



Implementation of California General Duty Clause, H&SC 25331.2(B)/Track A February 11, 2021



23rd California Unified Program Annual
Training Conference
February 2 – March 18, 2021

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Agenda

- **Background – General Duty Clause**
- **Learning from EPA GDC Implementation**
 - Introduction
 - General Duty Clause Obligations
 - Agency Evaluation of GDC Compliance
- **Concluding Remarks**

BACKGROUND

General Duty Clause



Poll Question #1 [MC]:

Are you familiar with or have you dealt with the Federal General Duty Clause (GDC) requirements or enforcements?

- a. Yes, I am very familiar
- b. No, not at all
- c. I have somewhat limited knowledge

Poll Question #2 [MC]:

Do you know about or are you familiar with the California General Duty Clause (GDC) requirements?

- a. Yes, I am very familiar
- b. No, not at all
- c. I have somewhat limited knowledge

Background (Past.....)

- CalARP Program FAQ document (Feb. 2014) in Cal OES website specifies that:
 - The Clean Air Act (CAA) general duty clause directs owners and operators of stationary sources to:
 - identify hazards that may result from accidental releases,
 - to design and maintain a safe facility, and
 - to minimize the consequences of releases when they occur.
 - The provisions of the general duty clause are enforced by **U.S.EPA ONLY**
 - Enforcement powers for this clause have not been delegated to the State or to the CUPAs
 - The State of California has no equivalent provision.

Source: <https://www.caloes.ca.gov/FireRescueSite/Documents/CalARP%20FAQ%20-%20Feb2014.pdf>

Background (Present.....)

- CalARP Program Guidance document (Revised May 2020) in Cal OES website specifies that
 - In 2015, the State adopted the Federal General Duty Clause, pursuant to California Health and Safety Code 25531.2(b).
 - The Legislature became effective in 2016.
 - The owners and operators of stationary sources producing, processing, handling, or storing hazardous materials have a general duty, in the same manner and to the same extent as is required by Section 654 of Title 29 of the United States Code:
 - **to identify hazards** that may result from releases using appropriate hazard assessment techniques,
 - **to design and maintain a safe facility**, taking those steps as are necessary to prevent releases, and
 - **to minimize the consequences of accidental releases** that do occur.

Source: <https://www.caloes.ca.gov/FireRescueSite/Documents/CalARP%20Guidance.pdf>

Background (29 U.S. Code § 654)

- 29 U.S. Code § 654. Duties of employers and employees
 - Each employer—
 - shall furnish to each of his employees employment and a place of employment which are **free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;**
 - shall comply with occupational safety and health standards promulgated under this chapter.

Background (Issues and Concerns)

- Stationary Sources/Facilities in California may be subject to Federal GDC enforced by EPA as well as State GDC enforced by CUPA
- GDC obligations are vague and not prescribed
- No guidance available for California H&S 25531.2(b) for CUPA or subject industries
 - Potential inconsistency of implementation or enforcement across the state
- Available reference documents at Cal OES website provide mixed messages
 - Creates confusion to agencies and industries
- **What are you to do as a responsible agency? Or as a subject facility?**

Poll Question #3 [SA]:

What would you name the title of the picture?

Title: “ _____ ”

Image (right) from:

<https://www.wormsandgermsblog.com/2009/10/articles/diseases/rabies/rabies-and-roadkill/>



Background (EPA Precedent)

- In the absence of specific guidance on implementation or enforcement of CA H&SC Section 25531.2(b), **it is important to recognize how Federal General Duty Clause (GDC) obligations have been historically implemented and enforced by U.S. EPA.**
- Prudent to follow the implementation approach of GDC by EPA as opposed to developing a separate program.
 - **CA adopted the Federal GDC**, pursuant to California Health and Safety Code 25531.2(b)
 - Viewed as adoption of GDC program in its entirety including purpose, interpretation, and implementation.
 - The general duty clause has been in effect and enforceable by EPA since November 15, 1990
 - 30+ years of history in GDC implementation and available written guidance resources

Poll Question #4 [MC]:

Fill in the blank:

The general duty clause reflects Congressional intent that _____ have the primary responsibility for the prevention of accidents.

