (e).

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; Section 25531, Health and Safety Code; and Section 68.67, Part 68, Title 40, Code of Federal Regulations.

§ 5110.5. Safeguard Protection Analysis.

(a) For each scenario where a PHA identifies the potential for a major incident, the owner or operator shall have a SPA team perform a written SPA to determine (1) the effectiveness of existing individual safeguards; (2) the combined effectiveness of all existing safeguards for each failure scenario in the PHA; (3) the individual and combined effectiveness of safeguards recommended in the PHA; and (4) the individual and combined effectiveness of additional or alternative safeguards that may be needed.

(b) All independent protection layers (IPLs) for each failure scenario shall be independent of each other and independent of initiating causes.

(c) The SPA shall use a quantitative or semi-quantitative method, such as Layer of Protection Analysis (LOPA) or an equally effective method. The risk reduction obtainable by each IPL shall be based on site-specific failure rate data, or in the absence of such data, industry failure rate data for each device, system, or human factor.

(d) The owner or operator shall complete all SPAs for the PHA within six (6) months of completion of the PHA.

(e) The SPA shall be performed by a team with expertise in engineering and process operations and the team shall include at least one operating employee who has experience and knowledge specific to the process being evaluated. The team shall also include one member knowledgeable in the specific SPA methodology being used. As necessary, the team shall consult with individuals with expertise in damage mechanisms, process chemistry, or an engineer specializing in controls systems and instrumentation. The owner or operator shall provide for employee participation in this process, pursuant to section 5110.13. The PHA team may perform the SPA if the PHA team meets the requirements of this subsection.

(f) The SPA team shall document the following: (1) potential initiating events and their likelihood and possible consequences, including equipment failures, human errors, loss of flow control, loss of pressure control, loss of temperature control, loss of level control, excess reaction or other conditions that may lead to a loss of containment; (2) the risk reduction achieved by each IPL for each initiating event; (3) necessary maintenance and testing to ensure that all IPLs function as designed; and (4) recommendations to address any deficiencies identified by the SPA.

(g) The SPA findings and recommendations shall be appended to the PHA report.

(h) The owner or operator shall follow the corrective action work process documented in subsections 5110.19(d) and (e) when resolving the SPA team's findings and recommendations, determining action items for implementation, tracking to completion, and documentation of closeout.

(i) All SPA documentation shall be retained for the life of the process.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; and Sections 25531, 25531.2, 25534, 25535 and 25535.1, Health and Safety Code.

§ 5110.6. Operating Procedures.

(a) The owner or operator shall develop and implement effective written operating procedures. The operating procedures shall provide clear instructions for safely conducting activities involved in each process. The operating procedures shall be consistent with the process safety information and shall address the following:

(1) Steps for each operating phase or mode of operation:

(A) Startup;

(B) Normal operations;

(C) Temporary operations as the need arises;

(D) Emergency shutdown, including the conditions under which emergency shutdown is required, provisions granting the authority of the qualified operator to shut down the operation or process, and the assignment of responsibilities to qualified operators in order to ensure that emergency shutdown is executed in a safe and timely manner;

(E) Normal shutdown; and,

(F) Startup following a turnaround, a planned or unplanned shutdown, or after an emergency shutdown.

(2) Operating limits:

(A) Consequences of deviation(s); and,

(B) Steps required to correct or avoid deviation(s).

(3) Safety and health considerations:

(A) Properties of, and hazards presented by, the chemicals used in the process;

(B) Precautions necessary to prevent exposure, including passive, active and procedural safeguards; and personal protective equipment;

(C) Protective measures to be taken if physical contact or inhalation exposure occurs;

(D) Safety procedures for opening process equipment;

(E) Verification of the composition and properties of raw materials and control of hazardous chemical inventory levels; and,

(F) Any special or unique hazards.

(4) Safety systems and their functions.

(b) The Operating Procedures shall include emergency operations for each process, including any response to the over-pressurizing or overheating of equipment or piping, and the handling of leaks, spills, releases and discharges. These procedures shall be consistent with the procedures developed as required by subsection (a)(1)(D) and shall provide that only qualified operators may initiate these operations and that prior to allowing employees in the vicinity of a leak, release or discharge, the owner or operator shall at a minimum do one of the following:

(1) Shutdown and depressurize all process operations where a leak, release or discharge is occurring; or

(2) Isolate any vessel, piping, and equipment where a leak, spill or discharge is occurring; or

(3) Follow established criteria for handling leaks, spills, or discharges that are designed to provide a level of protection that is functionally equivalent to, or safer than, shutting down or isolating the process.

(c) A copy of the operating procedures shall be readily accessible to employees who work in or near the process area and to any other person who works in or near the process area or who maintains a process.

(d) The operating procedures shall be reviewed and updated as often as necessary to ensure that they reflect current safe operating practices. The operating procedures shall include any changes that result from alterations in process chemicals, technology, personnel, process equipment, or other changes to the stationary source. Changes to operating procedures shall be managed in accordance with the MOC requirements in section 5110.9. The owner or operator shall certify annually that operating procedures are current and accurate.

(e) The owner or operator shall develop, implement, and maintain safe work practices to prevent or control hazards during specific activities, such as opening process equipment or piping; tasks requiring lock-out/tag-out procedures; confined space entry; handling, controlling, and stopping leaks, spills, releases and discharges; and control over entry into hazardous work areas by maintenance, contractor, laboratory, or other support personnel. Safe work practices shall apply to employees and contractor employees.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; Section 25531, Health and Safety Code; and Section 68.69, Part 68, Title 40, Code of Federal Regulations.

§ 5110.7. Training.

(a) Initial training.

(1) Each employee involved in operating a process, and each operating employee prior to working in a newly assigned process, shall be trained in an overview of the process and in the operating procedures as specified in section 5110.6. The training shall include material on the specific safety and health hazards applicable to the employee's job tasks, procedures, including emergency operations and shutdown, and safe work practices applicable to the employee's job tasks.

(2) The owner or operator shall train each employee involved in maintaining the on-going integrity of process equipment in an overview of that process and its hazards and in the procedures applicable to the employee's job tasks to assure that the employee can perform the job tasks in a safe manner.

(b) Refresher and supplemental training.

(1) At least once every three years, and more often if necessary, refresher and supplemental training shall be provided to each employee involved in operating a process in order to ensure the employee understands and adheres to the current operating procedures of the process. The owner or operator, in consultation with the employees involved in operating the process, shall determine the appropriate frequency and content of refresher training.

(2) At least once every three years, and more often if necessary, the owner or operator shall provide effective refresher and supplemental training to each maintenance employee to ensure that each employee understands and adheres to current maintenance procedures.

(c) Training certification. The owner or operator shall ensure that each employee involved in operating a process has received, understood and successfully completed training as specified by this section. The owner or operator, after the initial or refresher training, shall prepare a certification record containing the identity of the employee, the date(s) of training, the means used to verify that the employee understood the training, and the signature(s) of the person administering the training.

(d) The owner or operator shall develop and implement an effective written program that includes (1) the requirements that an employee must meet in order to be designated as qualified, and (2) employee testing procedures to verify understanding and to ensure competency in job skill levels and work practices that protect employee and public safety and health.

(e) The owner or operator shall develop and implement an effective training program to ensure that all affected employees are aware of and understand all Program 4 elements described in this Article. The owner or operator shall complete the initial training required in this section within twenty-four (24) months following the effective date of this section. Employees and employee representatives participating in a specialized team pursuant to this Article shall be trained in the Program elements relevant to that team.

(f) The owner or operator shall provide for employee participation in developing and implementing the training program, pursuant to section 5110.13.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; Section 25531, Health and Safety Code; and Section 68.71, Part 68, Title 40, Code of Federal Regulations.

§ 5110.8. Mechanical Integrity.

(a) Written procedures. The owner or operator shall develop, implement, and maintain effective written procedures to ensure the ongoing integrity of process equipment.

(1) The procedures shall provide clear instructions for safely conducting maintenance activities on process equipment, consistent with the Process Safety Information.

(2) The procedures and inspection documents developed under this subsection shall be readily accessible to employees and employee representatives pursuant to section 5110.13.

(b) Inspection and testing.

(1) Inspections and tests shall be performed on process equipment, using procedures that meet or exceed recognized and generally accepted good engineering practices (RAGAGEP).

(2) The frequency of inspections and tests of process equipment shall be consistent with (1) the applicable manufacturers' recommendations, (2) RAGAGEP, or (3) internal practices that are more protective than (1) or (2). Inspections and tests shall be conducted more frequently if necessary, based on the operating experience with the process equipment.

(3) The owner or operator shall retain a certification record to document that each inspection and test has been performed in accordance with this subsection. The certification record shall identify the date of the inspection; the name of the person who performed the inspection or test; a description of the inspection or test performed; the results of the inspection or test; and the serial number or other identifier of the equipment on which the inspection or test was performed.

(c) Equipment deficiencies. The owner or operator shall correct deficiencies to ensure safe operation of process equipment. Repair methodologies shall be consistent with RAGAGEP or more protective internal practices.

(d) Quality assurance.

(1) The owner or operator shall ensure that all process equipment at a minimum complies with the criteria established in subsection 5110.3(d). In meeting this requirement, the owner or operator shall ensure that all process equipment is: (1) suitable for the process application for which it is or will be used; (2) fabricated from the proper materials of construction; (3) designed, constructed, installed, maintained, inspected, tested, operated and replaced in compliance with the manufacturer's and any other design specifications and all applicable codes and standards.

(2) If the owner or operator installs new process equipment or has existing process equipment for which no RAGAGEP exists, the owner or operator shall ensure and document that these are designed, built, installed, maintained, inspected, tested and operated in a safe manner.

(3) The owner or operator shall conduct regularly scheduled checks and inspections as necessary to ensure that the requirements of paragraph (1) are met.

(4) The owner or operator shall ensure that maintenance materials, spare parts and equipment meet design specifications and applicable codes.

(5) The owner or operator shall establish a process for evaluating new or updated equipment codes and standards and implementing changes as appropriate to ensure safe operation.

(e) Damage Mechanism Review

(1) The owner or operator shall complete a Damage Mechanism Review (DMR) for each process for which a damage mechanism exists. Where no DMR is performed, the owner or operator shall document the rationale for the determination that no damage mechanism exists. The owner or operator shall determine and document the priority order for conducting the DMR based on process operating history, PHA schedule and inspection records. No less than 50 percent of the initial DMRs shall be completed within three (3) years of the effective date of this Article, and the remainder within five (5) years of the effective date of this Article. If the owner or operator has conducted and documented a DMR for a process unit within five (5) years prior to the effective date of this section, and that DMR includes the elements identified in paragraph (e)(8), that DMR may be used to satisfy the owner or operator's obligation to complete an initial DMR under this paragraph.

(2) A DMR shall be updated at least once every five (5) years consistent with the requirements of this section.

(3) A DMR shall be reviewed as part of a major change on a process for which a damage mechanism exists, prior to approval of the change. If a major change may introduce a damage mechanism, a DMR shall be conducted, prior to approval of the change. As part of an incident investigation pursuant to section 5110.12, where a damage mechanism is identified as a contributing factor, the owner or operator shall review the most recent DMR(s) that are relevant to the investigation. If a DMR has not been performed on the processes that are relevant to the investigation, the owner or operator shall conduct and complete a DMR prior to implementation of corrective actions pursuant to section 5110.19(d) and (e).

(4) The DMR for a process unit shall be available to the team performing a PHA for that process unit.

(5) The DMR shall be performed by a team with expertise in engineering, operation of the processes under review, equipment and pipe inspection, and damage and failure mechanisms. The team shall also include one member knowledgeable in the specific DMR method being used. The owner or operator shall provide for employee participation in this process, pursuant to section 5110.13.

(6) The DMR for each process shall include:

(A) Assessment of Process Flow Diagrams (PFDs);

(B) Identification of all potential damage mechanisms pursuant to subsection (e)(7) below;

(C) Determination that the materials of construction are appropriate for their application and are resistant to potential damage mechanisms;

(D) A discussion of the conditions that cause the damage mechanism and how rapidly the damage may progress;

(E) Methods to prevent or mitigate damage;

(F) Review of operating parameters to identify operating conditions that could accelerate damage or that could minimize or eliminate damage;

(7) For purposes of this section, damage mechanisms include, but are not limited to:

(A) Mechanical loading failures, such as ductile fracture, brittle fracture, mechanical fatigue, and buckling;

(B) Erosion, such as abrasive wear, adhesive wear, and fretting;

(C) Corrosion, such as uniform corrosion, localized corrosion, and pitting;

(D) Thermal-related failures, such as creep, metallurgical transformation, and thermal fatigue;

(E) Cracking, such as stress-corrosion cracking; and

(F) Embrittlement, such as high-temperature hydrogen attack.

(8) DMRs shall include an assessment of previous experience with the process including the inspection history and all damage mechanism data; a review of industry-wide experience with the process; and applicable standards, codes and practices.

(9) At the conclusion of the analysis, the team shall prepare a written DMR report that includes:

(A) The process unit(s) reviewed;

(B) Damage mechanisms analyzed;

(C) Results of the analyses conducted according to subsection (e)(7) above;

(D) Recommendations for temporary mitigation;

(E) Recommendations for prevention.

(10) The report shall be provided to and, upon request, reviewed with all operating, maintenance, and other personnel, whose work assignments are within the process unit covered in the DMR.

(11) The owner or operator shall follow the corrective action work process documented in subsections 5110.19(d) and (e) when resolving the DMR team's findings and recommendations, determining corrective action for implementation, tracking to completion, and documentation of closeout.

(12) DMR reports shall be retained for the life of the process unit.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; Section 25531, Health and Safety Code; and Section 68.73, Part 68, Title 40, Code of Federal Regulations.

§ 5110.9. Management of Change.

(a) The owner or operator shall develop, implement and maintain effective written Management of Change (MOC) procedures to manage changes in process chemicals, technology, procedures, process equipment, and facilities. The owner or operator shall also develop, implement and maintain written Management of Organizational Change (MOOC) procedures to manage changes in personnel or organizational issues. The MOC procedure shall include provisions for temporary repairs, including temporary piping or equipment repairs.

(b) The MOC procedures shall ensure that the following items are addressed and documented prior to any change:

(1) The technical basis for the proposed change;

(2) Potential process safety impacts of the change;

(3) Modifications to operating and maintenance procedures or development of new operating and maintenance procedures;

(4) The time period required for the change; and

(5) Authorization requirements for the proposed change.

(c) Prior to implementation of a major change, the owner or operator shall review or conduct a DMR pursuant to subsection 5110.8(e), and perform a Hierarchy of Hazard Control Analysis (HCA) pursuant to section 5110.16. The findings of the DMR and recommendations of the HCA shall be included in the MOC documentation.

(d) The owner or operator shall use qualified personnel and appropriate methods for MOCs based upon hazard, complexity and type of change.

(e) The owner or operator shall provide for employee participation, pursuant to section 5110.13.

(f) Employees involved in the process as well as maintenance workers whose job tasks will be affected by a change, shall be informed of, and effectively trained in the change in a timely manner, prior to implementation of the change. For contractors and employees of contractors who are operating the process and whose job tasks are affected by a change, the owner or operator shall make the MOC documentation available to and require effective training in the change prior to implementation of the change, pursuant to section 5110.15.

(g) If a change covered by this section results in a change to the Process Safety Information required by section 5110.3, such information shall be updated as soon as possible.

(h) If a change covered by this section results in a change to the Operating Procedures required by section 5110.6, or results in a change in the written procedures to maintain the ongoing integrity of process equipment required by section 5110.8 such procedures shall be updated prior to the start-up of the process.

(i) Management of Organizational Change. The owner and operator shall develop, implement, and maintain effective written procedures to manage organizational change.

