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EPA SEEKS TO IMPROVE CHEMICAL PROCESS SAFETY AND EMERGENCY PLANNING

Trinity Consultants

EPA Proposes Changes to the Risk Management Program (40 CFR Part 68)

By **NATALIE VANLIEW, PE** , *Managing Consultant* —Kansas City, MO

On March 14, 2016, EPA published proposed Risk Management Program (RMP) rule revisions in 81 FR 13638. The proposed revisions are based on EPA's July 31, 2014 Request for Information (RFI) on RMP regulations in 40 CFR Part 68 (79 FR 44604), which was required by Executive Order (EO) 13650 issued on August 1, 2013, in response to catastrophic chemical facility incidents in the United States.

Key Changes

The proposed revisions add 10 definitions to section 40 CFR 68.3. While some definitions simply define generally understood acronyms, such as Confidential Business Information (CBI) and Local Emergency Planning Committee (LEPC), others impact the RMP program requirements and are described later in the relevant section below. The proposed revisions also modify recordkeeping provisions in 40 CFR 68.200 to require that records be kept at the stationary source for five years unless Level 2 site exemptions are met. Finally, multiple changes are required to the EPA RMP*eSubmit database in order to accommodate the proposed revisions.

Key proposed revisions are summarized below. In this article, RMP refers to the full Risk Management Program, while RMPlan refers to the RMP summary submitted via EPA's RMP*eSubmit tool.

Third-Party Audits (68.59/68.80) - NEW

The proposed revisions add requirements for a third-party audit, which would be defined as a compliance audit conducted pursuant to Subparts 68.59 and 68.80 by an entity (individual or firm) meeting the competency, independence, and impartiality criteria in those sections. A third-party audit would be triggered if a site has an accident that meets the five-year accident history criteria in 68.42(a) or if an implementing agency requires it. The implementing agency could request a third-party audit based on a site's non-compliance with the Subpart or a determination that a previous third-party audit failed to meet competency, independence, or impartiality criteria (Subpart 68.59/68.80). If a third-party audit is required, the audit and the final report must be completed by the sooner of 12 months from the five-year accident window, 12 months from the final agency determination, or three years from the site's last compliance audit. The proposed rule establishes an appeals process and timeline for third-party audits driven by agency request.

The proposed revisions regarding third-party audits establish requirements regarding the competency, independence and impartiality of the auditor and require the third-party auditor to have written policies and procedures to ensure compliance. The third-party audit report must include the identity of the lead auditor, audit team, and participants, as well as the auditor's qualifications. The report must document the auditor's evaluation of each covered process as well as the findings of the audit with respect to any compliance or performance deficiencies. Further, it is required that the owner or operator's comments regarding the draft be documented, as well as any adjustments made to the draft audit report by the auditor. Finally, the audit will require a specific certification statement by the auditor. Upon completion of the final audit report, the third-party auditor must submit the final audit report to the implementing agency at or before the time it is submitted to the owner/operator.

Other interesting provisions include that the draft reports must be submitted to the agency if requested and that no attorney-client or attorney work product privilege is allowed for the audit report or related records. Once the owner/operator receives the final audit report, they must provide a findings response report to the agency no later than 90 days after receipt of the final audit report, addressing each finding and providing a schedule for promptly addressing any deficiencies. The findings response report requires a company official certification statement. Subsequently, the site must document steps taken and completion dates to address any deficiencies and maintain those records for five years per 68.200.

Incident Investigation (68.60 / 68.81)

The proposed rule would synchronize the definition of a catastrophic release with the RMP reportable accident definition in Subpart 68.42 and add definitions of Root Cause.

- **Catastrophic Release** – major uncontrolled emission, fire, or explosion involving one or more regulated substances that results in:
  - Deaths, injuries, or significant property damage on-site
  - Known offsite deaths, injuries, evacuations, sheltering in place, property damage, or environmental damage
- **Root Cause** – fundamental, underlying, system-related reason why an incident occurred that identifies a correctable failure(s) in management systems

The incident investigation report requirements under the proposed revisions would be identical for Level 2 and 3 sites, triggered for Catastrophic Releases and near misses, and would now include the following:

- Date, time, location of incident
- Date investigation began
- Description of incident in chronological order, including all relevant facts
- Name and amount of chemical released and event duration
- Consequences to people and the environment
- Emergency response actions taken
- Initiating event, direct, and indirect contributing factors and root causes analysis (using a recognized method)
- Recommendations and schedule for addressing them

Table 1. Compliance Requirements and Hypothetical Timeline Under Proposed RMP Revisions