- a. The state and local government
- b. Responsible agency
- c. U.S. government
- d. The owners and operators of stationary sources/facilities

LEARNING FROM EPA GDC IMPLEMENTATION

*EPA GUIDANCE FOR IMPLEMENTATION OF THE GENERAL DUTY CLAUSE CLEAN AIR
ACT SECTION 112(r)(1)
[EPA 550-B00-002, May 2000]*

Introduction



Introduction (1 of 3)

- In 1986, Congress enacted the Emergency Planning and Community Right-to-Know Act (EPCRA)
 - to require state and local governments **to prepare to respond to accidental chemical releases.**
- In 1990, Congress amended the Clean Air Act (CAA) and added Section 112(r).
 - Section 112(r) of the CAA requires that owners and operators of stationary sources **identify hazards, and prevent, and minimize the effects of accidental releases** whenever extremely hazardous substances are present at their facility.

Introduction (2 of 3)

➤ Specifically, Section 112(r)(1) states:

(r) Prevention of Accidental Releases

(1) Purpose and General Duty - It shall be the objective of the regulations and programs authorized under this subsection **to prevent the accidental release and to minimize the consequences** of any such release of any substance listed pursuant to paragraph (3) or any other extremely hazardous substance. The owners and operators of stationary sources producing, processing, handling or storing such substances have a general duty, in the same manner and to the same extent as section 654, title 29 of the United States Code, **to identify hazards** which may result from such releases using appropriate hazard assessment techniques, **to design and maintain a safe facility** taking such steps as are necessary **to prevent releases**, and **to minimize the consequences of accidental releases** which do occur.

Introduction (3 of 3)

- The general duty clause has been in effect and enforceable since November 15, 1990.
 - EPA has jurisdiction to implement and enforce through Sections 113 and 114 of the Clean Air Act
- The general duty clause applies to any facility where extremely hazardous substances are present.
- The general duty clause is a performance-based authority recognizing that **owners and operators have primary responsibility** in the prevention of chemical accidents.

Approaches towards Implementing GDC (1 of 2)

➤ Compliance Outreach

- Involves communicating hazards, lessons learned from accident investigations, prevention/mitigation information and enforcement actions to an industry sector through an open letter, an alert or other means to provide this information.

Approaches towards Implementing GDC (2 of 2)

- Technical Assistance
 - Involves helping owners and operators evaluate their hazard identification, prevention, and mitigation programs.
- Civil and Criminal Enforcement
 - Includes inspecting facilities to evaluate for compliance and/or to inspect facilities in order to identify deficiencies in the accidental release prevention and mitigation programs.

Facility/Industry Selection for GDC Implementation

- Responsible Agency has **options of approaches** and **flexibility** to determine where it is most appropriate to exercise general duty clause authority
- Agency personnel may consider the factors listed below
 - Stationary source has an accident (or a “near miss” that could have been an accident) that warrants an investigation
 - Stationary source appears on Agency databases for having repeated releases
 - Industry hazard identified after a similar source has had a major accident
 - Request from a state or local government official or other members of a community for assistance with a particular source
 - Request from a source for assistance regarding a particular hazard
 - Stationary sources with a significant quantity of an extremely hazardous chemical in close proximity to population centers or sensitive population (e.g. schools, hospitals, etc.)

Facility/Industry Sector Background Information

- Before a site visit, the inspector should gather information on the facility, which may include:
 - Type of process to be inspected
 - Chemicals that are part of the process
 - Hazards associated with the chemicals in the process (including accident history)
 - Potential for runaway reactivity/explosivity
 - Temperatures/pressure factors in the process
 - Possible critical contamination (e.g. water, metals) to the process
 - Industry practices to manage the hazards of the chemicals or this type of process

Poll Question #5 [MC]:

Which is a typical approach towards implementing the GDC?

- a. Enforcement
- b. Compliance outreach
- c. Technical Assistance
- d. All of the above

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ACT SECTION 112(r)(1)
[EPA 550-Boo-002, May 2000]*

General Duty Clause Obligations



Applicability

- The general duty clause applies to "owners and operators of stationary sources producing, processing, handling or storing any extremely hazardous substances."
- A stationary source with a specific extremely hazardous substances shall **not** be subject to GDC **if it is already subject to RMP** regulation.
 - **"Stationary source"** is defined in Section 112(r)(2)(C) as "any buildings, structures, equipment, installations or substance emitting stationary activities (i) which belong to the same industrial group, (ii) which are located on one or more contiguous properties, (iii) which are under the control of the same person (or persons under common control), and (iv) from which an accidental release may occur."
 - **"Accidental release"** is defined in Section 112(r)(2)(A) as "an unanticipated emission of a regulated substance or other extremely hazardous substance into the ambient air from a stationary source."²