(j) The owner or operator shall designate a team to conduct a Management of Organizational Change (MOOC) assessment prior to reducing staffing levels, reducing classification levels of employees, changing shift duration, or substantively increasing employee responsibilities at or above 15%. The MOOC assessment is required only for changes with a duration exceeding 90 calendar days, affecting operations, engineering, maintenance, health and safety and emergency response. This requirement shall also apply to stationary sources using contractors in permanent positions.

(k) The MOOC shall be in writing and shall include a description of the change being proposed; the makeup of the team responsible for assessing the proposed change; the factors evaluated by the team; the rationale for the team's decision to implement or not implement the change; and the team's findings and recommendations.

(1) Prior to conducting the MOOC, the owner or operator shall ensure that the job function descriptions are current and accurate for all positions potentially affected by the change.

(2) The owner or operator shall provide for employee participation pursuant to section 5110.13.

(3) All management of organizational change analyses shall include an assessment of human factors, pursuant to section 5110.18.

(4) The stationary source manager, or his or her designee, shall certify based on information and belief formed after reasonable inquiry that the MOOC assessment

is accurate and that the proposed organizational change(s) meets the requirements of this section.

(l) Prior to implementing a change, the owner or operator shall inform all employees potentially affected by the change.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; Section 25531, Health and Safety Code; and Section 68.75, Part 68, Title 40, Code of Federal Regulations.

§ 5110.10. Pre-Startup Safety Review.

(a) The owner or operator shall perform a pre-startup safety review (PSSR) for new processes, for modified processes if the modification necessitates a change in the Process Safety Information, and for partial and unplanned shutdowns. The owner or operator shall also conduct a PSSR for all turnaround work performed on a process.

(b) The pre-startup safety review shall confirm, as a verification check, independent of the management of change process, that prior to the introduction of highly hazardous materials to a process:

(1) Construction, maintenance, and repair work has been performed in accordance with design specifications;

(2) Process equipment has been maintained and is operable in accordance with design specifications;

(3) Effective safety, operating, maintenance, and emergency procedures are in place;

(4) For new process units, a Process Hazard Analysis, Hierarchy of Hazard Control Analysis, Damage Mechanism Review and Safeguard Protection Analysis have each been performed as applicable pursuant to this Article, and recommendations have been implemented or resolved before start-up. For new or modified processes, all changes have been implemented in accordance with the requirements contained in the Management of Change, section 5110.9; and,

(5) Training of each operating employee and maintenance employee affected by the change has been completed.

(c) An operating employee who currently works in the unit and has expertise and experience in the process being started shall be designated as the employee representative pursuant to section 5110.13.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; Section 25531, Health and Safety Code; and Section 68.77, Part 68, Title 40, Code of Federal Regulations.

§ 5110.11. Compliance Audits.

(a) Every three (3) years, the owner or operator shall conduct an effective compliance audit and shall certify that the owner or operator has evaluated the procedures and practices developed under this Article to verify that the procedures and practices are in compliance with the provisions of this Article, and are being followed.

(b) The compliance audit shall be conducted by at least one person knowledgeable in the requirements of the Article 7 section under review.

(c) The owner or operator shall prepare a written report of the compliance audit that includes the scope, methods used, questions asked to assess each program element along with findings and recommendations of the compliance audit. The written report shall also document the qualifications of those persons performing the compliance audit. The owner or operator shall make the report available to employees and employee representatives, in accordance with section 5110.13. The owner or operator shall respond in writing within 60 calendar days to any written employee or employee representative comments on the written audit report.

(d) The owner or operator shall follow the corrective action work process documented in subsections 5110.19(d) and (e) when developing the resolution and implementation of the compliance audit recommendations.

(e) The owner or operator shall retain the three (3) most recent compliance audit reports.

(f) As part of the compliance audit, the owner or operator shall consult with operators with expertise and experience in each process audited and shall document the findings and recommendations from these consultations in the audit report.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; Section 25531, Health and Safety Code; and Section 68.79, Part 68, Title 40, Code of Federal Regulations.

§ 5110.12. Incident Investigation.

(a) The owner or operator shall develop, implement, and maintain effective written procedures for promptly investigating and reporting any incident that results in or could reasonably have resulted in a major incident.

(b) The written procedures shall include an effective method for conducting a thorough root cause analysis.

(c) The owner or operator shall initiate the incident investigation as promptly as possible, but no later than 48 hours following an incident.

(d) An incident investigation team shall be established and shall, at a minimum, consist of a person with expertise and experience in the process involved, a person with expertise in the owner or operator's root cause analysis method, and a person with expertise in

overseeing the investigation and analysis. The owner or operator shall provide for employee participation in this process, pursuant to section 5110.13. If the incident involved the work of a contractor, an employee and employee representative of that contractor, if applicable, shall also be included on the investigation team.

(e) The incident investigation team shall implement the owner or operator's root cause analysis method to determine the underlying causes of the incident. The analysis shall include identification of management system causes, including organizational and safety culture causes.

(f) The team shall review the related DMRs that were performed pursuant to section 5110.8(e) and incorporate the applicable findings from these DMRs into the incident investigation.

(g) The incident investigation team shall develop recommendations to address the findings of the investigation. Recommendations shall include interim actions that will reduce the risk of a recurrence or similar incident until final actions can be implemented. For recommendations that result from the investigation of a major incident, an HCA shall be performed pursuant to section 5110.16. The owner or operator shall append the HCA report to the final investigation report.

(h) The owner or operator shall submit a written report for major incidents to the UPA within 90 calendar days of the incident, unless the owner or operator can demonstrate that additional time is needed due to the complexity of the investigation. In such cases the owner or operator shall prepare a status report within 90 calendar days of the incident and every 30 calendar days thereafter until the investigation is complete. The owner or operator shall submit a final report within five (5) months of the incident.

(i) The investigation report shall include:

(1) Date and time of the incident;

(2) Date and time the investigation began;

(3) A detailed description of the incident;

(4) The factors that caused or contributed to the incident, including direct causes, indirect causes and root causes, determined through the root cause analysis;

(5) A list of any DMR(s), PHA(s), HCA(s), and Safeguard Protection Analyses (SPA(s)) that were reviewed as part of the investigation;

(6) Interim recommendations to prevent a recurrence or similar incident;

(7) Recommendations for permanent corrective actions.

(j) The UPA shall make reports from investigation of major incidents available to the public by posting the final report on the Unified Program Agency's website within 30 calendar days of receipt.

(k) The report shall be provided to and, upon request, reviewed with employees whose job tasks are affected by the incident. Investigation reports shall also be made available to all operating, maintenance, and other personnel, including employees of contractors where applicable, whose work assignments are within the facility where the incident occurred or whose job tasks are relevant to the incident findings. Investigation reports shall be provided upon request to employee representatives, and where applicable, contractor employee representatives.

(l) The owner or operator shall follow the corrective action work process documented in subsections 5110.19(d) and (e), when resolving the investigation team's findings and recommendations, determining action items for implementation, tracking to completion, and documentation of closeout. The corrective action plan shall include review, and revalidation as necessary, of the appropriate portions of all relevant PHAs and DMRs.

(m) Incident investigation reports shall be retained for the life of the process unit.

(n) If the UPA chooses to perform an independent Process Safety Culture Assessment (PSCA), Incident Investigation, evaluation of the ARP management system or Human Factors Analysis after a major incident pursuant to section 5140.3, the owner or operator shall assist the UPA in conducting the independent analysis.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; Section 25531, Health and Safety Code; and Section 68.81, Part 68, Title 40, Code of Federal Regulations.

§ 5110.13. Employee Participation.

(a) In consultation with employees and employee representatives, the owner or operator shall develop, implement and maintain a written plan to effectively provide for employee participation in Accidental Release Prevention elements, as required by this Article. The plan shall include provisions that provide for the following:

(1) Effective participation by affected operating and maintenance employees and employee representatives, throughout all phases, in performing PHAs, DMRs, HCAs, MOCs, MOOCs, Process Safety Culture Assessments (PSCAs), Incident Investigations, SPAs, and PSSRs;

(2) Effective participation by affected operating and maintenance employees and employee representatives, throughout all phases of in the development, training, implementation and maintenance of the Accidental Release Prevention elements required by this Article.

(3) Access by employees and employee representatives to all documents or information developed or collected by the owner or operator pursuant to this Article, including information that might be subject to protection as a trade secret;

(b) An authorized collective bargaining agent may select employee(s) to participate in overall Accidental Release Prevention program development and implementation planning and for employee(s) to participate in each team-based activity pursuant to this Article.

(c) Where employees are not represented by an authorized collective bargaining agent, the owner or operator shall establish effective procedures in consultation with employees for the selection of employee representatives.

(d) Nothing in this subsection shall preclude the owner or operator from requiring an employee or employee representative to whom information is made available under subsection 5110.13(a)(3) to enter into a confidentiality agreement prohibiting him or her from disclosing such information.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; Section 25531, Health and Safety Code; and Section 68.83, Part 68, Title 40, Code of Federal Regulations.

§ 5110.14. Hot Work Permit.

(a) The owner or operator shall issue a hot work permit for hot work operations conducted on or near a covered process.

(b) The permit shall document that the fire prevention and protection requirements in section 5189 of Title 8 of CCR have been implemented prior to beginning the hot work operations; it shall indicate the date(s) and time(s) authorized for hot work; and identify the equipment or process on which hot work is to be performed. The permit shall be kept on file for one year.

Authority cited: Section 8585, Government Code; Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; Section 25531, Health and Safety Code; and Section 68.85, Part 68, Title 40, Code of Federal Regulations.

§ 5110.15. Contractors.

(a) Application. This section applies to contractors performing maintenance or repair, supply services, turnaround, major renovation, or specialty work on or adjacent to a covered process. It does not apply to contractors providing incidental services which do not influence process safety, such as janitorial work, food and drink services, laundry, delivery or other supply services.

(b) Stationary source owner or operator responsibilities.

(1) The owner or operator, when selecting a contractor, shall obtain and evaluate information regarding the contract owner or operator's safety performance and programs and shall require that its contractors and any subcontractors use a skilled and trained workforce pursuant to Health and Safety Code Section 25536.7.

(2) The owner or operator shall inform the contract owner or operator and shall ensure that the contract owner or operator has informed each of its employees of the work practices necessary to safely perform his or her jobs, including but not limited to: the potential hazards related to their jobs; applicable refinery safety rules; and in the applicable provisions of the stationary source's emergency action plan.

(3) The owner or operator shall explain to the contract owner or operator the applicable provisions of Article 8.

(4) The owner or operator shall develop and implement effective written procedures to ensure the safe entry, presence, and exit of the contract owner or operator and contract employees in process areas.

(5) The owner or operator shall periodically evaluate the performance of the contract owner or operator in fulfilling their obligations as specified in subsection (c).

(6) The owner or operator shall ensure and document that the requirements of this section are performed and completed by the contractor owner or operator.

(c) Contract owner or operator responsibilities.

(1) The contract owner or operator shall ensure that each contract employee is trained in the work practices necessary to safely perform his or her jobs, including but not limited to: the potential hazards related to their jobs; applicable refinery safety rules; and in the applicable provisions of the stationary source's emergency action plan, and shall meet the requirements of Health and Safety Code Section 25536.7.

(2) The contract owner or operator shall document that each contract employee has successfully completed the training required by this section by maintaining a record identifying:

(A) each employee who has received training;

(B) the date(s) and subject(s) of training each employee has received;

(C) and the means used to verify that the employee understood the training received.

(3) The contract owner or operator shall ensure that each contract employee follows the safety and health procedures of the stationary source.

(4) The contract owner or operator shall advise the owner or operator of any specific hazards presented by the contract owner or operator's work, or of any hazards found by the contract owner or operator while performing work for the stationary source.

(5) Nothing in this subsection shall preclude the stationary source owner or operator from requiring a contractor or an employee of a contractor to whom information is made available under this section to enter into a confidentiality agreement prohibiting him or her from disclosing such information, as set forth in CCR Title 8, Section 5194(i).

Authority cited: Section 8585, Government Code; and Sections 25531, 25536.7 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; Section 25531, Health and Safety Code; and Section 68.87, Part 68, Title 40, Code of Federal Regulations.

§ 5110.16. Hierarchy of Hazard Control Analysis.

(a) The owner or operator shall conduct an HCA for all existing processes. The HCA for existing processes shall be performed in accordance with the following schedule, and may be performed in conjunction with the PHA schedule:

(1) No less than 50% of existing processes within three (3) years of the effective date of this Article;

(2) Remaining processes within five (5) years of the effective date of this Article.

(b) The owner or operator shall also conduct an HCA in a timely manner in the following instances:

(1) For all PHA recommendations for each scenario that identifies the potential for a major incident;

(2) Whenever a major change is proposed at a facility, the owner or operator shall conduct an HCA as part of a Management of Change review required by section 5110.9;

(3) When a major incident occurs, the owner or operator shall complete an HCA on the recommendations of the incident investigation report required by section 5110.12; and

(4) During the design and review of new processes, new process units, and new facilities, and their related process equipment. An HCA report prepared for this purpose shall be provided to the UPA. The UPA shall make these HCA reports available to the public by posting them on the UPA's website within 30 calendar days, with appropriate protections for trade secret information.

(c) All HCAs shall be updated consistent with the requirements of this section at least once every five years, in conjunction with the PHA schedule.

(d) An HCA shall be performed, updated, and documented by a team with expertise in engineering and process operations and the team shall include at least one operating employee who currently works on the process and has experience and knowledge specific to the process being evaluated. The team shall also include one member knowledgeable in the HCA method being used. The owner or operator shall provide for employee participation in this process, pursuant to section 5110.13. As necessary, the team shall consult with individuals with expertise in damage mechanisms, process chemistry, and control systems.

(e) The HCA team shall:

(1) Include all risk-relevant data for each process or recommendation, including incident investigation reports pursuant to section 5110.12;

(2) Identify, characterize and prioritize each process safety hazard.

(3) Identify, analyze, and document all inherent safety measures and safeguards (or where appropriate, combinations of measures and safeguards) in an iterative manner to reduce each hazard to the greatest extent feasible. Identify, analyze, and document relevant, publicly available information on inherent safety measures and safeguards. This information shall include inherent safety measures and safeguards that have been: (A) achieved in practice by for the petroleum refining industry and related industrial sectors; or, (B) required or recommended for the petroleum refining industry, and related industrial sectors, by a federal or state agency, or local California agency, in a regulation or report.

(f) For each process safety hazard identified using the analysis required by subdivision (e), the team shall develop written recommendations to eliminate hazards to the greatest extent feasible using first order inherent safety measures. The team shall develop written recommendations to reduce any remaining hazards to the greatest extent feasible using second order inherent safety measures. If necessary, the team shall also develop written recommendations to address any remaining risks in the following sequence and priority order:

(1) Effectively reduce remaining risks using passive safeguards;

(2) Effectively reduce remaining risks using active safeguards;

(3) Effectively reduce remaining risks using procedural safeguards.

(g) The HCA team shall complete an HCA report within 90 calendar days following development of the recommendations. The report shall include:

(1) A description of the composition, experience, and expertise of the members of the team that performed the HCA;

(2) A description of the methodology used by the team;

(3) A description of each process safety hazard analyzed by the team, pursuant to subdivision (e)(2) above;

(4) A description of the inherent safety measure(s) and safeguards analyzed by the team, pursuant to subdivision (e)(3) above; and

(5) The rationale for the inherent safety measures and safeguards recommended by the team for each process safety hazard, pursuant to subsection (f).

(h) The owner or operator shall follow the corrective action work process documented in subsections 5110.19(d) and (e) when resolving the HCA team's finding and recommendations determining corrective action for implementation, tracking to completion, and documentation of closeout.

