

Section 112 (r)(1) The General Duty Clause "Under RMP"

Sandy Owens, CHMM, CSP

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What is the General Duty Clause?

In 1990, the Clean Air Act Amendments established **Section 112 (n)** which addresses the "Prevention of Accidental Releases"

112 (n) (1) includes "General Duty Clause" - GDC

112 (n) (7) required the establishment of the "RMP Rule" (40 CFR Part 68)

| Comparison of GDC and RMP | GDC | RMP |
|---------------------------|--|--|
| | • In place since 1990 | • Promulgated in 1996 |
| | • Applies to stationary sources | • Applies to stationary sources |
| | • Requires the management of Extremely Hazardous Substances (EHS), not limited to a specific list of chemicals | • Includes listed chemicals over threshold quantities in process |
| | • No quantity threshold | • Requires plan submission to EPA |
| | • Statutory duties | • Detailed regulations define requirements |

WHO?

Examples of GDC processes

- **Anhydrous ammonia** refrigeration process with system charge under 10,000 lbs (under the RMP threshold)
- **Chlorine gas** for water treatment (2-150 lb cylinders – under the RMP threshold)
- **Isopropyl alcohol** in process (flammable liquid not on RMP list)



WHO?

Examples of GDC processes

- **Hydrocarbon and Chemical Condensate** in frac flow back waters (exempt from CERCLA)
- **Butane/propane** for fueling forklifts (exempt from RMP)



Three Compliance Obligations under GDC



IDENTIFY HAZARDS USING APPROPRIATE HAZARD ASSESSMENT TECHNIQUES



DESIGN AND MAINTAIN A SAFE FACILITY



MINIMIZE CONSEQUENCES OF A RELEASE

1. Identify Hazards

Generally, a Process Hazard Analysis (PHA)

- Was an accepted method used?
- Is the content current?
- Are the process hazards addressed?
- Are incidents at other similar facilities considered?
- Are human factors and siting addressed?
- Does it identify potential impacts to the public and environment (off site consequences)

"WHAT IF...?"

A 2006 study by Table 11. We study facility incident reports in different kind groups including piping to leak, hot water, and corrosion.

Severity / Recommendation: 10000-100000 Non-Chemical/10000-100000 and 10000-100000 Non-Chemical/10000-100000

| Component | Failure Mode | Severity | Recommendation |
|----------------|--------------|--------------|---|
| Process piping | Leakage | 10000-100000 | 1. Inspect piping for leaks and corrosion |
| Process piping | Leakage | 10000-100000 | 2. Inspect piping for leaks and corrosion |
| Process piping | Leakage | 10000-100000 | 3. Inspect piping for leaks and corrosion |
| Process piping | Leakage | 10000-100000 | 4. Inspect piping for leaks and corrosion |
| Process piping | Leakage | 10000-100000 | 5. Inspect piping for leaks and corrosion |

2. Design and Maintain a Safe Facility

- Have relevant industry codes, practices or consensus standards been adopted?
- Is equipment, vessels, piping, etc. being inspected and maintained?
- Are specifications for equipment maintained?
- Are there written operating procedures?
- Have operators been trained?



3. Minimize Consequences of a Release

- Is there an emergency response/action plan in place?
- Does it include notification processes to local responders?
- Are training and drills conducted?
- Is there an incident investigation process?
- Which warning systems are in place?



Enforcement

- Maximum penalty \$37,500 per violation per day
- EPA's 2017 – 2019 National Enforcement Initiatives include the new initiative: "Reducing Risk of Accidental Releases at Industrial and Chemical Facilities"
- October 11, 2017 - *National Law Review* published an article entitled "EPA Region 1 Increasingly Targeting Ammonia Refrigeration Processes for RMP and General Duty Clause Enforcement"



EPA's National Enforcement Initiative: Reducing Risks of Accidental Releases at Industrial and Chemical Facilities

Goal

The goal of this initiative is to reduce the risk to human health and the environment by preventing chemical accidents. A successful initiative would reduce communities' risk by having regulated facilities and industry associations work to improve safety; increasing compliance with RMP and GDC requirements; and promoting coordination and communication with state and local responders and communities.

EPA's progress toward inspecting and addressing facilities

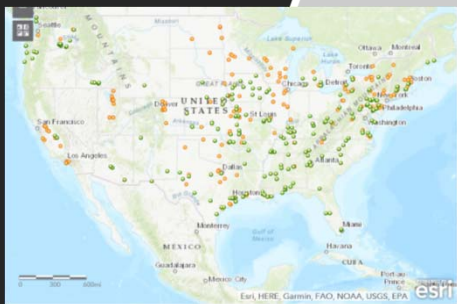
EPA's progress toward inspecting and addressing facilities that use extremely hazardous substances

Map of inspections and addressing actions at facilities that use extremely hazardous substances.

Related Information for the Ammonia Refrigeration Sector

- Compliance Assistance Tools And Resources For The Ammonia Refrigeration Sector. This document contains industry-specific information for the implementation of the Chemical Accident Risk Reduction (CARR) National Enforcement Initiative (NEI).
- Key Safety Standards for Ammonia Refrigeration. This document describes key safety measures that should be in place at any ammonia refrigeration facility.