Applicability (Continued)

- **"Extremely hazardous substances"** are not defined in Section 112(r). They are **not limited to** the list of regulated substances listed under Section 112(r) nor the extremely hazardous substances under EPCRA.
- **"[H]ave a general duty in the same manner and to the same extent as section 654, title 29 of the United States code"** means owners and operators must comply with the general duty clause in the same manner and the same extent as employers must comply with the Occupational Safety Health Act administered by OSHA.

Poll Question #6 [MC]:

A stationary source with which of the following substances would potentially trigger the general duty clause [Select One] ?

- a. Any extremely hazardous substance
- b. Only the regulated substances listed under Section 112(r)
- c. Only the extremely hazardous substances under EPCRA
- d. b and c only

Obligations under the General Duty Clause

- The general duty clause imposes the following primary obligations on the owners and operators of stationary sources.
 - I) **Identify hazards** which may result from accidental releases using appropriate hazard assessment techniques,
 - II) **Design and maintain a safe facility** taking such steps as are necessary to prevent releases, and
 - III) **Minimize the consequences of accidental releases** which do occur.

Obligations under the General Duty Clause (Continued)

➤ GDC obligations

- Each of these obligations **requires that a series of measures** be taken by the owners and operators, but the general duty clause **does not prescribe these measures**.
- Each measure should achieve a level of **quality, accuracy, and completeness** in order to prevent releases and to mitigate any actual releases.
- The general duty clause does **NOT** require:
 - The development of a list of chemicals subject to this requirement
 - The promulgation of regulations defining how to meet the general obligations established by the clause.

Obligations under the General Duty Clause (Continued)

➤ Agency actions:

- The Agency will look to hazards identified by the facility or industry rather than a specific list of chemicals.
- The Agency will look, in part, to industry practices and standards for addressing a hazard in determining how each regulated entity should comply with the general duty clause.
- The Agency must assess the extent to which owners and operators have implemented hazard assessment, design, process hazard analysis, maintenance, operation and mitigation measures that meet or exceed any applicable industry practices or standards, or state or federal regulations.

Obligations under the General Duty Clause (Continued)

- Owner/Operator responsibilities:
 - The owners and operators should operate the process/equipment in a safe manner (e.g., keep volumes, temperatures, pressures, flows, concentrations, pH within specified limits).
 - The owner or operator should comply with all applicable state and local regulations.
 - The owner or operator should be prepared to minimize the effects on the public and the environment if a release should occur by identifying at-risk receptors in the event of the maximum possible release and other probable releases as may be identified in the appropriate hazard analysis/review.
 - The mitigation activities should include coordination between facility management, employees and the local response agencies

Poll Question #7 [MC]:

When are General Duty Clause inspections by agency triggered?:

- a. When public or agency has a concern about the site based on equipment visual condition
- b. When there is a release or incident at facility not subject to RMP/CalARP
- c. When a facility is identified by Agency for RMP/CalARP inspection
- d. When there is an incident at facility triggering OSHA or CSB inspection
- e. All of the above

I. Identify Hazards

- The owners and operators are responsible for determining the intrinsic hazards of the chemicals used in the processes.
- Although the general duty clause does not specify how the owner/operator should identify hazards, the hazard assessment, when concluded, should result in the following information.
 - The hazards associated with the EHS and the process,
 - Potential release scenarios developed from site specific hazard analysis/review and facility/industry historical data and
 - The consequences of the release in each case.

I. Identify Hazards (Continued)

- A sufficient hazard assessment should include:
 - Type
 - Rate
 - Duration of potential releases
- Modeling or an applicable dispersion analytical technique should be used to determine the potential impact of the releases. Models or analytical techniques selected for this activity should be appropriate for the
 - Material released and the process
 - Atmospheric
 - Geographic conditions

I. Identify Hazards (Continued)

- The scenario identification methods used by industry typically fall into one of the following categories: **experience, analytical and creative.**
 - a. **Scenario Identification Method – Experience:** Collective experience is provided in safety newsletters, standard engineering designs based on records of earlier problems, and design codes produced collaboratively by users, suppliers and technical bodies

I. Identify Hazards (Continued)

- **b. Scenario Identification Method - Analytical:** In the chemical industry, the most common of the formal hazard analysis method is the Hazard and Operability (HAZOP) study. The HAZOP analysis uses guide words to assess how deviations of each element (vessel, pipe, valve, controller, and human) may result in an accidental release or other operational failures or inefficiencies.
- **c. Hazard Identification Method – Creative:** This method may allow the discovery of hazards that would not be identified in any of the more formal methodologies.