RMP Rule Provision	Details of Compliance Deadline (Shortest window applies)	Hypothetical Compliance Date
Public meeting	Within 30 days after accident	August 4, 2021
Incident investigations	Initiate within 48 hours, complete report and root cause analysis within 12 months	Complete report by July 5, 2022
Third-party audit	Within 12 months of accident OR three years of last compliance audit	July 5, 2022 (based off accident date)
Field exercise	At least every 5 years AND within one year of accident	July 5, 2022; evaluation report due within 90 days of exercise
Update RMPlan with accident information	• Correct RMPlan within six months • Complete new accident information at next RMPlan five-year update	January 5, 2022 (correct RMP) June 5, 2025 (report complete accident information)

For incidents meeting the five-year accident definition under Subpart 68.42(b), proposed updates to Subpart 68.195 would require that the categories of root causes identified in the incident investigation analysis be reported in the RMPlan within 12 months of the incident. The current five-year accident information must still be reported in the RMPlan within six months of the incident.

An RMP Reportable Accident under Subpart 68.42 triggers many new requirements, as summarized in Table 1 based on a hypothetical final rule effective date of June 5, 2017, an RMP Reportable accident date of July 5, 2021, a June 30, 2020 RMPlan update, and a last RMP compliance audit of April 6, 2020.

Safer Technology and Alternatives Analysis (STAA) – NEW

New definitions related to STAA include Feasible, ISTD, Active Measures, Passive Measures, and Procedural Measures.

- **Feasible** – capable of being successfully accomplished within a reasonable time, accounting for economic, environmental, legal, social, and technological factors. Environmental factors would include consideration of potential transferred risks for new risk reduction measures.
- **Inherently Safer Technology or Design** – risk management measures that *minimize* the use of regulated substances, *substitute* less hazardous substances, moderate the use of regulated substances, or *simplify* covered processes
- **Active Measures** – rely on mechanical, or other energy input to detect and respond to process deviations (alarms, safety instrumented systems, detection sensors)
- **Passive Measures** – use design features that reduce the hazard without human, mechanical, or other energy input (pressure vessel design, dikes, berms, blast walls)
- **Procedural Measures** – policies, operating procedures, training, administrative controls, and emergency response actions

For RMP Program Level 3 sites in NAICS codes 322 (Paper Manufacturing), 324 (Petroleum and Coal Products Manufacturing), and 325 (Chemical Manufacturing), the proposed rule revisions require that facilities conduct Safer Technology and Alternatives Analysis (STAA) as part of their Process Hazard Analysis review. STAA reviews require that the following design changes or safeguards be evaluated in the following order of preference (see also the Hierarchy of Controls figure):

- Inherently safer technology or design (ISTD)
- Passive measures
- Active measures
- Procedural measures

While the proposed rule does not require the implementation of ISTD, the owner or operator must document their evaluation of the feasibility of ISTD options that are identified in the STAA.

Table 2 outlines the STAA requirements that would apply for a hypothetical Level 3 Program in NAICS Code 322, 324, or 325 with a last PHA date of March 7, 2017, and a last RMPlan update of March 31, 2018, based on a hypothetical Final Rule Revisions effective date of June 5, 2017.

Emergency Response (68.90/68.95)

The proposed rule revisions modify the conditions in Subparts 68.90 and 68.95 for a facility to act as an RMP responding and non-responding facility. To be a non-responding site, the facility