(i) The owner or operator shall retain all HCA reports for the life of each process.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; and Sections 25531, 25531.2, 25534, 25535 and 25535.1, Health and Safety Code.

§ 5110.17. Process Safety Culture Assessment.

(a) The owner or operator shall develop, implement and maintain an effective Process Safety Culture Assessment (PSCA) program.

(b) The owner or operator shall conduct an effective PSCA and produce a written report and action plan within eighteen (18) months following the effective date of this Article and at least once, every five (5) years thereafter. If the owner or operator has conducted and documented a PSCA up to eighteen (18) months prior to the effective date of this section, and that PSCA includes the elements identified in this subsection, that PSCA may be used to satisfy the owner or operator's obligation to complete an initial PSCA under this subsection. The PSCA shall include an evaluation of the effectiveness of the following elements of process safety leadership:

(1) The owner or operator's hazard reporting program;

(2) The owner or operator's response to reports of hazards;

(3) The owner or operator's procedures to ensure that incentive programs do not discourage reporting of hazards;

(4) The owner or operator's procedures to ensure that process safety is prioritized during upset or emergency conditions; and

(5) Management commitment and leadership.

(c) The PSCA shall be conducted or overseen by a team that includes at least one person knowledgeable in refinery operations and at least one employee representative. The

owner or operator shall provide for employee participation in the development and implementation of the PSCA, report, and recommendations, pursuant to section 5110.13. The team shall consult with at least one employee or another individual with expertise in assessing process safety culture in the petroleum refining industry.

(d) The PSCA team shall develop a written report within 90 calendar days of completion of the assessment. The report shall include:

(1) The method(s) used to assess the process safety culture;

(2) The conclusions of the process safety culture assessment;

(3) The rationale for the conclusions; and

(4) The recommendations to address the findings from the PSCA.

(e) The owner or operator in consultation with the PSCA team shall develop corrective actions based on the PSCA Team recommendations and implement the corrective actions within twenty-four (24) months of the completion of the report.

(f) The PSCA team shall conduct a written interim assessment of the implementation and effectiveness of each PSCA corrective action within three (3) years following the completion of the PSCA report. If a corrective action is found to be ineffective, the owner or operator shall implement changes necessary to ensure effectiveness in a timely manner not to exceed six months.

(g) The stationary source manager, or his or her designee, shall serve as signatory to all process safety culture assessment reports and corrective action plans.

(h) The PSCA report and action plan and the three year interim assessment shall be communicated and made available to employees, their representatives and participating contractors within 60 calendar days of the completion of the report.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; and Sections 25531, 25531.2, 25534, 25535 and 25535.1, Health and Safety Code.

§ 5110.18. Human Factors Program.

(a) The owner or operator shall develop, implement and maintain an effective written Human Factors Program within eighteen (18) months of the effective date of this Article.

(b) The owner or operator shall include a written analysis of human factors where relevant in the design phase of a major change, incident investigations, PHAs, MOOCs, and HCAs. The analysis shall include a description of selected methodologies and criteria for their use.

(c) The human factors analysis shall use an effective method of evaluating the following: staffing levels; the complexity of tasks; the length of time needed to complete tasks; the level of training, experience, and competency of employees; the human-machine and human-system interface; the physical challenges of the work environment in which the task is performed; employee fatigue, including contractor employees and other effects of shiftwork and overtime; communication systems; and the understandability and clarity of operating and maintenance procedures. The human factors analysis of process controls shall include the following areas:

(1) Error proof mechanisms;

(2) Automatic Alerts; and

(3) Automatic System Shutdowns.

(d) The owner or operator shall include an analysis of human factors in new and revised operating and maintenance procedures.

(e) The owner or operator shall develop a schedule for revising existing operating and maintenance procedures based on a human factors analysis. The owner or operator shall complete no less than fifty (50) percent of assessments and revisions within three (3) years following the effective date of this Article and one hundred (100) percent within five (5) years.

(f) The owner or operator shall train all of their employees that have process and process equipment responsibilities on the Human Factors Program.

(g) The owner or operator shall provide for employee participation in the development and implementation of the Human Factors Program, pursuant to section 5110.13.

(h) The owner or operator shall make available and provide on request a copy of the written Human Factors Program to employees and their representatives, and to affected contractors, contractor employees, and contractor representatives.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; and Sections 25531, 25531.2, 25534, 25535 and 25535.1, Health and Safety Code.

§ 5110.19. Accidental Release Prevention Program Management System.

(a) The owner or operator shall develop and implement an effective written Accidental Release Prevention Program (ARP) Management System, which shall be reviewed and updated every three (3) years. The owner or operator shall designate the stationary source manager as the person with authority and responsibility for compliance with this section, and shall maintain process safety goals that support continuous improvement.

(b) As part of the ARP Management System, the owner or operator shall develop and maintain written ARP policies and procedures, as described below:

(1) Job descriptions of roles and responsibilities under each section of this Article;

(2) An organizational chart of management positions with responsibilities for each section of this Article;

(3) Written procedures for ensuring the effective communication of safety, operations, and maintenance information among and across process and maintenance personnel, contractors, support personnel, supervisors and senior management;

(4) Policies and procedures to ensure that the findings, recommendations and corrective action of all sections in this Article and the ARP Management System are communicated effectively to employees and employee representatives; and

(5) Policies and procedures to effectively provide for employee participation in all applicable sections in this Article as specified in section 5110.13.

(c) As part of the ARP Management System, the owner or operator shall track and document all changes to program elements under this Article.

(d) As part of the ARP Management System, the owner or operator shall develop and document a corrective action work process to address findings and recommendations resulting from program elements. The corrective action work plan for PSCAs shall be governed by section 5110.17. The corrective action work process shall include the requirements in subsection (e).

(e) The owner or operator shall comply with the following standards for findings and recommendations for the PHA, DMR, HCA, Incident Investigation, compliance audit and SPA:

(1) All findings and recommendations must be provided by the team to the owner or operator at the earliest opportunity, but no later than 14 calendar days after recommendation and findings are complete.

(2) The owner or operator may reject a team recommendation if the owner or operator can demonstrate in writing that one of the following applies:

(A) The analysis upon which the recommendation is based contains material factual errors;

(B) The recommendation is not relevant to process safety; or

(C) The recommendation is infeasible; however, a determination of infeasibility shall not be based solely on cost.

(3) The owner or operator may change a team recommendation if the owner or operator can demonstrate in writing that an alternative inherent safety measure would provide an equivalent or higher order of inherent safety, or, for a safeguard

recommendation, an alternative safeguard would provide an equally or more effective level of protection.

(4) The owner or operator shall document where any of the conditions in subsection (e)(2) or (e)(3) is applied for the purpose of changing or rejecting a team recommendation. Each recommendation that is changed or rejected by the owner or operator shall be communicated to onsite team members for comment and made available to offsite team members for comment.

(5) The owner or operator shall document any written comments from all team members on any rejected or changed findings and recommendations.

(6) The owner or operator shall document a final decision for each recommendation and shall communicate it to onsite team members and make it available to offsite team members.

(7) The owner or operator shall develop and document corrective actions to implement each accepted recommendation, including documentation of a completion date and assignment of responsibility for completion of each corrective action. All target dates shall be consistent with the requirements of subsections (10) through (13) below for completion of corrective actions.

(8) If the owner or operator determines that a corrective action requires revalidation or update of any applicable PHA, HCA, DMR, or SPA, these revalidations or updates shall be subject to the corrective action requirements in subsections (9) and (11) through (12) below. The owner or operator shall promptly append any revalidated or updated PHA, DMR, HCA, or SPA, to the applicable report.

(9) The owner or operator shall promptly complete all corrective actions and shall comply with the completion dates required by this subsection. The owner or operator shall conduct a MOC pursuant to section 5110.9 for any proposed change to a completion date. The owner or operator shall make all completion dates available, upon request, to all affected operation and maintenance employees and employee representatives.

(10) Notwithstanding sections (11) through (13) below, corrective actions addressing process safety hazards shall be prioritized and promptly completed, either through permanent corrections or interim safeguards sufficient to prevent the potential for a major incident, pending permanent corrections.

(11) Each corrective action except as specified under subsection (10) that does not require a process shutdown shall be completed within two and half years after the completion of the analysis or review unless the owner or operator demonstrates in writing that it is not feasible to do so.

(12) Each corrective action from a compliance audit shall be completed within one and half years after the completion of the analysis or review unless the owner or operator demonstrates in writing that it is not feasible to do so. Each corrective

action from an incident investigation shall be completed within one and half years after completion of the investigation unless the owner or operator demonstrates in writing that it is infeasible to do so.

(13) Each corrective action requiring a process shutdown shall be completed during the first regularly scheduled turnaround of the applicable process, subsequent to completion of the PHA, SPA, DMR, HCA, MOC, compliance audit or incident investigation, unless the owner or operator demonstrates in writing it is not feasible to do so.

(14) Where a corrective action cannot be implemented within the times described in (10) through (13) above, the owner or operator shall ensure that interim safeguards are sufficient to prevent the potential for a major incident, pending permanent corrections. The owner or operator shall document all corrective actions delayed beyond the timelines established in this subsection. The documentation shall include:

(A) The rationale for deferring the corrective action(s);

(B) The documentation required under the MOC process;

(C) A timeline describing when the corrective action(s) will be implemented; and

(D) An effective plan to make available the rationale and revised timeline to all affected employees and their representatives.

(15) The owner or operator shall track each corrective action item to completion and shall append the documentation of completion to the applicable PHA, DMR, HCA, SPA, compliance audit, or incident investigation report.

(f) Within 90 calendar days of the effective date of this Article, the owner or operator in consultation with employees and employee representatives, shall develop and implement the following:

(1) Effective Stop Work procedures that ensure:

(A) The authority of all employees, including employees of contractors, to refuse to perform a task where doing so could reasonably result in death or serious physical harm;

(B) The authority of all employees, including employees of contractors, to recommend to the operator in charge of a unit that an operation or process be partially or completely shut-down, based on a process safety hazard; and,

(C) The authority of the qualified operator in charge of a unit to partially or completely shut-down an operation or process, based on a process safety hazard.

(2) Effective procedures to ensure the right of all employees, including employees of contractors, to anonymously report hazards. The owner or operator shall respond in writing within 30 calendar days to written hazard reports submitted by employees, employee representatives, contractors, employees of contractors and contractor employee representatives. The owner or operator shall prioritize and promptly respond to and correct hazards that present the potential for death or serious physical harm.

(g) Within 90 calendar days of the effective date of this section, the owner or operator shall develop a system to document and enable employees to report information pursuant to subsections (f)(1) and (f)(2).

(h) Process Safety Performance Indicators

(1) Common Process Safety Performance Indicators: Starting one calendar year after the effective date of this Article, the owner or operator shall report indicators listed in subdivision (A) through (E) below to Agency and the UPA every year on June 30 for the period from January 1 to December 31 of the prior year. Agency shall make these indicators public by posting them on their web site.

(A) Past due inspections for piping and pressure vessels:

i Overdue inspection for piping and pressure vessels shall be reported. This information will not include relief devices, instrumentation, instrument air receivers, boilers, furnaces, atmospheric tanks, or rotating equipment.

ii Pressure vessels include but are not limited to: heat exchangers, columns, spheres, bullets as defined by CA Safety Order and U-stamped (or treated as such). The scope of the inspections for this reporting include external visual, condition monitoring location (CML) and nondestructive examination (NDE), and internal visual. Pressure vessel is defined by Title 8, Division 1, Chapter 4, Subchapter 1 Unfired Pressure vessel safety orders.

iii Process Piping and piping components excluding utility piping, the scope of the inspections shall include external visual, CML/NDE and internal visual as appropriate.

iv Past due is defined as overdue by the requirements listed in California Code of Regulations, Title 8, section 6857, API 510 and API 570. Deferral/extension when used shall follow the requirements contained within the above code and recommended practices.

v Inspections shall be defined by circuits rather than points. A circuit shall be defined by one of the following: isometrics, by process stream and piping class, or piece of equipment, such as a pressure vessel. When reporting past due inspections to Agency and the UPA, the owner or operator shall include the total number of circuits at the stationary source and the total number of annual planned circuit inspections for that year to provide context regarding the number of circuits/equipment defined by the inspection program at the facility.

(B) Past due PHA corrective actions and seismic corrective actions shall be reported. If a stationary source receives an extension approved by the UPA, the new approved due date shall apply.

(C) Past due Incident Investigation corrective actions shall be reported for major incidents. All major incidents that occur after the effective date of this Article are subject to this requirement.

(D) Major incidents: The number of major incidents that have occurred since the effective date of this Article.

(E) The number of temporary piping and equipment repairs that are installed on hydrocarbon and high energy utility systems that are past their date of replacement with a permanent repair and the total number of temporary piping and equipment repairs installed on hydrocarbon and high energy utility systems. The owner or operator shall document, but not report, the date the temporary piping repair was installed, and the date for the permanent repair is to be complete.

(F) Past due item is an item that is not completed by the end of the month during the month that is due. Each month an item that is past due shall be counted overdue. If the item is continued from the prior month then it is also counted as a repeat item. The repeat row is a subset of the overdue items. The table below shall be used for each of the indicators listed above.

Month	*Overdue*	*Repeat*
January		
February		
March		
April		
May		
June		

July		
August		
September		
October		
November		
December		
Annual Total		

(2) Individual Program 4 Process Safety Performance Indicators: No later than six months after the effective date of this Article, each stationary source shall develop a list of site-specific indicators, consisting of activities and other events that it shall measure in order to evaluate the performance of its process safety systems for the purpose of continuous improvement. The owner or operator shall prepare an annual written report by June 30 of each year containing a compilation of these site specific indicators for the previous calendar year. The stationary source manager or designee shall certify annually that the report is current and accurate.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; and Sections 25531, 25531.2, 25534, 25535 and 25535.1, Health and Safety Code.

§ 5110.20. Access to Documents and Information.

The owner or operator shall provide documents or information developed or collected pursuant to this Article to the UPA upon request.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; and Sections 25531, 25531.2, 25534, 25534.5, 25535 and 25535.1, Health and Safety Code.

Article 8. Emergency Response Program

§ 5120.1. Emergency Response Applicability.

(a) Except as provided in section (b), the owner or operator of a stationary source with Program 2 and Program 3 processes shall comply with the requirements of Section 5120.2. Owners or operators of Program 4 stationary sources shall comply with the requirements of section 5120.2.

(b) The owner or operator of a stationary source whose employees will not respond to accidental releases of regulated substances need not comply with Section 5120.2 provided that they meet the following:

(1) For stationary sources with any regulated toxic substance held in a process above the threshold quantity, the stationary source is included in the community emergency response plan developed under Section 11003 of Title 42 of the United States Code (USC), is included in the city or county Hazardous Materials Area plans and/or is included in the business plan program, pursuant to Section 25507 of the Health & Safety Code. The owner or operator must document that response actions have been coordinated with the local fire department and hazardous materials response agencies;

(2) For stationary sources with only regulated flammable substances held in a process above the threshold quantity, the owner or operator must document that response actions have been coordinated with the local fire department and hazardous materials response agencies; and,

(3) Appropriate mechanisms and written procedures are in place to notify emergency responders when there is a need for a response.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; Section 25531, Health and Safety Code; and Section 68.90, Part 68, Title 40, Code of Federal Regulations.

§ 5120.2. Emergency Response Program.