II. Design and Maintain a Safe Facility

➤ Design a Safe Facility

- **Codes:** The owners and operators should design the process and the hardware in order to minimize the risks of a release.
- **Chemicals:** The owners and operators should try to substitute less hazardous substances for extremely hazardous substances or minimize inventories when possible.
- **Equipment:** The owners and operators should implement a quality control program to ensure that components and materials meet design specifications and to construct the process equipment as designed.

II. Design and Maintain a Safe Facility (Continued)

➤ **Maintain a Safe Facility**

- **Standard Operating Procedures:** The owners and operators are responsible for ensuring that the process and equipment are operated within safe limits.
- **Training Programs:** The owners and operators should implement and evaluate programs for training employees on the hazards of the substances.
- **Managing Changes:** When changes in the processes are planned, the owners and operators should evaluate how those changes will affect the hazards identified in the PHAs.

II. Design and Maintain a Safe Facility (Continued)

➤ **Maintain a Safe Facility**

- **Incident Investigation Program:** When an incident occurs that results in a release or that could have escalated into a release, the owners and operators should investigate the cause of the incident/accident.
- **Self Audits:** The owners and operators should practice self auditing of the facility's prevention programs.
- **Preventive Maintenance Programs:** Maintenance requirements should have been identified in the design phase of a process.

III. Minimize Consequences of Accidental Releases

- **a. Planning**
 - Anticipation of the types of releases that may occur from the process.
 - Mitigation process.
 - Notification process to local responders.
 - Local responder involvement.
- **b. Coordination with Local Officials**
 - The facility should open communications with local emergency planning and response officials, including the local emergency planning committee (LEPC), if one exists.
- **c. Training**
 - All employees need to be trained on recognizing circumstances
- **d. Exercises**
 - The owners and operators should conduct periodic exercises to ensure that the plan is adequate to address the identified emergency scenarios.

Poll Question #8 [MC]:

A stationary source with which of the following substances would potentially trigger the general duty clause [Select One] ?

- a. Any extremely hazardous substance
- b. Only the regulated substances listed under Section 112(r)
- c. Only the extremely hazardous substances under EPCRA
- d. b and c only

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Agency Evaluation of GDC Compliance



Evaluating Compliance with the General Duty Clause

- When investigating possible violations of the general duty clause, Agency inspectors should seek answers to the following questions:
 - Has the owner or operator of the source complied with the following three elements of the general duty clause?
 - Did the owner or operator **identify all chemical and process hazards** associated with extremely hazardous substances?
 - Did the owner or operator **design and maintain a safe facility** taking necessary steps to prevent releases?
 - Did the owner or operator take necessary steps to **minimize the effects of releases**?

Hazard Identification Checklist

- Have the owners and operators completed **Process Hazards Analyses (PHA)** for each process involving extremely hazardous substances (EHSs)?
- Did the owners and operators use appropriate hazard assessment techniques?
- Are the PHAs complete, accurate, correct, and do they:
 - identify the intrinsic hazards of the substances and the processes?
 - identify the potential releases from the processes?
 - identify the potential impacts on the public and the environment?
 - Are these impacts realistic, accurate, correct?

Poll Question #9 [MC]:

What is the major difference between GDC PHAs and RMP/CalARP Program 3 PHAs? [Select One]:

- a. RMP/CalARP PHA needs to be appropriate to the complexity of the process and must identify, evaluate, and control the hazards involved in the process while they are NOT necessary for GDC PHAs
- b. At least every five years after the completion of the initial PHA, the PHA shall be updated and revalidated for RMP/CalARP; however, there is no such requirement for GDC PHAs.
- c. GDC PHAs must be conducted using What-If/Checklist or HAZOP only while RMP/CalARP PHAs can be done using any of the regulation approved methodologies
- d. b and c