Table 2. RMP STAA Requirements for a Hypothetical Level 3 Facility

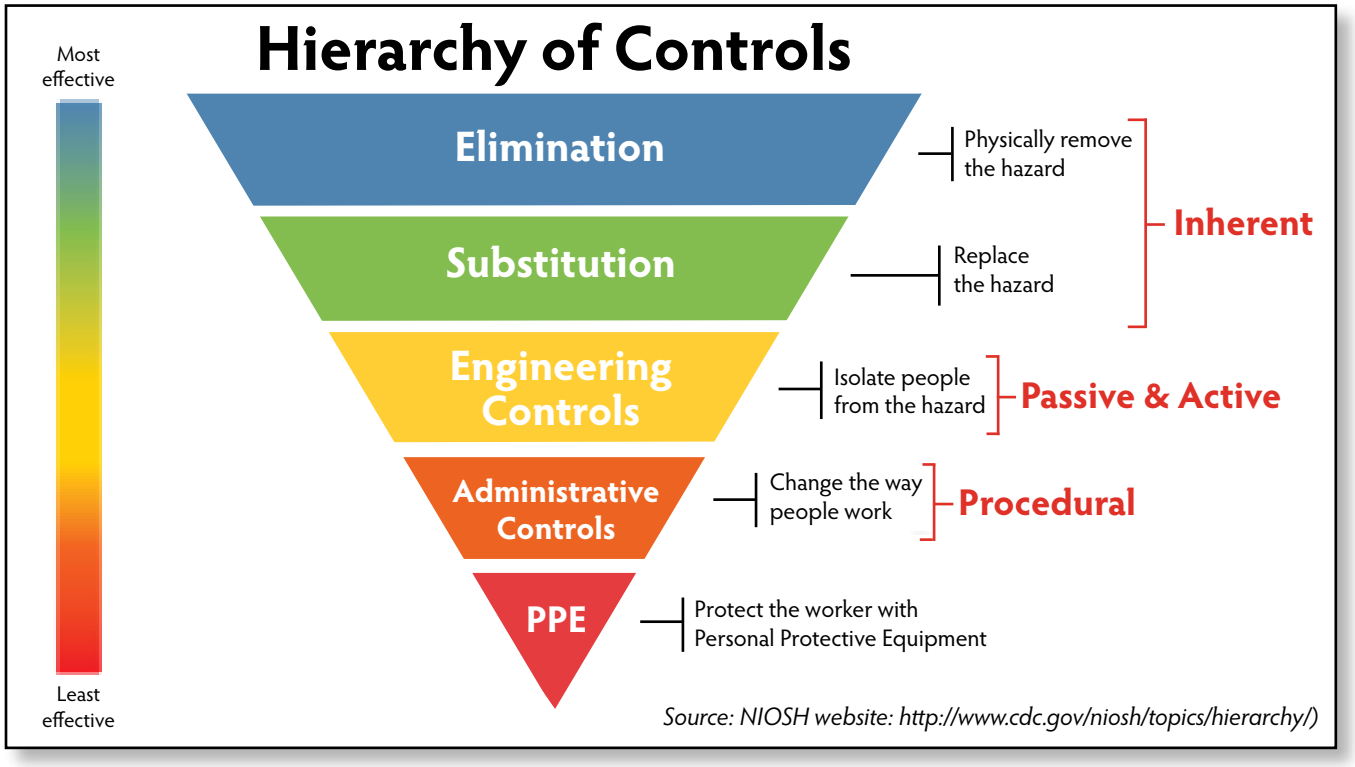
Applicable RMP Provisions	Timeframe	Additional Required Information	When to Complete
STAA	Four years after effective date	Every 5 years as part of PHA revalidation	By June 5, 2021
Information sharing with LEPC, upon request	Four years after effective date	Include information on ISTD to be implemented; update every 5 years	Develop in first calendar year after STAA completed or June 5, 2021, whichever is later; provide to LEPC upon their request
Update RMPlan	Five years after effective date		By June 5, 2022

must confirm that local public response capabilities are available to appropriately respond to a release from the source; however, the proposed rule does not clarify whether the scope of the response must include a worst-case release scenario or just a more likely alternate-release scenario. The revisions also authorize the LEPC to request in writing that a site be a responding facility and require that the facility act as a responding facility within three years of receiving that written request.

A facility would be required to be an RMP responding facility if coordination requirements (per a new emergency response coordination activities section, Subpart 68.93) demonstrate that local public response capabilities are not adequate to respond to regulated substance releases from the source, or that the LEPC or equivalent has requested in writing that the site be the responding facility. Responding facilities would be required to provide their procedures for informing the public and the appropriate federal, state, and local emergency response agencies about accidental releases in their Emergency Response Plan (ERP). In addition, the responding facility would be required to review and update the ERP at least annually to incorporate recommendations and lessons from their emergency response exercises and incident investigations.

Local Coordination Requirements (68.93) – NEW

Both responding and non-responding sites would be required to coordinate with local responders at least annually to address changes at the source and in the source's emergency action /



response plan, in local response capabilities, and in the local community response plan. Documentation of these coordination activities would be required. Facilities handling RMP toxic substances would involve their LEPC or equivalent. Facilities handling flammable substances would involve their local fire department(s).

Emergency Response Exercises (68.96) – NEW
This proposed new section establishes three types of emergency response exercises: notification, tabletop, and field exercises.

Notification exercises are required for all RMP Program Levels 2 & 3, and include an annual test of the emergency response notification mechanisms to ensure the contact information is accurate.

Tabletop and ***Field Exercises*** are required for RMP Program Levels 2 & 3 responding facilities. Facilities must coordinate with local public responders, invite them to these exercises, and complete a written evaluation report within 90 days of the exercise. That report must include a schedule for addressing recommendations provided in the report. Both field and tabletop exercises must include tests of notification procedures for public, government, and responding agencies; emergency response actions such as evacuation or medical treatment; coordination with local responders; and any other actions identified in the ERP.