(a) The owner or operator shall develop and implement an emergency response program for the purpose of protecting public health and the environment. The emergency response program shall include the following elements:

(1) An emergency response plan, which shall be maintained at the stationary source and contain at least the following elements:

(A) Procedures for informing and interfacing with the public and local emergency response agencies about accidental releases, emergency planning, and emergency response;

(B) Documentation of proper first-aid and emergency medical treatment necessary to treat accidental human exposures; and,

(C) Procedures and measures for emergency response after an accidental release of a regulated substance;

(2) Procedures for the use of emergency response equipment and for its inspection, testing, and maintenance;

(3) Training for all employees in relevant procedures and relevant aspects of the Incident Command System; and,

(4) Procedures to review and update, as appropriate, the emergency response plan to reflect changes at the stationary source and ensure that employees are informed of changes.

(b) A written plan that complies with the contingency plan format developed pursuant to Section 25503.4 of HSC and that, among other matters, includes the elements provided in section (a), shall satisfy the requirements of this section if the owner or operator also complies with section (c). The contingency plan format shall be provided by Agency upon request.

(c) The emergency response plan developed under section (a)(1) shall be coordinated with the community emergency response plan developed under Section 11003 of Title 42 of USC. Upon request of the local emergency planning committee or emergency response officials, the owner or operator shall promptly provide to the local emergency response officials information necessary for developing and implementing the community emergency response plan.

(d) The owner or operator is not required to meet the business plan requirements if the emergency response plan developed under this section is consistent with the business plan requirements pursuant to Sections 5030.9 and 5030.10 of 19 CCR, Division 5, Chapter 1. This does not exempt the owner or operator from requirements which relate to the annual inventory or emergency response planning for hazardous materials which are not regulated substances.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; Sections 25531 and 25537.5, Health and Safety Code; and Section 68.95, Part 68, Title 40, Code of Federal Regulations.

Article 9. Regulated Substances for Accidental Release Prevention

§ 5130.1. Purpose.

This article lists regulated substances pursuant to Section 5130.6 (Tables 1, 2, or 3), identifies specific threshold quantities, and establishes the requirements for petitioning to add, delete, or change the threshold for regulated substances.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Sections 25532(i), 25532(l), 25532(m), 25543.1 and 25543.3, Health and Safety Code; and Section 68.100, Part 68, Title 40, Code of Federal Regulations.

§ 5130.2. Threshold Determination.

(a) A threshold quantity of a regulated substance is present at a stationary source if the total quantity of a regulated substance contained in a process exceeds the threshold listed in Section 5130.6.

(b) For the purpose of determining whether more than a threshold quantity of a regulated substance is present at the stationary source, the following apply:

(1) Concentrations of a regulated toxic substance in a mixture:

(A) A mixture of less than one percent by weight of a regulated toxic substance need not be considered when determining whether more than a threshold quantity is present at the stationary source. A mixture containing a regulated toxic substance is regulated if the concentration of the toxic substance present in the mixture is one percent or greater by weight. The owner or operator of a stationary source shall only consider the weight of the regulated substance in the mixture, not the entire weight of the mixture.

(B) The owner or operator of a stationary source, when determining whether more than a threshold quantity of a regulated toxic substance in a mixture (one percent or greater by weight, pursuant to (A)) is present at the stationary source, need not consider portions of the process which can be demonstrated to have a partial pressure of the regulated substance in the mixture (solution), under the handling or storage conditions, which is less than 10 millimeters of mercury (mm Hg). The owner or operator of the stationary source shall document any exempted portions of processes where the partial pressure measurements or estimates are less than 10 mm Hg.

(C) The exemption regarding 10 mm Hg of partial pressure in (B) does not apply to:

i Regulated substances which are solids as noted in Section 5130.6, Table 3;

ii Those regulated substances that failed the evaluation pursuant to Section 25532(i)(2) of HSC as noted in Section 5130.5, Table 3; or,

iii Oleum, toluene 2,4-diisocyanate, toluene 2,6-diisocyanate and toluene diisocyanate (unspecified isomer) as noted in Section 5130.6.

(2) Concentrations of a regulated flammable substance in a mixture. A mixture of less than one percent by weight of a regulated flammable substance need not be considered when determining whether more than a threshold quantity is present at the stationary source. Except as provided in Sections (b)(2)(A) and (2)(B) of this section, if the concentration of the substance in the mixture is one percent or

greater by weight of the mixture, then, for the purpose of determining whether a threshold quantity is present at the stationary source, the entire weight of the mixture shall be treated as the regulated substance unless the owner or operator can demonstrate that the mixture itself does not have a NFPA flammability hazard rating of 4. The demonstration shall be in accordance with the definition of flammability hazard rating 4 in the NFPA 704, Standard System for the Identification of the Hazards of Materials for Emergency Response, NFPA, Quincy, MA, 1996. (Available from the NFPA, 1 Batterymarch Park, Quincy, MA 02269-9101. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552 (a) and 1 CFR part 51. Copies may be inspected at the Environmental Protection Agency Air Docket (6102), Attn: Docket No. A-96-08, Waterside Mall, 401 M. St. SW., Washington D.C.; or at the Office of Federal Register at 800 North Capitol St., NW, Suite 700, Washington, D.C.) Boiling point and flash point shall be defined and determined in accordance with NFPA 30, Flammable and Combustible Liquids Code, NFPA, Quincy, MA, 1996. (Available from the NFPA, 1 Batterymarch Park, Quincy, MA 02269-9101. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552 (a) and 1 CFR part 51. Copies may be inspected at the Environmental Protection Agency Air Docket (6102), Attn: Docket No. A-96-08, Waterside Mall, 401 M. St. SW., Washington D.C.; or at the Office of Federal Register at 800 North Capitol St., NW, Suite 700, Washington, D.C.) The owner or operator shall document the NFPA flammability hazard rating.

(A) Gasoline. Regulated substances in gasoline, when in distribution or related storage for use as fuel for internal combustion engines, need not be considered when determining whether more than a threshold quantity is present at a stationary source.

(B) Naturally occurring hydrocarbon mixtures. Prior to entry into a natural gas processing plant or a petroleum refining process unit, regulated substances in naturally occurring hydrocarbon mixtures need not be considered when determining whether more than a threshold quantity is present at a stationary source. Naturally occurring hydrocarbon mixtures include any combination of the following: condensate, crude oil, field gas, and produced water, each as defined in Section 5050.3.

(3) Articles. Regulated substances contained in articles need not be considered when determining whether more than a threshold quantity is present at the stationary source.

(4) Uses. Regulated substances, when in use for the following purposes, need not be included in determining whether more than a threshold quantity is present at the stationary source:

(A) Use as a structural component of the stationary source;

(B) Use of products for routine janitorial maintenance;

(C) Use by employees of foods, drugs, cosmetics, or other personal items containing the regulated substance; and,

(D) Use of regulated substances present in process water or non-contact cooling water as drawn from the environment or municipal sources, or use of regulated substances present in air used either as compressed air or as part of combustion.

(5) Activities in laboratories. If a regulated substance is manufactured, processed, or used in a laboratory at a stationary source under the supervision of a technically qualified individual as defined in Section 720.3(ee) of Chapter 1 of Title 40 of CFR, the quantity of the substance need not be considered in determining whether a threshold quantity is present. This exemption does not apply to:

(A) Specialty chemical production;

(B) Manufacture, processing, or use of substances in pilot plant scale operations; and,

(C) Activities conducted outside the laboratory.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Sections 25532(l), 25532(n) and 25543.3, Health and Safety Code; and Section 68.115, Part 68, Title 40, Code of Federal Regulations.

§ 5130.3. (Reserved).

§ 5130.4. Exemptions.

Agricultural nutrients. Ammonia used as an agricultural nutrient, when held by farmers, is exempt from all provisions of this chapter.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.125, Part 68, Title 40, Code of Federal Regulations.

§ 5130.5. Exclusion.

Flammable substances used as fuel or held for sale as fuel at retail facilities. A flammable substance listed in Section 5130.6, Table 2, is nevertheless excluded from all provisions of this chapter when the substance is used as a fuel or held for sale as a fuel at a retail facility.

Authority cited: Sections 25531, 25533 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.126, Part 68, Title 40, Code of Federal Regulations.

§ 5130.6. List of Substances.

Regulated toxic and flammable substances under Section 112(r) of the federal CAA are the substances listed in Tables 1 and 2. Table 3 lists those regulated substances pursuant to Section 25532(i)(2) of HSC. Threshold quantities for listed toxic and flammable substances are specified in the tables.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Sections 25532(i)(2) and 25543.3, Health and Safety Code; and Section 68.130, Part 68, Title 40, Code of Federal Regulations.

Table 1 Federal Regulated Substances List and Threshold Quantities for Accidental Release Prevention

Chemical Name	*Also on Table 3* [f]	*CAS Number*	*Threshold quantity (lbs)*	*Basis for listing*
Acrolein [2-Propenal]	yes	107-02-8	5,000	b
Acrylonitrile [2-Propenenitrile]	yes	107-13-1	20,000	b
Acrylyl chloride [2-Propenoyl chloride]	yes	814-68-6	5,000	b
Allyl alcohol [2-Propen-l-ol]	yes	107-18-6	15,000	b
Allylamine [2-Propen-l-amine]	yes	107-11-9	10,000	b
Ammonia (anhydrous)	yes	7664-41-7	10,000	a,b
Ammonia (conc 20% or greater)	yes	7664-41-7	20,000	a,b
Arsenous trichloride	yes	7784-34-1	15,000	b
Arsine	yes	7784-42-1	1,000	b
Boron trichloride [Borane, trichloro-]	yes	10294-34-5	5,000	b
Boron trifluoride [Borane, trifluoro-]	yes	7637-07-2	5,000	b
Boron trifluoride compound with methyl ether (1:1) [Boron, trifluoro [oxybis[metane]]]-, T-4-	yes	353-42-4	15,000	b
Bromine	yes	7726-95-6	10,000	a,b
Carbon disulfide	yes	75-15-0	20,000	b
Chlorine	yes	7782-50-5	2,500	a,b
Chlorine dioxide [Chlorine oxide (ClO2)]	no	10049-04-4	1,000	c

Chloroform [Methane, trichloro-]	yes	67-66-3	20,000	b
Chloromethyl ether [Methane, oxybis[chloro-]]	yes	542-88-1	1,000	b
Chloromethyl methyl ether [Methane, chloromethoxy-]	yes	107-30-2	5,000	b
Crotonaldehyde [2-Butenal]	yes	4170-30-3	20,000	b
Crotonaldehyde, (E)- [2-Butenal, (E)-]	yes	123-73-9	20,000	b
Cyanogen chloride	no	506-77-4	10,000	c
Cyclohexylamine [Cyclohexanamine]	yes	108-91-8	15,000	b
Diborane	yes	19287-45-7	2,500	b
Dimethyldichlorosilane [Silane, dichlorodimethyl-]	yes	75-78-5	5,000	b
1,1-Dimethylhydrazine [Hydrazine,1,1-dimethyl-]	yes	57-14-7	15,000	b
Epichlorohydrin [Oxirane, (chloromethyl)-]	yes	106-89-8	20,000	b
Ethylenediamine [1,2-Ethanediamine]	yes	107-15-3	20,000	b
Ethyleneimine [Aziridine]	yes	151-56-4	10,000	b
Ethyleneoxide [Oxirane]	yes	75-21-8	10,000	a,b
Fluorine	yes	7782-41-4	1,000	b
Formaldehyde (solution)	yes	50-00-0	15,000	b
Furan	yes	110-00-9	5,000	b
Hydrazine	yes	302-01-2	15,000	b
Hydrochloric acid (conc 37% or greater)	no	7647-01-0	15,000	d

Hydrocyanic acid	yes	74-90-8	2,500	a,b
Hydrogen chloride (anhydrous) [Hydrochloric acid]	yes	7647-01-0	5,000	a
Hydrogen fluoride/Hydrofluoric acid (conc 50% or greater) [Hydrofluoric acid]	yes	7664-39-3	1,000	a,b
Hydrogen selenide	yes	7783-07-5	500	b
Hydrogen sulfide	yes	7783-06-4	10,000	a,b
Iron, pentacarbonyl-[Iron carbonyl (Fe(CO)5),(TB-5-11)-]	yes	13463-40-6	2,500	b
Isobutyronitrile [Propanenitrile, 2-methyl-]	yes	78-82-0	20,000	b
Isopropyl chloroformate [Carbonochloridic acid, 1-methylethyl ester]	yes	108-23-6	15,000	b
Methacrylonitrile [2-Propenenitrile, 2-methyl-]	yes	126-98-7	10,000	b
Methyl chloride [Methane, chloro-]	no	74-87-3	10,000	a
Methyl chloroformate [Carbonochloridic acid, methylester]	yes	79-22-1	5,000	b
Methyl hydrazine [Hydrazine, methyl-]	yes	60-34-4	15,000	b
Methyl isocyanate [Methane, isocyanato-]	yes	624-83-9	10,000	a,b
Methyl mercaptan [Methanethiol]	yes	74-93-1	10,000	b
Methyl thiocyanate [Thiocyanic acid, methyl ester]	yes	556-64-9	20,000	b

Methyltrichlorosilane [Silane, trichloromethyl-]	yes	75-79-6	5,000	b
Nickel carbonyl	yes	13463-39-3	1,000	b
Nitric acid (conc 80% or greater)	yes	7697-37-2	15,000	b
Nitric oxide [Nitrogen oxide (NO)]	yes	10102-43-9	10,000	b
Oleum (Fuming Sulfuric acid) [Sulfuric acid, mixture with sulfur trioxide] [1]	no	8014-95-7	10,000	e
Peracetic acid [Ethaneperoxoic acid]	yes	79-21-0	10,000	b
Perchloromethylmercaptan [Methanesulfenyl chloride, trichloro-]	yes	594-42-3	10,000	b
Phosgene [Carbonic dichloride]	yes	75-44-5	500	a,b
Phosphine	yes	7803-51-2	5,000	b
Phosphorus oxychloride [Phosphoryl chloride]	yes	10025-87-3	5,000	b
Phosphorus trichloride [Phosphorous trichloride]	yes	7719-12-2	15,000	b
Piperidine	yes	110-89-4	15,000	b
Propionitrile [Propanenitrile]	yes	107-12-0	10,000	b
Propyl chloroformate [Carbonochloridic acid, propylester]	yes	109-61-5	15,000	b
Propyleneimine [Aziridine,2-methyl-]	yes	75-55-8	10,000	b
Propylene oxide [Oxirane, methyl-]	yes	75-56-9	10,000	b

Sulfur dioxide (anhydrous)	yes	7446-09-5	5,000	a,b
Sulfur tetrafluoride [Sulfur fluoride (SF4), (T-4)-]	yes	7783-60-0	2,500	b
Sulfur trioxide	yes	7446-11-9	10,000	a,b
Tetramethyllead [Plumbane, tetramethyl-]	yes	75-74-1	10,000	b
Tetranitromethane [Methane, tetranitro-]	yes	509-14-8	10,000	b
Titanium tetrachloride [Titanium chloride (TiCl4) (T-4)-]	yes	7550-45-0	2,500	b
Toluene 2,4-diisocyanate [Benzene, 2,4-diisocyanato-1-methyl-] [1]	yes	584-84-9	10,000	a
Toluene 2,6-diisocyanate [Benzene, 1,3-diisocyanato-2-methyl-] [1]	yes	91-08-7	10,000	a
Toluene diisocyanate (unspecified isomer) [Benzene, 1,3-diisocyanatomethyl-] [1]	no	26471-62-5	10,000	a
Trimethylchlorosilane [Silane, chlorotrimethyl-]	yes	75-77-4	10,000	b
Vinyl acetate monomer [Acetic acid ethenyl ester]	yes	108-05-4	15,000	b

Note -- Basis for Listing:

a Mandated for listing by Congress.

b On EHS list, vapor pressure 10 mmHg or greater.

c Toxic gas.

d Toxicity of hydrogen chloride, potential to release hydrogen chloride, and history of accidents.

e Toxicity of sulfur trioxide and sulfuric acid, potential to release sulfur trioxide, and history of accidents.

f This column identifies substances which may appear on Table 3. Table 3 may not have concentration limitations.