Facility Design/Maintenance Checklist

➤ A. Design

- Are design documents for each EHS process correct, accurate, and current?
- Do designs minimize risks of releases based on PHA's?
- Evaluation of design documents:
 - ❖ *Are design codes used in the design identified and appropriate to the processes?*
 - ❖ *Was the facility constructed or modified according to design specifications?*
 - ❖ *Are there quality control procedures to ensure construction materials meet design specifications?*
 - ❖ *Do critical process components have redundant systems installed?*
 - ❖ *Has the facility design been updated to current codes and standards?*
 - ❖ *Are there remote monitoring and remote-control capabilities for dealing with upsets?*

Facility Design/Maintenance Checklist (Continued)

➤ B. Maintenance

- Are there preventive maintenance procedures to ensure the mechanical integrity of the process equipment?
- Do the maintenance procedures and preventive schedules follow generally accepted engineering practices?
- Are maintenance personnel trained on the intrinsic hazards of the chemicals, the processes, and in the maintenance procedures?
- Does training include understanding and proficiency evaluation?
- Is there a maintenance supplies and parts inventory that corresponds with maintenance schedules, especially for critical components that affect process safety?
- Is there a quality control program to ensure spare parts meet specifications, and is it implemented and working?
 - How has the facility minimized the possibility of an unauthorized entry?

Facility Design/Maintenance Checklist (Continued)

➤ C. Operations

- Are there Standard Operating Procedures (SOPs) for each process? Are the SOPs current?
- Do SOPs cover each phase of each process (startup, normal operations, shut down, emergency shut down)?
- Are SOPs clear, concise, correct, and written at the appropriate level of understanding for the operator?
- Do SOPs identify upper and lower limits for operating parameters like temperatures, pressures, flows, volumes, levels, pH, concentrations, etc.?
- Do limits for parameters agree with those identified in the PHAs?
- Are process equipment components such as valves, gauges, pumps, vessels clearly marked and do the labels match SOP nomenclature?
- Are SOPs revised periodically? Are SOPs revised after incidents or process changes?

Facility Design/Maintenance Checklist (Continued)

➤ D. Training

- Are employees trained and tested for competence on the safe operating procedures for the processes they operate?
- Is training adequate?
- Are employees trained on the intrinsic hazards of the substances and the process, and the consequences of deviation from the limits for process parameters?
- What is the frequency of the training?
- Are there communication procedures to ensure that instructions given are clear and understood correctly (i.e., “repeat back” the instructions)?
- Are employees trained to recognize emergency situations and are they authorized to take actions to prevent them or mitigate them?
- Does training reflect current operations?

Consequence Minimization Checklist

- Do the hazard assessments identify potential release scenarios and their potential impacts on the public and the environment?
- Is there an emergency response plan to respond to emergency situations based on the accidental release scenarios?
- Does the plan clearly identify responsibilities, functions, and contacts for emergency response?
- Does the plan include coordination with local emergency responders?
- Are employees trained on emergency response actions?
- Are routine exercises conducted to practice emergency response?
- Are employees trained to recognize emergency situations and are they empowered to take actions to prevent them or mitigate them?
- Is the plan revised as processes change?

Poll Question #10 [TF]:

If a Stationary Source with a Regulated Substance A is covered by the RMP/CalARP Program \pm requirements, the General Duty Clause obligation will not apply the Stationary Source:

- a. True
- b. False
- c. I don't Know

CONCLUDING REMARKS

General Duty Clause in California



General Duty Clause in California

- Enforceable by EPA (since 1990) – used to be the only enforcing agency for GDC per CAA Section 112(r)(1)
- Enforceable by CUPA (since 2016) – a separate & independent authority
 - 2015 amendment by the California legislature added a general duty provision similar to CAA Section 112(r)(1)
- Intent is to have the owners and operators of stationary sources and facilities primarily responsible for the prevention of accidents, requiring:
 - To identify hazards
 - To design and maintain a safe facility to prevent releases
 - To minimize the consequences of accidental releases

General Duty Clause in California

- No limit to type or amount of chemical and no prescribed requirements
- No publicly available guidance or clear approach towards implementation of California GDC per CA H&S Code 25531.2(b).
 - Concern of inconsistent implementation or enforcement of GDC throughout CA.
 - Creates confusion to agencies and industries
- It is important to recognize and benchmark how Federal GDC obligations have been historically implemented and enforced by U.S. EPA.
- **Follow EPA's roadmap and implementation approach!**



Any Questions?

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