National Enforcement Initiative



A Few General Example Violations....

Failure to:


- perform or update a hazard assessment
- install detectors, sensors, or alarms
- install, inspect, or replace pressure relief devices
- implement mechanical integrity program
- develop operating procedures

A Few General Example Violations....

Failure to:

- prepare an emergency response plan that includes procedures to alert neighboring businesses or residents
- coordinate response plan with local response agencies
- label piping
- comply with a specific code/standard or industry guideline

Case Example




Suiza Dairy, Puerto Rico

- Referred to DOJ: 2009
- Final order: 2/13/2013
- Chemicals: anhydrous ammonia
- Penalty: \$275,000
- SEP: \$3.02M
- Violations (for both 112(r)(1) and 112(r)(7)) at two facilities
- Release had occurred

* Source: EPA's ECHO Database
<https://echo.epa.gov>

Case Example




EI DUPONT de NEMOURS (West Virginia)

- Referred to DOJ: 2012
- Final order: 09/25/2015
- Chemicals: methanol, methylene chloride, phosgene and phosphoric acid
- Penalty: \$1,275,000
- SEP: None
- Violations involving 112(r)(1) as well as CERCLA and EPCRA
- Multiple releases had occurred

* Source: EPA's ECHO Database <https://echo.epa.gov>

Case Example



BP North America Settlement

- Related to 2005 explosion at Texas City in which 15 were killed and 170 injured
- Chemicals: flammable hydrocarbon liquids (incident related to isomerization unit explosion)
- Civil Penalty: \$15M (2010)

EPA identified numerous violations of the CAA Section 112(r) GDC and RMP, including:


- An inadequate pressure relief system
- Failure to adequately supervise and follow correct startup procedures
- Failure to address hazards associated with prior releases from the blowdown drum
- Failure to address hazards associated with the raffinate splitter due to a history of abnormal startups
- Starting up the raffinate splitter with known equipment malfunctions

Source: <https://www.epa.gov/region-5/press-releases/2010-09-21-epa-settles-15-million-civil-penalty-against-bp-north-america>

Key Takeaways

- Being UNDER the RMP TQ for a chemical does not mean a facility has NO obligation to be safe/protect the environment
- Chemicals/processes NOT listed under RMP can be *and are* subject to GDC
- It may be difficult to define what is required for a GDC facility in terms of compliance actions – pay attention to industry codes and standards
- GDC obligations can and are enforceable; disregard can lead to fines or worse – a catastrophic release/fatality

Safety Reminder:



“It does not do to leave a live dragon out of your calculations, if you live near him.”

– J. R. R. Tolkien, *The Hobbit*, Chapter XII

Questions?

Geosyntec
consultants

Sandy Owens, CHMM, CSP
Senior Scientist



900 Broken Sound Parkway NW, Suite 200
Boca Raton, Florida 33487
(561) 995-0900 - Office
(561) 922-1011 - Direct
(772) 521-1184 – Mobile

Section 112(r)(1) General Duty Clause Resources and Web Links AHMP National Conference, August 27, 2018

General Duty Clause Guide for Marcellus Shale Gas Drilling Facilities

<https://dep.wv.gov/daq/publicnoticeandcomment/Documents/EPA%20GDC%20guide%20unconventional%20drilling%2010%2011%20FINALdoc.pdf>

EPA's National Enforcement Initiative on Reducing Risks of Accidental Releases at Industrial and Chemical Facilities

<https://www.epa.gov/enforcement/national-enforcement-initiative-reducing-risks-accidental-releases-industrial-and-chemical-facilities>

Case Examples

BP North America:

<https://www.epa.gov/enforcement/bp-north-america-settlement#violations>

EPA's Fact Sheet on GDC

<https://www.epa.gov/sites/production/files/2013-10/documents/gdc-fact.pdf>

Guidance for Implementation of the GDC

<https://www.epa.gov/sites/production/files/documents/gendutyclause-rpt.pdf>

List of Compliance Assistance Tools – NH₃ Refrigeration

<https://www.epa.gov/sites/production/files/2017-11/documents/complianceassistance-ammoniarefrigerationsector0617.pdf>

NH₃ Refrigeration List of Key Safety Measures (EPA)

<https://www.epa.gov/sites/production/files/2018-05/documents/listofkeymeasurements.pdf>

Region III, GDC Inspection Checklist

<https://dep.wv.gov/daq/publicnoticeandcomment/Documents/EPA%20GDC%20inspection%20checklist.pdf>

Kevin Daniel, RMP Coordinator for EPA Region III, presentation on the "[Clean Air Act, General Duty Clause \(GDC\)](#)" at the October 9, 2014 WVDEP Oil and Gas Workshop

<https://dep.wv.gov/oil-and-gas/Resources/Documents/WVOilGasPresentation%20-%20EPA%20GDC%20Inspections.pdf>