[1] The exemption in Section 5130.2(b)(1)(B) regarding portions of a process where this regulated substance is handled at partial pressures below 10 mm Hg does not apply to this substance.

Table 2 Federal Regulated Flammable Substances List and Threshold Quantities for Accidental Release Prevention

Chemical Name	*CAS Number*	*Threshold quantity (lbs)*	*Basis for listing*
Acetaldehyde	75-07-0	10,000	g
Acetylene [Ethyne]	74-86-2	10,000	f
Bromotrifluorethylene [Ethene, bromotrifluoro-]	598-73-2	10,000	f
1,3-Butadiene	106-99-0	10,000	f
Butane	106-97-8	10,000	f
1-Butene	106-98-9	10,000	f
2-Butene	107-01-7	10,000	f
Butene	25167-67-3	10,000	f
2-Butene-cis	590-18-1	10,000	f
2-Butene-trans [2-Butene, (E)]	624-64-6	10,000	f
Carbon oxysulfide [Carbon oxide sulfide (COS)]	463-58-1	10,000	f
Chlorine monoxide [Chlorine oxide]	7791-21-1	10,000	f
2-Chloropropylene [1-Propene, 2-chloro-]	557-98-2	10,000	g
1-Chloropropylene [1-Propene, 1-chloro-]	590-21-6	10,000	g
Cyanogen [Ethanedinitrile]	460-19-5	10,000	f
Cyclopropane	75-19-4	10,000	f
Dichlorosilane [Silane, dichloro-]	4109-96-0	10,000	f
Difluoroethane [Ethane,1,1-difluoro-]	75-37-6	10,000	f
Dimethylamine [Methanamine, N-methyl-]	124-40-3	10,000	f

2,2-Dimethylpropane [Propane, 2,2-dimethyl-]	463-82-1	10,000	f
Ethane	74-84-0	10,000	f
Ethyl acetylene [1-Butyne]	107-00-6	10,000	f
Ethylamine [Ethanamine]	75-04-7	10,000	f
Ethyl chloride [Ethane, chloro-]	75-00-3	10,000	f
Ethylene [Ethene]	74-85-1	10,000	f
Ethyl ether [Ethane,1,1′-oxybis-]	60-29-7	10,000	g
Ethyl mercaptan [Ethanethiol]	75-08-1	10,000	g
Ethyl nitrite [Nitrous acid, ethyl ester]	109-95-5	10,000	f
Hydrogen	1333-74-0	10,000	f
Isobutane [Propane, 2-methyl]	75-28-5	10,000	f
Isopentane [Butane, 2-methyl-]	78-78-4	10,000	g
Isoprene [1,3-Butadinene, 2-methyl-]	78-79-5	10,000	g
Isopropylamine [2-Propanamine]	75-31-0	10,000	g
Isopropyl chloride [Propane, 2-chloro-]	75-29-6	10,000	g
Methane	74-82-8	10,000	f
Methylamine [Methanamine]	74-89-5	10,000	f
3-Methyl-1-butene	563-45-1	10,000	f
2-Methyl-1-butene	563-46-2	10,000	g
Methyl ether [Methane, oxybis-]	115-10-6	10,000	f
Methyl formate [Formic acid, methyl ester]	107-31-3	10,000	g

2-Methylpropene [1-Propene, 2-methyl-]	115-11-7	10,000	f
1,3-Pentadinene	504-60-9	10,000	f
Pentane	109-66-0	10,000	g
1-Pentene	109-67-1	10,000	g
2-Pentene, (E)-	646-04-8	10,000	g
2-Pentene, (Z)-	627-20-3	10,000	g
Propadiene [1,2-Propadiene]	463-49-0	10,000	f
Propane	74-98-6	10,000	f
Propylene [1-Propene]	115-07-1	10,000	f
Propyne [1-Propyne]	74-99-7	10,000	f
Silane	7803-62-5	10,000	f
Tetrafluoroethylene [Ethene, tetrafluoro-]	116-14-3	10,000	f
Tetramethylsilane [Silane, tetramethyl-]	75-76-3	10,000	g
Trichlorosilane [Silane, trichloro-]	10025-78-2	10,000	g
Trifluorochloroethylene [Ethene, chlorotrifluoro-]	79-38-9	10,000	f
Trimethylamine [Methanamine, N,N-dimethyl-]	75-50-3	10,000	f
Vinyl acetylene [1-Buten-3-yne]	689-97-4	10,000	f
Vinyl chloride [Ethene, chloro-]	75-01-4	10,000	a,f
Vinyl ethyl ether [Ethene, ethoxy-]	109-92-2	10,000	g
Vinyl fluoride [Ethene, fluoro-]	75-02-5	10,000	f
Vinylidene chloride [Ethene, 1,1-dichloro-]	75-35-4	10,000	g

Vinylidene fluoride [Ethene, 1,1-difluoro-]	75-38-7	10,000	f
Vinylmethyl ether [Ethene, methoxy-]	107-25-5	10,000	f
[1] A flammable substance when used as a fuel or held for sale as a fuel at a retail facility is excluded from all provisions of this chapter (see Section 5130.5).			
Note -- Basis for Listing:			
a Mandated for listing by Congress.			
f Flammable gas.			
g Volatile flammable liquid.			

Table 3 State Regulated Substances List and Threshold Quantities for Accidental Release Prevention

Chemical Name	*Also on Table 1* [1]	*CAS Number*	*State Threshold quantity (lbs)*
Acetone Cyanohydrin [2]	no	75-86-5	1,000
Acetone Thiosemicarbazide	no	1752-30-3	1,000/10,000 [3]
Acrolein	yes	107-02-8	500
Acrylamide	no	79-06-1	1,000/10,000 [3]
Acrylonitrile	yes	107-13-1	10,000
Acrylyl Chloride	yes	814-68-6	100
Aldicarb	no	116-06-3	100/10,000 [3]
Aldrin	no	309-00-2	500/10,000 [3]
Allyl Alcohol	yes	107-18-6	1,000
Allylamine	yes	107-11-9	500
Aluminum Phosphide [4]	no	20859-73-8	500
Aminopterin	no	54-62-6	500/10,000 [3]
Amiton Oxalate	no	3734-97-2	100/10,000 [3]
Ammonia [5]	yes	7664-41-7	500
Aniline [2]	no	62-53-3	1,000
Antimycin A	no	1397-94-0	1,000/10,000 [3]
ANTU	no	86-88-4	500/10,000 [3]
Arsenic Pentoxide	no	1303-28-2	100/10,000 [3]
Arsenous Oxide	no	1327-53-3	100/10,000 [3]
Arsenous Trichloride	yes	7784-34-1	500
Arsine	yes	7784-42-1	100
Azinphos-Ethyl	no	2642-71-9	100/10,000 [3]
Azinphos-Methyl	no	86-50-0	10/10,000 [3]

Benzene, 1-(Chloromethyl)-4-Nitro-	no	100-14-1	500/10,000 [3]
Benzenearsonic Acid	no	98-05-5	10/10,000 [3]
Benzimidazole, 4,5-Dichloro-2-(Trifluoromethyl)-	no	3615-21-2	500/10,000 [3]
Benzotrichloride [2]	no	98-07-7	100
Bicyclo[2.2.1] Heptane-2-Carbonitrile, 5-Chloro- 6-((((Methylamino) Carbonyl)Oxy)Imino)-, (1s-(1-alpha, 2-beta, 4-alpha, 5-alpha, 6E))-.	no	15271-41-7	500/10,000 [3]
Bis(Chloromethyl) Ketone	no	534-07-6	10/10,000 [3]
Bitoscanate	no	4044-65-9	500/10,000 [3]
Boron Trichloride	yes	10294-34-5	500
Boron Trifluoride	yes	7637-07-2	500
Boron Trifluoride Compound w/ Methyl Ether (1:1)	yes	353-42-4	1,000
Bromadiolone	no	28772-56-7	100/10,000 [3]
Bromine	yes	7726-95-6	500
Cadmium Oxide	no	1306-19-0	100/10,000 [3]
Cadmium Stearate	no	2223-93-0	1,000/10,000 [3]
Calcium Arsenate	no	7778-44-1	500/10,000 [3]
Camphechlor	no	8001-35-2	500/10,000 [3]
Cantharidin	no	56-25-7	100/10,000 [3]
Carbachol Chloride	no	51-83-2	500/10,000 [3]
Carbamic Acid, Methyl-,o-(((2,4-Dimethyl-1, 3-Dithiolan-2-yl)Methylene) Amino)-.	no	26419-73-8	100/10,000 [3]
Carbofuran	no	1563-66-2	10/10,000 [3]
Carbon Disulfide	yes	75-15-0	10,000

Chlorine	yes	7782-50-5	100
Chlormequat Chloride	no	999-81-5	100/10,000 [3]
Chloroacetic Acid	no	79-11-8	100/10,000 [3]
Chloroform	yes	67-66-3	10,000
Chloromethyl Ether	yes	542-88-1	100
Chloromethyl Methyl Ether	yes	107-30-2	100
Chlorophacinone	no	3691-35-8	100/10,000 [3]
Chloroxuron	no	1982-47-4	500/10,000 [3]
Chromic Chloride	no	10025-73-7	1/10,000 [3]
Cobalt Carbonyl	no	10210-68-1	10/10,000 [3]
Cobalt, ((2,2′-(1,2-Ethanediylbis (Nitrilomethylidyne)) Bis(6-Fluorophenolato))(2-)-N,N′,O,O′)-.	no	62207-76-5	100/10,000 [3]
Colchicine	no	64-86-8	10/10,000 [3]
Coumaphos	no	56-72-4	100/10,000 [3]
Coumatetralyl	no	5836-29-3	500/10,000 [3]
Cresol, o-	no	95-48-7	1,000/10,000 [3]
Crimidine	no	535-89-7	100/10,000 [3]
Crotonaldehyde	yes	4170-30-3	1,000
Crotonaldehyde, (E)-	yes	123-73-9	1,000
Cyanogen Bromide	no	506-68-3	500/10,000 [3]
Cyanogen Iodide	no	506-78-5	1,000/10,000 [3]
Cyanuric Fluoride	no	675-14-9	100
Cycloheximide	no	66-81-9	100/10,000 [3]
Cyclohexylamine	yes	108-91-8	10,000
Decaborane(14)	no	17702-41-9	500/10,000 [3]
Dialifor	no	10311-84-9	100/10,000 [3]

Diborane	yes	19287-45-7	100
Diepoxybutane [2]	no	1464-53-5	500
Digitoxin	no	71-63-6	100/10,000 [3]
Digoxin	no	20830-75-5	10/10,000 [3]
Dimethoate	no	60-51-5	500/10,000 [3]
Dimethyldichlorosilane	yes	75-78-5	500
Dimethylhydrazine	yes	57-14-7	1,000
Dimethyl-p-Phenylenediamine	no	99-98-9	10/10,000 [3]
Dimethyl Sulfate [2]	no	77-78-1	500
Dimetilan	no	644-64-4	500/10,000 [3]
Dinitrocresol	no	534-52-1	10/10,000 [3]
Dinoseb	no	88-85-7	100/10,000 [3]
Dinoterb	no	1420-07-1	500/10,000 [3]
Diphacinone	no	82-66-6	10/10,000 [3]
Disulfoton [2]	no	298-04-4	500
Dithiazanine Iodide	no	514-73-8	500/10,000 [3]
Dithiobiuret	no	541-53-7	100/10,000 [3]
Emetine, Dihydrochloride	no	316-42-7	1/10,000 [3]
Endosulfan	no	115-29-7	10/10,000 [3]
Endothion	no	2778-04-3	500/10,000 [3]
Endrin	no	72-20-8	500/10,000 [3]
Epichlorohydrin	yes	106-89-8	1,000
EPN	no	2104-64-5	100/10,000 [3]
Ergocalciferol	no	50-14-6	1,000/10,000 [3]
Ergotamine Tartrate	no	379-79-3	500/10,000 [3]
Ethylenediamine	yes	107-15-3	10,000
Ethylene Fluorohydrin	no	371-62-0	10

Ethyleneimine	yes	151-56-4	500
Ethylene Oxide	yes	75-21-8	1,000
Fenamiphos	no	22224-92-6	10/10,000 [3]
Fluenetil	no	4301-50-2	100/10,000 [3]
Fluorine	yes	7782-41-4	500
Fluoroacetamide	no	640-19-7	100/10,000 [3]
Fluoroacetic Acid	no	144-49-0	10/10,000 [3]
Fluoroacetyl Chloride	no	359-06-8	10
Fluorouracil	no	51-21-8	500/10,000 [3]
Formaldehyde [5]	yes	50-00-0	500
Formetanate Hydrochloride	no	23422-53-9	500/10,000 [3]
Formparanate	no	17702-57-7	100/10,000 [3]
Fuberidazole	no	3878-19-1	100/10,000 [3]
Furan	yes	110-00-9	500
Gallium Trichloride	no	13450-90-3	500/10,000 [3]
Hydrazine	yes	302-01-2	1,000
Hydrocyanic Acid	yes	74-90-8	100
Hydrogen Chloride (gas only)	yes	7647-01-0	500
Hydrogen Fluoride	yes	7664-39-3	100
Hydrogen Selenide	yes	7783-07-5	10
Hydrogen Sulfide	yes	7783-06-4	500
Hydroquinone [6]	no	123-31-9	500/10,000 [3]
Iron, Pentacarbonyl-	yes	13463-40-6	100
Isobenzan	no	297-78-9	100/10,000 [3]
Isobutyronitrile	yes	78-82-0	1,000
Isocyanic Acid, 3,4-Dichlorophenyl Ester	no	102-36-3	500/10,000 [3]

Isodrin	no	465-73-6	100/10,000 [3]
Isophorone Diisocyanate	no	4098-71-9	100
Isopropyl Chloroformate	yes	108-23-6	1,000
Leptophos	no	21609-90-5	500/10,000 [3]
Lewisite [2]	no	541-25-3	10
Lindane	no	58-89-9	1,000/10,000 [3]
Lithium Hydride [4]	no	7580-67-8	100
Malononitrile	no	109-77-3	500/10,000 [3]
Manganese, Tricarbonyl Methylcyclopentadienyl [2]	no	12108-13-3	100
Mechlorethamine [2]	no	51-75-2	10
Mercuric Acetate	no	1600-27-7	500/10,000 [3]
Mercuric Chloride	no	7487-94-7	500/10,000 [3]
Mercuric Oxide	no	21908-53-2	500/10,000 [3]
Methacrylonitrile	yes	126-98-7	500
Methacryloyl Chloride	no	920-46-7	100
Methacryloyloxyethyl Isocyanate	no	30674-80-7	100
Methamidophos	no	10265-92-6	100/10,000 [3]
Methanesulfonyl Fluoride	no	558-25-8	1,000
Methidathion	no	950-37-8	500/10,000 [3]
Methiocarb	no	2032-65-7	500/10,000 [3]
Methomyl	no	16752-77-5	500/10,000 [3]
Methoxyethylmercuric Acetate	no	151-38-2	500/10,000 [3]
Methyl Bromide	no	74-83-9	1,000
Methyl 2-Chloroacrylate	no	80-63-7	500
Methyl Chloroformate	yes	79-22-1	500
Methyl Hydrazine	yes	60-34-4	500

Methyl Isocyanate	yes	624-83-9	500
Methyl Isothiocyanate [4]	no	556-61-6	500
Methyl Mercaptan	yes	74-93-1	500
Methylmercuric Dicyanamide	no	502-39-6	500/10,000 [3]
Methyl Phosphonic Dichloride [4]	no	676-97-1	100
Methyl Thiocyanate	yes	556-64-9	10,000
Methyltrichlorosilane	yes	75-79-6	500
Methyl Vinyl Ketone	no	78-94-4	10
Metolcarb	no	1129-41-5	100/10,000 [3]
Mexacarbate	no	315-18-4	500/10,000 [3]
Mitomycin C	no	50-07-7	500/10,000 [3]
Monocrotophos	no	6923-22-4	10/10,000 [3]
Muscimol	no	2763-96-4	500/10,000 [3]
Mustard Gas [2]	no	505-60-2	500
Nickel Carbonyl	yes	13463-39-3	1
Nicotine Sulfate	no	65-30-5	100/10,000 [3]
Nitric Acid	yes	7697-37-2	1,000
Nitric Oxide	yes	10102-43-9	100
Nitrobenzene [2]	no	98-95-3	10,000
Nitrogen Dioxide	no	10102-44-0	100
Norbormide	no	991-42-4	100/10,000 [3]
Organorhodium Complex (PMN-82-147)	no	MIXTURE	10/10,000 [3]
Ouabain	no	630-60-4	100/10,000 [3]
Oxamyl	no	23135-22-0	100/10,000 [3]
Ozone	no	10028-15-6	100
Paraquat Dichloride	no	1910-42-5	10/10,000 [3]

Paraquat Methosulfate	no	2074-50-2	10/10,000 [3]
Parathion-Methyl	no	298-00-0	100/10,000 [3]
Paris Green	no	12002-03-8	500/10,000 [3]
Pentaborane	no	19624-22-7	500
Pentadecylamine	no	2570-26-5	100/10,000 [3]
Peracetic Acid	yes	79-21-0	500
Perchloromethylmercaptan	yes	594-42-3	500
Phenol	no	108-95-2	500/10,000 [3]
Phenol, 2,2′-Thiobis(4-Chloro-6-Methyl)-	no	4418-66-0	100/10,000 [3]
Phenol, 3-(1-Methylethyl)-, Methylcarbamate	no	64-00-6	500/10,000 [3]
Phenoxarsine, 10, 10′ -- Oxydi-	no	58-36-6	500/10,000 [3]
Phenyl Dichloroarsine [2]	no	696-28-6	500
Phenylhydrazine Hydrochloride	no	59-88-1	1,000/10,000 [3]
Phenylmercury Acetate	no	62-38-4	500/10,000 [3]
Phenylsilatrane	no	2097-19-0	100/10,000 [3]
Phenylthiourea	no	103-85-5	100/10,000 [3]
Phorate [2]	no	298-02-2	10
Phosacetim	no	4104-14-7	100/10,000 [3]
Phosfolan	no	947-02-4	100/10,000 [3]
Phosgene	yes	75-44-5	10
Phosmet	no	732-11-6	10/10,000 [3]
Phosphine	yes	7803-51-2	500
Phosphonothioic Acid, Methyl-, S-(2-(Bis(1-Methylethyl)Amino)Ethyl) O-Ethyl Ester. [2]	no	50782-69-9	100
Phosphorus [4]	no	7723-14-0	100

Phosphorus Oxychloride	yes	10025-87-3	500
Phosphorus Pentachloride [4]	no	10026-13-8	500
Phosphorus Trichloride	yes	7719-12-2	1,000
Physostigmine	no	57-47-6	100/10,000 [3]
Physostigmine, Salicylate (1:1)	no	57-64-7	100/10,000 [3]
Picrotoxin	no	124-87-8	500/10,000 [3]
Piperidine	yes	110-89-4	1,000
Potassium Arsenite	no	10124-50-2	500/10,000 [3]
Potassium Cyanide [4]	no	151-50-8	100
Potassium Silver Cyanide [4]	no	506-61-6	500
Promecarb	no	2631-37-0	500/10,000 [3]
Propargyl Bromide	no	106-96-7	10
Propiolactone, Beta- [2]	no	57-57-8	500
Propionitrile	yes	107-12-0	500
Propiophenone, 4-Amino-	no	70-69-9	100/10,000 [3]
Propyl Chloroformate	yes	109-61-5	500
Prothoate	no	2275-18-5	100/10,000 [3]
Pyrene	no	129-00-0	1,000/10,000 [3]
Pyridine, 4-Amino-	no	504-24-5	500/10,000 [3]
Pyridine, 4-Nitro-, 1-Oxide	no	1124-33-0	500/10,000 [3]
Pyriminil	no	53558-25-1	100/10,000 [3]
Salcomine	no	14167-18-1	500/10,000 [3]
Sarin [2]	no	107-44-8	10
Selenious Acid	no	7783-00-8	1,000/10,000 [3]
Semicarbazide Hydrochloride	no	563-41-7	1,000/10,000 [3]
Sodium Arsenate	no	7631-89-2	1,000/10,000 [3]
Sodium Arsenite	no	7784-46-5	500/10,000 [3]

Sodium Azide (Na (N3)) [4]	no	26628-22-8	500
Sodium Cacodylate	no	124-65-2	100/10,000 [3]
Sodium Cyanide (Na (CN)) [4]	no	143-33-9	100
Sodium Fluoroacetate	no	62-74-8	10/10,000 [3]
Sodium Selenate	no	13410-01-0	100/10,000 [3]
Sodium Selenite	no	10102-18-8	100/10,000 [3]
Sodium Tellurite	no	10102-20-2	500/10,000 [3]
Stannane, Acetoxytriphenyl-	no	900-95-8	500/10,000 [3]
Strychnine	no	57-24-9	100/10,000 [3]
Strychnine Sulfate	no	60-41-3	100/10,000 [3]
Sulfur Dioxide	yes	7446-09-5	500
Sulfuric Acid [7]	no	7664-93-9	1,000
Sulfur Tetrafluoride	yes	7783-60-0	100
Sulfur Trioxide [4]	yes	7446-11-9	100
Tabun [2]	no	77-81-6	10
Tellurium Hexafluoride	no	7783-80-4	100
Tetramethyllead	yes	75-74-1	100
Tetranitromethane	yes	509-14-8	500
Thallium Sulfate	no	10031-59-1	100/10,000 [3]
Thallous Carbonate	no	6533-73-9	100/10,000 [3]
Thallous Chloride	no	7791-12-0	100/10,000 [3]
Thallous Malonate	no	2757-18-8	100/10,000 [3]
Thallous Sulfate	no	7446-18-6	100/10,000 [3]
Thiocarbazide	no	2231-57-4	1,000/10,000 [3]
Thiofanox	no	39196-18-4	100/10,000 [3]
Thiosemicarbazide	no	79-19-6	100/10,000 [3]
Thiourea, (2-Chlorophenyl)-	no	5344-82-1	100/10,000 [3]

Thiourea, (2-Methylphenyl)-	no	614-78-8	500/10,000 [3]
Titanium Tetrachloride	yes	7550-45-0	100
Toluene-2,4-Diisocyanate [8]	yes	584-84-9	500
Toluene-2,6-Diisocyanate [8]	yes	91-08-7	100
Triamiphos	no	1031-47-6	500/10,000 [3]
Trichloro(Chloromethyl)Silane	no	1558-25-4	100
Trichloro(Dichlorophenyl)Silane	no	27137-85-5	500
Triethoxysilane	no	998-30-1	500
Trimethylchlorosilane	yes	75-77-4	1,000
Trimethylolpropane Phosphite	no	824-11-3	100/10,000 [3]
Trimethyltin Chloride	no	1066-45-1	500/10,000 [3]
Triphenyltin Chloride	no	639-58-7	500/10,000 [3]
Tris(2-Chloroethyl)Amine [2]	no	555-77-1	100
Valinomycin	no	2001-95-8	1,000/10,000 [3]
Vanadium Pentoxide	no	1314-62-1	100/10,000 [3]
Vinyl Acetate Monomer	yes	108-05-4	1,000
Warfarin	no	81-81-2	500/10,000 [3]
Warfarin Sodium	no	129-06-6	100/10,000 [3]
Xylylene Dichloride	no	28347-13-9	100/10,000 [3]
Zinc, Dichloro(4,4-Dimethyl-5((((Methylamino) Carbonyl)Oxy)Imino)			
Pentanenitrile)-, (T-4)-.	no	58270-08-9	100/10,000 [3]
Zinc Phosphide [4]	no	1314-84-7	500

[1] This column identifies substances which may appear on Table 1. Table 1 may have concentration limitations.

[2] Substances that failed the evaluation pursuant to Section 25532(g)(2) of the HSC but remain listed pursuant to potential health impacts. The exemption in Section 5130.2(b)(1)(B) regarding portions of a

process where these regulated substances are handled at partial pressures below 10 mm Hg does not apply to these substances.
[3] These extremely hazardous substances are solids. The lesser quantity listed applies only if in powdered form and with a particle size of less than 100 microns; or if handled in solution or in molten form; or the substance has an NFPA rating for reactivity of 2, 3, or 4. Otherwise, a 10,000 pound threshold applies. The exemption in Section 5130.2(b)(1)(B) regarding portions of a process where these regulated substances are handled at partial pressures below 10 mm Hg does not apply to these substances.
[4] These extremely hazardous substances are reactive solids. The exemption in Section 5130.2(b)(1)(B) regarding portions of a process where these regulated substances are handled at partial pressures below 10 mm Hg does not apply to these substances.
[5] Appropriate synonyms or mixtures of extremely hazardous substances with the same CAS number are also regulated, e.g., formalin. The listing of ammonia includes anhydrous and aqueous forms of ammonia pursuant to Section 25532(g)(2).
[6] Hydroquinone is exempt in crystalline form.
[7] Sulfuric acid fails the evaluation pursuant to Section 25532(g)(2) of the HSC but remains listed as a Regulated Substance only under the following conditions:
a. If concentrated with greater than 100 pounds of sulfur trioxide or the acid meets the definition of oleum. (The Table 3 threshold for sulfur trioxide is 100 pounds.) (The Table 1 threshold for oleum is 10,000 pounds.)
b. If in a container with flammable hydrocarbons (flash point < 73° F).
[8] The exemption in Section 5130.2(b)(1)(B) regarding portions of a process where these regulated substances are handled at partial pressures below 10 mm Hg does not apply to these substances.

Article 10. Other Requirements

§ 5140.1. Recordkeeping.

The owner or operator shall maintain records supporting the implementation of this chapter for five years unless otherwise provided in Article 6 of this chapter.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25531, Health and Safety Code; and Section 68.200, Part 68, Title 40, Code of Federal Regulations.

§ 5140.2. Audits.

(a) In addition to inspections for the purpose of regulatory development and enforcement of the federal CAA, the UPA shall periodically audit RMPs submitted under Article 3 of this chapter to review the adequacy of such RMPs and require revisions to RMPs when necessary to ensure compliance with this chapter. To the extent possible, any audit shall be fully coordinated with the Unified Program elements at a stationary source.

(b) The UPA shall select stationary sources for audits based on any of the following criteria:

(1) Accident history of the stationary source;

(2) Accident history of other stationary sources in the same industry;

(3) Quantity of regulated substances present at the stationary source;

(4) Location of the stationary source and its proximity to the public and environmental receptors;

(5) The presence of specific regulated substances;

(6) The hazards identified in the RMP; and,

(7) A plan providing for neutral, random oversight.

(c) Exemption from audits. A stationary source with a Star or Merit ranking under OSHA's voluntary protection program shall be exempt from audits under sections (b)(2) and (b)(7).

(d) In accordance with Section 25534.5 of HSC, the UPA shall have access to the stationary source, supporting documentation, and any area where an accidental release could occur.

(e) Based on the audit, the UPA may issue the owner or operator of a stationary source a written preliminary determination of necessary revisions to the stationary source's RMP to ensure that the RMP complies with the requirements of this chapter. The preliminary determination shall include an explanation for the basis for the revisions, reflecting industry standards and guidelines (such as AIChE/CCPS guidelines and ASME and API

standards) to the extent that such standards and guidelines are applicable, and shall include a timetable for their implementation.

(f) Written response to a preliminary determination.

(1) The owner or operator shall respond in writing to a preliminary determination made in accordance with section (e). The response shall state that the owner or operator will implement the revisions contained in the preliminary determination in accordance with the timetable included in the preliminary determination or shall state that the owner or operator rejects the revisions in whole or in part. For each rejected revision, the owner or operator shall explain the basis for rejecting such revision. Such explanation may include substitute revisions.

(2) The written response under section (f)(1) shall be received by the UPA within 90 days of the issue of the preliminary determination or a shorter period of time as the UPA specifies in the preliminary determination as necessary to protect public health and the environment. Prior to the written response being due and upon written request from the owner or operator, the UPA may provide in writing additional time for the response to be received.

(g) After providing the owner or operator an opportunity to respond under section (f), the UPA may issue the owner or operator a written final determination of necessary revisions to the stationary source's RMP. A time-table for implementing these revisions shall be developed in consultation with the stationary source. Revisions must be completed as soon as practicable, but no later than one year after the final determination has been issued unless the UPA agrees, in writing, upon a timetable before the resolution becomes overdue. The final determination may adopt or modify the revisions contained in the preliminary determination under section (e) or may adopt or modify the substitute revisions provided in the response under section (f). A final determination that adopts a revision rejected by the owner or operator shall include an explanation of the basis for the revision. A final determination that does not adopt a substitute revision provided under section (f) shall include an explanation of the basis for finding such substitute revision unreasonable.

(h) Thirty days after completion of the actions detailed in the implementation schedule set in the final determination under section (g), the owner or operator shall be in violation of this section unless the owner or operator corrects the deficiencies as outlined in the final determination.

(i) The owner or operator shall document the actual completion dates when deficiencies were corrected. The public shall have access to the preliminary determinations, responses, and final determinations under this section in a manner consistent with Section 5140.6.

(j) Nothing in this section shall preclude, limit, or interfere in any way with the authority of USEPA or the state to exercise its enforcement, investigatory, and information gathering authorities under the federal CAA or the HSC.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Sections 25534.05, 25534.5 and 25537, Health and Safety Code; and Section 68.220, Part 68, Title 40, Code of Federal Regulations.

§ 5140.3. Independent Assessments of Program 4 Facilities.

After a major incident, the UPA may perform an independent Process Safety Culture Assessment (PSCA), Incident Investigation, evaluation of the ARP management system required under Section 5110.19, or Human Factors Analysis on any Program 4 facility.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; and Sections 25531, 25531.2, 25534, 25535 and 25535.1, Health and Safety Code.

§ 5140.4. Inspections.

The UPA shall inspect every stationary source required to be registered pursuant to this chapter at least once every three years to determine whether the stationary source is in compliance with this chapter. The requirements of this section do not alter or affect the immunity provided a public entity pursuant to Section 818.6 of the Government Code. To the extent possible, any CalARP program inspections shall be coordinated with the Unified Program.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Sections 25534.5, 25537, 25540.5 and 25541.3, Health and Safety Code; and Sections 68.215 and 68.210, Part 68, Title 40, Code of Federal Regulations.

§ 5140.5. Enforcement.

The owner or operator of a stationary source who violates the statutes or regulations established for the CalARP program may be liable for penalties or enforcement pursuant to provisions in Article 2 of Chapter 6.95 of the HSC beginning with Section 25540.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Sections 25534.5, 25537, 25540.5 and 25541.3, Health and Safety Code; and Sections 68.215 and 68.220, Part 68, Title 40, Code of Federal Regulations.

§ 5140.6. Availability of Information to the Public.

(a) The RMP required under Article 3 of this chapter shall be available to the public pursuant to Section 25534.05(a)(4) of HSC, except for offsite consequence analysis data, pursuant to (b).

(b) The UPA shall ensure that any member of the public has access, by appointment, to a copy of the offsite consequence analysis data, pursuant to Section 5070.4. The member of the public may read, but not remove, reproduce, print, scan or image the documents. The UPA may require personal photo identification issued by a Federal, State or local government agency to the person, and may require the person's signature on a sign-in

sheet. The UPA may limit a person's access to offsite consequence analysis data to 10 stationary sources in any calendar month.

(c) The disclosure of classified information by the Department of Defense or other federal agencies or contractors of such agencies shall be controlled by applicable laws, regulations, or executive orders concerning the release of classified information.

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Sections 25534.05(a), 25535.2 and 25538, Health and Safety Code; and Sections 68.210, Part 68, and 1400.3, Part 1400, Title 40, Code of Federal Regulations.

§ 5140.7. Permit Content and Air Permitting Authority or Agency Requirements.

The requirements of this section apply to any stationary source subject to Section 5050.4(a)(1) of this chapter and Part 70 or 71 of Title 40 of CFR.

(a) The Part 70 or 71 of Title 40 of CFR permit for the stationary source shall contain:

(1) A statement listing Part 68 of Title 40 of CFR as an applicable requirement;

(2) Conditions that require the source owner or operator to submit:

(A) A compliance schedule for meeting the requirements of this chapter by the date provided in Section 5050.4(a)(1), or,

(B) As part of the compliance certification submitted under Section 70.6(c)(5) of Title 40 of CFR, a certification statement that the source is in compliance with all requirements of this chapter, including the registration and submission of the RMP.

(b) The owner or operator shall submit any additional relevant information requested by the UPA, Agency or the appropriate APCD or AQMD.

(c) For Part 70 or 71 of Title 40 of CFR permits issued prior to the deadline for registering and submitting the RMP and which do not contain permit conditions described in section (a), the owner or operator or the appropriate APCD or AQMD shall initiate permit revision or reopening according to the procedures of Part 70.7 or 71.7 of Title 40 of CFR to incorporate the terms and conditions consistent with section (a).

(d) The appropriate APCD or AQMD shall, at a minimum:

(1) Verify from the UPA that the source owner or operator has registered and submitted an RMP or a revised plan when required by this chapter;

(2) Verify from the UPA that the source owner or operator has submitted a source certification or in its absence has submitted a compliance schedule consistent with section (a)(2); and,

(3) Initiate enforcement action based on sections (d)(1) and (d)(2) as appropriate. The AQMD or APCD shall notify the UPA and the UPA shall notify Agency of enforcement actions taken pursuant to this chapter.

(e) The fact that an owner or operator of a stationary source is subject to this chapter due to applicability under Section 5050.4(a)(2) shall not in itself subject the stationary source to the requirements of Part 70 or 71 of Title 40 of CFR.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; Sections 25533(b), 25535(a) and 25540.5, Health and Safety Code; and Section 68.215, Part 68, Title 40, Code of Federal Regulations.

Article 11. Local Program Evaluation

§ 5150.1. Dispute Resolution.

(a) Disputes arising between the owner or operator of a stationary source and an UPA under this chapter shall first be decided by the UPA pursuant to a dispute resolution process. Each UPA shall establish procedures necessary to implement this dispute resolution process. These procedures shall:

(1) Provide that the owner or operator of a stationary source may initiate the dispute resolution process by serving the UPA with prompt, written notice of a dispute;

(2) Identify the official(s) or other employee(s) of the UPA who will resolve disputes arising under this Section;

(3) Set procedures and timetables for providing argument and supporting materials to the UPA;

(4) Require that the UPA render a written decision within 120 days after the owner or operator of a stationary source initiates the dispute resolution process; and,

(5) Use the CUPA dispute resolution process, if the UPA is also a CUPA, providing that such process is consistent with the criteria in (a)(1) through (4) above.

(b) The owner or operator of a stationary source may appeal the decision of an UPA to the Agency Secretary by serving the Secretary with written notice of appeal. The notice of appeal shall be accompanied by:

(1) A copy of the decision of the UPA,

(2) A copy of any written material that the owner or operator submitted to the UPA during the dispute resolution process that the stationary source would want the Secretary to consider, and,

(3) A concise statement of the grounds upon which the owner or operator disputes the decision rendered by the UPA. The notice of appeal and accompanying materials shall be served on the Secretary and the UPA by certified mail, return receipt requested. Such service shall be effected no later than 30 days after the UPA renders its decision, or, if the UPA fails to render a timely decision, no later than 150 days after the owner or operator initiated the dispute resolution process with the UPA.

(c) After receipt of the notice of appeal and accompanying materials, the Secretary shall provide a written acknowledgment of such receipt to the appealing party and the UPA. At the time that the Secretary sends this acknowledgment, or at any later time, the Secretary, in his or her discretion, may request further materials, information or briefing from the stationary source or the UPA, and the Secretary may set schedules for the submission of such materials, information or briefing. The Secretary shall also provide the opportunity for public comment on the dispute, and shall allow the stationary source and the UPA the opportunity to respond to any comments submitted by the public.

(d) Within 120 days after the service of the notice of appeal, or, if the Secretary requires additional time in order to deal with the submission of materials, information, briefing, public comments or responses to public comments, within such extended time as is set by the Secretary, the Secretary shall issue his or her decision. The dispute shall be resolved according to the discretion of the Secretary. The Secretary's decision shall be binding on all parties.

(e) Exhaustion of this dispute resolution process shall not be a prerequisite to the initiation, prosecution or conclusion of any criminal or civil enforcement action brought by the UPA, the District Attorney or the State pursuant to Sections 25540, 25540.5, 25541, 25541.3, 25541.5 of HSC or any other provision of law.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; and Section 25534.05(a)(3), Health and Safety Code.

§ 5150.2. Unified Program Agency Compliance.

Each UPA shall comply with the regulations adopted in this chapter, unless Agency assumes authority pursuant to Section 5150.6(c)(1)(D)(ii).

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; and Sections 25533(d) and 25534.05(e), Health and Safety Code.

§ 5150.3. Maintenance of Unified Program Agency Authorization and Reporting.

In assessing the performance of an UPA, Agency shall consider the following:

(a) Effectiveness of the UPA program to ensure stationary source participation.

(b) Effectiveness of the procedures for records management.

(c) Type and amount of technical assistance provided to stationary sources.

(d) Stationary source inspections which are conducted to ensure compliance with this program.

(e) The UPA process for public participation.

(f) Other required program elements necessary to implement and manage this program.

(g) Comments from interested parties regarding the effectiveness of the local program that raise public safety issues.

(h) The impact of the CalARP in reducing/eliminating significant releases.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; and Section 25533(e), Health and Safety Code.

§ 5150.4. Coordination with the Unified Program.

(a) Agency shall consider the standards under Section 5150.3 to support Agency recommendations to the Secretary for Environmental Protection regarding local agency certification for the Unified Program pursuant to Section 25404.3 of HSC.

(b) As part of the periodic review requirement, Agency shall consider the requirements of Section 5150.3 and Section 25404.4 of HSC.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; and Section 25404.3, Health and Safety Code.

§ 5150.5. Performance Audit Submission.

(a) Beginning in fiscal year 1998 (July 1, 1998 -- June 30, 1999), the UPA shall annually conduct an audit of its activities to implement the Cal-ARP program. This audit is subject to the periodic review carried out pursuant to Section 25404.4(a)(1) of HSC.

(b) An audit report shall be compiled annually based upon the previous fiscal year's activities and shall contain an executive summary and a brief description of how the UPA is meeting the requirements of the program as listed in Section 5150.3. The audit shall include but is not limited to the following information:

(1) a listing of stationary sources which have been audited.

(2) a listing of stationary sources which have been requested to develop RMPs.

(3) a listing of stationary sources which have been inspected.

(4) a listing of stationary sources which have received public comments on the RMP.

(5) a list of new or modified stationary sources.

(6) a summary of enforcement actions initiated by the UPA identifying each stationary source.

(7) a summary of the personnel and personnel years necessary to directly implement, administer, and operate the CalARP program.

(8) a list of those stationary sources determined by the UPA to be exempt from the chapter pursuant to Section 25534(b)(2).

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 25533(e), Health and Safety Code.

§ 5150.6. Unified Program Agency Performance Evaluations.

(a) Agency shall periodically review the UPA's performance to ensure their ability to carry out the requirements of the CalARP program pursuant to the requirements of Article 2, Chapter 6.95, of HSC and these regulations. This review shall be closely coordinated with the Unified Program periodic review process, pursuant to Section 25404.4 of HSC.

(b) Unified Program Agencies shall be reviewed using the standards adopted in Sections 5150.3 and 5150.5 of these regulations.

(c) If Agency determines that an UPA has failed to meet the performance requirements of subdivision (b), Agency shall, as appropriate, initiate one of the following two processes:

(1) Process 1: Assumption of Authority by Agency. Agency shall serve the UPA with a written Notice of Intent to Exercise Specific Powers (NOIESP), which shall inform the UPA of the Secretary's intent to implement the CalARP Program in the local jurisdiction pursuant to Section 25533(e) of HSC. The NOIESP shall state (i) the powers of the UPA that Agency will exercise; (ii) the date on which the exercise of authority shall commence; and, (iii) the reasons it is necessary for Agency to assume this authority.

(A) Response to the NOIESP. Within 60 days after receipt of the NOIESP, the UPA shall respond by: accepting the terms of the NOIESP; appealing the NOIESP; or submitting a proposed Program Improvement Agreement (PIA). If the UPA fails to respond fully to the NOIESP within 60 days, the UPA will be deemed to have accepted the terms of the NOIESP.(iv)

i Acceptance of the NOIESP. The UPA may accept the assumption of authority described in the NOIESP by serving Agency with written notice of such acceptance. After the UPA accepts, or is deemed to have accepted, the terms of the NOIESP, Agency shall schedule a public hearing pursuant to the terms of section (c)(1)(C).

ii Appeal. The UPA may appeal the NOIESP by serving Agency with: a written explanation of the factual or legal grounds for its appeal; any written supporting argument; and any relevant documentary evidence. After receipt of the appeal, Agency shall follow the procedures set forth in section (c)(1)(B).

iii Submission of a PIA. The UPA may respond to the NOIESP by serving Agency with a proposed PIA. After reviewing the proposed PIA, Agency shall either accept the PIA and follow the procedures set forth in section (c)(2) or reject the proposal and schedule a public hearing pursuant to the terms of section (c)(1)(C).

(B) Appeal Procedures. If the UPA appeals the NOIESP, Agency shall review the appeal to determine whether the UPA has made a sufficient showing to warrant the reversal or modification of Agency original decision. Upon completion of this review, Agency shall affirm, modify, or reverse its original decision. Agency shall make its resolution of the appeal available to the public.

i Affirmance. If Agency affirms its original decision, it shall schedule a public hearing addressing its proposed exercise of the powers of the UPA. This hearing will be conducted pursuant to section (c)(1)(C).

ii Reversal. If Agency reverses its decision, Agency shall serve the UPA with written notice that the NOIESP has been withdrawn.

iii Modification. If, based on the appeal, Agency decides to modify its original decision, Agency shall (1) serve the UPA with an amended NOIESP, specifying the powers Agency intends to exercise; and (2) schedule a public hearing on this exercise of powers. This hearing will be conducted pursuant to section (c)(1)(C).

(C) Public Hearing Procedures. In the event that a public hearing is required under this section, the following procedures shall be employed:

i The hearing shall be conducted in the jurisdiction of the UPA that received the NOIESP.

ii A notice of public hearing shall be published in a local newspaper. Notice of the hearing shall be served on the UPA.

iii Within thirty days after the public hearing, the UPA shall review the public hearing comments and serve Agency with its responses, if any, to the comments presented at the public hearing.

(D) Agency shall within 60 days review the comments presented at the public hearing and any responses submitted by the UPA. Based upon this review,

and after consulting with the Secretary, Agency shall do one of the following:

i Approve the continued implementation of the program by the UPA;

ii Assume authority to exercise the powers of the UPA; or,

iii Refer the matter to the Secretary, as specified in section (c)(2), with the recommendation for a PIA or decertification of the UPA.

(E) In the event that Agency assumes authority to exercise the powers of the UPA, the UPA shall, upon request, provide Agency with all relevant records and documents.

(2) Process 2: Referral to the Secretary. As an alternative to the procedures set forth in subsection (c)(1), Agency may refer the matter to the Secretary with a written recommendation that the Secretary institute proceedings to either: require the UPA to enter into a PIA, or, decertify the UPA pursuant to Section 25404.4(a), Chapter 6.11 of HSC.

(A) After Agency issues this recommendation, the Secretary and Agency shall follow the procedures specified in Chapter 6.11 of HSC and any regulations adopted thereto applicable to PIAs or decertification.

(B) If Agency recommends a PIA, Agency shall work with the Secretary to develop a PIA for the UPA.

(C) If the UPA fails to sign a PIA within a time frame specified by Agency or the Secretary, Agency, in its discretion, may either: invoke Section 25533(e) of HSC and issue an NOIESP pursuant to subsection (c)(1), or, recommend that the Secretary decertify the UPA pursuant to Section 25404.4(a), Chapter 6.11, of HSC.

(d) When this section requires the service of a notice or other document, service shall be made by certified mail, return receipt requested. A copy of any such notice or document shall be served on the Secretary.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05, Health and Safety Code. Reference: Section 8585, Government Code; and Sections 25533(e) and (f), Health and Safety Code.

§ 5150.7. Agency Authority.

Nothing in this Chapter shall limit the authority of Agency pursuant to Section 25533(f) of HSC.

Authority cited: Section 8585, Government Code; and Sections 25531 and 25534.05. Health and Safety Code. Reference: Section 8585, Government Code; and Sections 25533, 25540.5, 25541.3 and 25543, Health and Safety Code.

Article 12. Technical Assistance

§ 5160.1. Technical Assistance.

(a) The owner or operator of a stationary source shall closely coordinate with the UPA to ensure that appropriate technical standards are applied to the implementation of this chapter.

(b) The owner or operator of a stationary source shall request assistance from the UPA when necessary to address compliance with this chapter or safety issues regarding unfamiliar processes.

Appendix A. Table of Toxic Endpoints

[As defined in Section 5080.2 of this chapter]

CAS Number	*Chemical Name*	*Toxic Endpoint (mg/l)*
75-86-5	Acetone cyanohydrin	0.025
1752-30-3	Acetone thiosemicarbazide	0.10
107-02-8	Acrolein [2-Propenal]	0.0011
79-06-1	Acrylamide	0.060
107-13-1	Acrylonitrile [2-Propenenitrile]	0.076
814-68-6	Acrylyl chloride [2-Propenoyl chloride]	0.00090
116-06-3	Aldicarb	0.00030
309-00-2	Aldrin	0.010
107-18-6	Allyl alcohol [2-Propen-1-ol]	0.036
107-11-9	Allylamine [2-Propen-1-amine]	0.0032
20859-73-8	Aluminum phosphide	0.0047
54-62-6	Aminopterin	0.025
3734-97-2	Amiton oxalate	0.0030
7664-41-7	Ammonia	0.14
62-53-3	Aniline	0.046
1397-94-0	Antimycin A	0.0018
86-88-4	ANTU	0.010

1303-28-2	Arsenic pentoxide	0.003
1327-53-3	Arsenous oxide	0.003
7784-34-1	Arsenous trichloride	0.010
7784-42-1	Arsine	0.0019
2642-71-9	Azinphos ethyl	0.0039
86-50-0	Azinphos methyl	0.00070
100-14-1	Benzene, 1-(Chloromethyl)-4-nitro-	0.028
98-05-5	Benzenearsonic acid	0.00027
3615-21-2	Benzimidazole, 4,5-Dichloro-2-(trifluoromethyl)-	0.013
98-07-7	Benzotrichloride	0.001
15271-41-7	Bicyclo[2.2.1] heptane-2-carbonitrile, 5-Chloro-6-((((methylamino) carbonyl) oxy) imino)-, (1s-(1-alpha, 2-beta, 4-alpha, 5-alpha, 6E))	0.019
534-07-6	Bis(Chloromethyl) ketone	0.0004
4044-65-9	Bitoscanate	0.020
10294-34-5	Boron trichloride [Borane, trichloro-]	0.010
7637-07-2	Boron trifluoride [Borane, trifluoro-]	0.028
353-42-4	Boron trifluoride compound with methyl ether (1:1) [Boron, trifluoro [oxybis[methane]]-, T4	0.023
28772-56-7	Bromadiolone	0.0010
7726-95-6	Bromine	0.0065
1306-19-0	Cadmium oxide	0.0040
2223-93-0	Cadmium stearate	0.00018
7778-44-1	Calcium arsenate	0.00150
8001-35-2	Camphechlor [Toxaphene]	0.020
56-25-7	Cantharidin	0.0043
51-83-2	Carbachol chloride	0.015

26419-73-8	Carbamicacid, Methyl-o-(((2,4-dimethyl-1, 3-dithiolan-2-yl) methylene) amino)-	0.0010
1563-66-2	Carbofuran	0.00043
75-15-0	Carbon disulfide	0.16
7782-50-5	Chlorine	0.0087
10049-04-4	Chlorine dioxide [Chlorine oxide (ClO2)]	0.0028
999-81-5	Chlormequat chloride	0.0070
79-11-8	Chloroacetic acid	0.026
67-66-3	Chloroform [Methane, trichloro-]	0.49
542-88-1	Chloromethyl ether [Methane, oxybis [chloro-]	0.00025
107-30-2	Chloromethyl methyl ether [Methane, chloromethoxy-]	0.0018
3691-35-8	Chlorophacinone	0.0010
1982-47-4	Chloroxuron	0.010
10025-73-7	Chromic chloride	0.00152
10210-68-1	Cobalt Carbonyl	0.00027
62207-76-5	Cobalt, ((2,2′-(1,2-Ethanediylbis (Nitrilomethylidyne)) Bis(6-Fluorophenolato))(2-)-N,N′,O,O′)-.	0.0004
64-86-8	Colchicine	0.00090
56-72-4	Coumaphos	0.00015
5836-29-3	Coumatetralyl	0.0165
95-48-7	Cresol, o-	0.100
535-89-7	Crimidine	0.0012
4170-30-3	Crotonaldehyde [2-Butenal]	0.029
123-73-9	Crotonaldehyde, (E)-, [2-Butenal,(E)-]	0.029
506-68-3	Cyanogen bromide	0.044
506-77-4	Cyanogen chloride	0.030

506-78-5	Cyanogen iodide	0.180
675-14-9	Cyanuric fluoride	0.00017
66-81-9	Cycloheximide	0.0020
108-91-8	Cyclohexylamine [Cyclohexanamine]	0.16
17702-41-9	Decaborane(14)	0.00075
10311-84-9	Dialifor	0.0050
19287-45-7	Diborane	0.0011
1464-53-5	Diepoxybutane	0.0035
71-63-6	Digitoxin	0.00018
20830-75-5	Digoxin	0.00020
60-51-5	Dimethoate	0.030
75-78-5	Dimethyldichlorosilane [Silane, dichlorodimethyl-]	0.026
57-14-7	1,1-Dimethylhydrazine [Hydrazine, 1,1-dimethyl-]	0.012
99-98-9	Dimethyl-p-phenylenediamine	0.00013
77-78-1	Dimethyl sulfate	0.00062
644-64-4	Dimetilan	0.025
534-52-1	Dinitrocresol	0.00050
88-85-7	Dinoseb	0.0045
1420-07-1	Dinoterb	0.025
82-66-6	Diphacinone	0.0009
298-04-4	Disulfoton	0.0020
514-73-8	Dithiazanine iodide	0.020
541-53-7	Dithiobiuret	0.0050
316-42-7	Emetine, dihydrochloride	0.00015
115-29-7	Endosulfan	0.00080
2778-04-3	Endothion	0.017

72-20-8	Endrin	0.0003
106-89-8	Epichlorohydrin [Oxirane, (chloromethyl)-]	0.076
2104-64-5	EPN	0.0005
50-14-6	Ergocalciferol	0.040
379-79-3	Ergotamine tartrate	0.010
107-15-3	Ethylenediamine [1,2-Ethanediamine]	0.49
371-62-0	Ethylene fluorohydrin	0.000060
151-56-4	Ethyleneimine [Aziridine]	0.018
75-21-8	Ethylene oxide [Oxirane]	0.090
22224-92-6	Fenamiphos	0.0009
4301-50-2	Fluenetil	0.0060
7782-41-4	Fluorine	0.0039
640-19-7	Fluoroacetamide	0.0058
144-49-0	Fluoroacetic acid	0.00047
359-06-8	Fluoroacetyl chloride	0.010
51-21-8	Fluorouracil	0.019
50-00-0	Formaldehyde	0.012
23422-53-9	Formetanate hydrochloride	0.018
17702-57-7	Formparanate	0.0072
3878-19-1	Fuberidazole	0.0033
110-00-9	Furan	0.0012
13450-90-3	Gallium trichloride	0.032
302-01-2	Hydrazine	0.011
74-90-8	Hydrocyanic acid	0.011
7647-01-0	Hydrogen chloride/Hydrochloric acid	0.030
7664-39-3	Hydrogen fluoride/Hydrofluoric acid	0.016
7783-07-5	Hydrogen selenide	0.00066

7783-06-4	Hydrogen sulfide	0.042
123-31-9	Hydroquinone	0.003
13463-40-6	Iron, pentacarbonyl-[Ironcarbonyl (Fe(CO)5), (TB-5-11)-]	0.00044
297-78-9	Isobenzan	0.0020
78-82-0	Isobutyronitrile [Propanenitrile, 2-methyl-]	0.14
102-36-3	Isocyanic acid, 3,4-dichlorophenyl ester	0.014
465-73-6	Isodrin	0.007
4098-71-9	Isophorone diisocyanate	0.00125
108-23-6	Isopropyl chloroformate [Carbonochloride acid,1-methylethyl ester]	0.10
21609-90-5	Leptophos	0.030
541-25-3	Lewisite	0.00012
58-89-9	Lindane	0.050
7580-67-8	Lithium hydride	0.0001
109-77-3	Malononitrile	0.013
12108-13-3	Manganese, tricarbonyl methylcyclopentadienyl	0.00060
51-75-2	Mechlorethamine [Nitrogen Mustard 2]	0.000022
1600-27-7	Mercuric acetate	0.00001
7487-94-7	Mercuric chloride	0.00003
21908-53-2	Mercuric oxide	0.000027
126-98-7	Methacrylonitrile [2-Propenenitrile, 2-methyl-]	0.0027
920-46-7	Methacryloyl chloride	0.0006
30674-80-7	Methacryloyloxyethyl isocyanate	0.00063
10265-92-6	Methamidophos	0.060
558-25-8	Methanesulfonyl fluoride	0.0125

950-37-8	Methidathion	0.020
2032-65-7	Methiocarb	0.015
16752-77-5	Methomyl	0.010
151-38-2	Methoxyethylmercuric acetate	0.000048
74-83-9	Methyl bromide	0.00388
74-87-3	Methyl chloride [Methane, chloro-]	0.82
80-63-7	Methyl 2-chloroacrylate	0.005
79-22-1	Methyl chloroformate [Carbonochloridic acid, methylester]	0.0019
60-34-4	Methyl hydrazine [Hydrazine, methyl-]	0.0094
624-83-9	Methyl isocyanate [Methane, isocyanato-]	0.0012
556-61-6	Methyl isothiocyanate	0.033
74-93-1	Methyl mercaptan [Methanethiol]	0.049
502-39-6	Methylmercuric dicyanamide	0.000045
676-97-1	Methyl phosphonic dichloride	0.0014
556-64-9	Methyl thiocyanate [Thiocyanic acid, methyl ester]	0.085
75-79-6	Methyltrichlorosilane [Silane, trichloromethyl-]	0.018
78-94-4	Methyl vinyl ketone	0.00049
1129-41-5	Metolcarb	0.00480
315-18-4	Mexacarbate	0.014
50-07-7	Mitomycin C	0.023
6923-22-4	Monocrotophos	0.00063
2763-96-4	Muscimol	0.017
505-60-2	Mustard gas [Sulfure Mustard]	0.0001
13463-39-3	Nickel carbonyl	0.00067
65-30-5	Nicotine sulfate	0.0090

7697-37-2	Nitric acid	0.026
10102-43-9	Nitric oxide [Nitrogen oxide (NO)]	0.031
98-95-3	Nitrobenzene	0.10
10102-44-0	Nitrogen dioxide	0.00094
991-42-4	Norbormide	0.0038
8014-95-7	Oleum (Fuming Sulfuric acid) [Sulfuric acid, mixture with sulfur trioxide]	0.010
MIXTURE	Organorhodium complex [PMN-82-147]	0.000292
630-60-4	Ouabain	0.0083
23135-22-0	Oxamyl	0.0017
10028-15-6	Ozone	0.0020
1910-42-5	Paraquat dichloride	0.0005
2074-50-2	Paraquat methosulfate	0.015
298-00-0	Parathion-methyl	0.00034
12002-03-8	Paris green	0.00338
19624-22-7	Pentaborane	0.00036
2570-26-5	Pentadecylamine	0.0020
79-21-0	Peracetic acid [Ethaneperoxoic acid]	0.0045
594-42-3	Perchloromethylmercaptan [Methanesulfenyl chloride, trichloro-]	0.0076
108-95-2	Phenol	0.089
4418-66-0	Phenol, 2,2′-thiobis(4-chloro-6-methyl)-	0.0013
64-00-6	Phenol, 3-(1-methylethyl)-, methylcarbamate	0.016
58-36-6	Phenoxarsine, 10,10′-oxydi-	0.014
696-28-6	Phenyl dichloroarsine	0.000061
59-88-1	Phenylhydrazine hydrochloride	0.05
62-38-4	Phenylmercury acetate	0.000168
2097-19-0	Phenylsilatrane	0.0010

103-85-5	Phenylthiourea	0.0030
298-02-2	Phorate	0.00004
4104-14-7	Phosacetim	0.0037
947-02-4	Phosfolan	0.0090
75-44-5	Phosgene [Carbonic dichloride]	0.00081
732-11-6	Phosmet	0.00054
7803-51-2	Phosphine	0.0035
50782-69-9	Phosphonothioic acid, methyl-, S-(2-(bis(1-methylethyl)amino)ethyl) O-ethyl ester [VX]	0.000029
7723-14-0	Phosphorus	0.00075
10025-87-3	Phosphorus oxychloride [Phosphoryl chloride]	0.0030
10026-13-8	Phosphorus pentachloride	0.0125
7719-12-2	Phosphorus trichloride [Phosphorous trichloride]	0.028
57-47-6	Physostigmine	0.0045
57-64-7	Physostigmine, Salicylate (1:1)	0.0025
124-87-8	Picrotoxin	0.015
110-89-4	Piperidine	0.022
10124-50-2	Potassium arsenite	0.003
151-50-8	Potassium cyanide	0.0050
506-61-6	Potassium silver cyanide	0.0200
2631-37-0	Promecarb	0.016
106-96-7	Propargyl bromide	0.000030
57-57-8	Propiolactone, beta-	0.0015
107-12-0	Propionitrile [Propanenitrile]	0.0037
70-69-9	Propiophenone, 4-amino-	0.0056

109-61-5	Propyl chloroformate [Carbonochloridic acid, propylester]	0.010
75-55-8	Propyleneimine [Aziridine, 2-methyl-]	0.12
75-56-9	Propylene oxide [Oxirane, methyl-]	0.59
2275-18-5	Prothoate	0.0017
129-00-0	Pyrene	0.0025
504-24-5	Pyridine, 4-amino-	0.020
1124-33-0	Pyridine, 4-nitro-, 1-oxide	0.080
53558-25-1	Pyriminil	0.0062
14167-18-1	Salcomine	0.039
107-44-8	Sarin	0.000035
7783-00-8	Selenious acid	0.000327
563-41-7	Semicarbazide hydrochloride	0.10
7631-89-2	Sodium arsenate	0.000027
7784-46-5	Sodium arsenite	0.0006
26628-22-8	Sodium azide	0.00029
124-65-2	Sodium cacodylate	0.003
143-33-9	Sodium cyanide	0.0025
62-74-8	Sodium fluoroacetate	0.0002
13410-01-0	Sodium selenate	0.000479
10102-18-8	Sodium selenite	0.000438
10102-20-2	Sodium tellurite	0.0075
900-95-8	Stannane, acetoxytriphenyl-	0.000345
57-24-9	Strychnine	0.00030
60-41-3	Strychnine sulfate	0.0050
7446-09-5	Sulfur dioxide	0.0078
7664-93-9	Sulfuric acid	0.0002

7783-60-0	Sulfur tetrafluoriden [Sulfur fluoride (SF4), (T-4)-]	00092
7446-11-9	Sulfur trioxide	0.010
77-81-6	Tabun	0.000014
7783-80-4	Tellurium hexafluoride	0.0010
75-74-1	Tetramethyllead [Plumbane, tetramethyl-]	0.0040
509-14-8	Tetranitromethane [Methane, tetranitro-]	0.0040
10031-59-1	Thallium sulfate	0.002
6533-73-9	Thallous carbonate	0.002
7791-12-0	Thallous chloride	0.002
2757-18-8	Thallous malonate	0.002
7446-18-6	Thallous sulfate	0.00062
2231-57-4	Thiocarbazide	0.10
39196-18-4	Thiofanox	0.0085
79-19-6	Thiosemicarbazide	0.0015
5344-82-1	Thiourea, (2-chlorophenyl)-	0.0046
614-78-8	Thiourea, (2-methylphenyl)-	0.050
7750-45-0	Titanium tetrachloride [Titanium chloride (TiCI4) (T-4)-]	0.020
584-84-9	Toluene 2,4-diisocyanate [Benzene, 2,4-diisocyanato-1-methyl-]	0.0070
91-08-7	Toluene 2,6-diisocyanate [Benzene, 1,3-diisocyanato-2-methyl-]	0.0070
26471-62-5	Toluene diisocyanate (unspecified isomer) [Benzene, 1,3-diisocyanatomethyl-]	0.0070
1031-47-6	Triamiphos	0.010
1558-25-4	Trichloro(chloromethyl)silane	0.055
27137-85-5	Trichloro(dichlorophenyl)silane	0.084
998-30-1	Triethoxysilane	0.00336

75-77-4	Trimethylchlorosilane [Silane, chlorotrimethyl-]	0.050
824-11-3	Trimethylolpropane phosphite	0.0025
1066-45-1	Trimethyltin chloride	0.000168
639-58-7	Triphenyltin chloride	0.000325
555-77-1	Tris(2-chloroethyl)amine [Nitrogen Mustard 3]	0.000022
2001-95-8	Valinomycin	0.0025
1314-62-1	Vanadium pentoxide	0.00050
108-05-4	Vinyl acetate monomer [Acetic acid ethenyl ester]	0.26
81-81-2	Warfarin	0.020
129-06-6	Warfarin sodium	0.0090
28347-13-9	Xylylene dichloride	0.0020
58270-08-9	Zinc, Dichloro(4,4-Dimethyl-5((((Methylamino) Carbonyl)Oxy) Imino) Pentanenitrile)-, (T-4)-	0.0090
1314-84-7	Zinc phosphate	0.011

Authority cited: Sections 25531 and 25534.05, Health and Safety Code. Reference: Sections 25534.05(a)(5), 25534.5 and 25535(a), Health and Safety Code.