Field and tabletop exercises must be conducted on the following schedule and include the following additional steps:

- **Field** – simulated release, at least every five years and within one year of an RMP Reportable accident; must include:
  - Tests of communications systems
  - Mobilization of facility emergency response personnel, including contractors
  - Tests of equipment deployment

- **Tabletop** – annually, except field exercise year, and must include:
  - Identification of facility emergency response personnel, including contractors and their responsibilities
  - Test procedures for equipment deployment

Information Availability

The proposed revisions add a new section pertaining only to information that must be made available to the LEPC and local emergency responders, and expand the existing section addressing information for the general public. In both cases, the proposed rule states that the disclosure of information classified by the Department of Defense (DOD) or other Federal agencies or contractors remains under control of those applicable laws, regulations, or executive orders. In addition, the rule requires a sanitized version to be provided if claiming CBI; however, the five-year accident history cannot be claimed as CBI.

LEPC and Local Emergency Responders (68.205) – NEW
Under this proposed new section, the information listed below must be updated annually and made available upon request to the LEPC and local emergency responders

- RMPlan (Subpart G)
- Chemical hazard information summaries
  - Names and quantities of regulated substances
  - 5-year accident (RMP reportable) history information
  - Compliance audit report summaries
  - Incident investigation report summaries
  - ISTD summaries for Level 3 NAICS 322, 324, & 325
  - Emergency response exercise schedules and reports

General Public (68.210)
The proposed revisions expand the information currently required to be made available to the public under Subpart 68.210. In addition, a new requirement in 68.210(d) triggers a public meeting to be held within 30 days of an RMP reportable accident, providing the 5-year accident history information and chemical hazard information at that meeting.

Under the proposed rule, the following information must be updated annually and be available to the public in an easily accessible manner such as a company website, public library, or government office:

- RMPlan (Subpart G)
- Chemical hazard information summaries
  - Names, quantities, and Safety Data Sheets of regulated substances
  - 5-year accident (RMP reportable) information
  - Emergency response status, coordinating LEPC, and procedures to notify the public about accidental releases
  - Emergency response exercise schedules and reports

Compliance Dates (68.10)

Table 3 projects the trigger dates for the proposed RMP rule revision requirements based on a hypothetical effective date of the final rule changes of June 5, 2017.

Table 3. Projected Final RMP Compliance Requirements

RMP Rule Provision	Proposed Compliance Date	Hypothetical Compliance Date	Initiated after RMP Reportable Accident?
Emergency response coordination activities	Within one year of effective date*	June 5, 2018	No
LEPC request to be responding facility	Within three years of receipt of written request	N/A	No
Emergency response exercises	Four years after effective date	June 5, 2021	Partially – field exercise within one year
STAA (Level 3, NAICS 322, 324, 325 only)	Four years after effective date	June 5, 2021	No
Third-party audit	Four years after effective date	June 5, 2021	Yes
Root cause analysis	Four years after effective date	June 5, 2021	Yes, also required after near misses
Information sharing LEPC and public	Four years after effective date	June 5, 2021	Partially – public meeting within 30 days
Update RMPlan for modified data requirements	Five years after effective date	June 5, 2022	Subpart 68.195 updates still apply within 6 months; root cause details within 12 months

**Proposed revisions state "within one year of [one year after the effective date of final rule]" but EPA guidance in preamble indicates it is within one year of effective date.*

What Isn't Addressed…Yet

Currently, the proposed rule does not revise the list of regulated substances (Subpart 68.130, Tables 1-4). The preamble calls specific attention to the fact that EPA is not presently proposing to add ammonium nitrate to the list of substances subject to RMP, but indicates that EPA may elect to propose such a listing at a later date.

The preamble also states that EPA is seeking comments on two other RMP RFI topics that have not been addressed in this round of the proposed rule, specifically whether rule-making or guidance should be established for (1) location of stationary sources and (2) emergency shutdown systems.

Next Steps in the Rulemaking Process

A public hearing was held March 29, 2016, in Washington D.C. The public notice comment period deadline is May 13, 2016. Comments on the information collection provisions are best assured of consideration if Office of Management and Budget (OMB) receives your comments on or before April 13, 2016.

Visit http://www.regulations.gov, and search for Docket # EPA-HQ-OEM-2015-0725 to submit comments. For assistance in providing comments either individually or as part of a group/trade association, contact Natalie VanLiew, PE, at nvanliew@trinityconsultants.com. ❖

Preparing for 2016 TSCA CDR Reporting

By **WES YOUNGER**, *Managing Consultant* —Atlanta, GA
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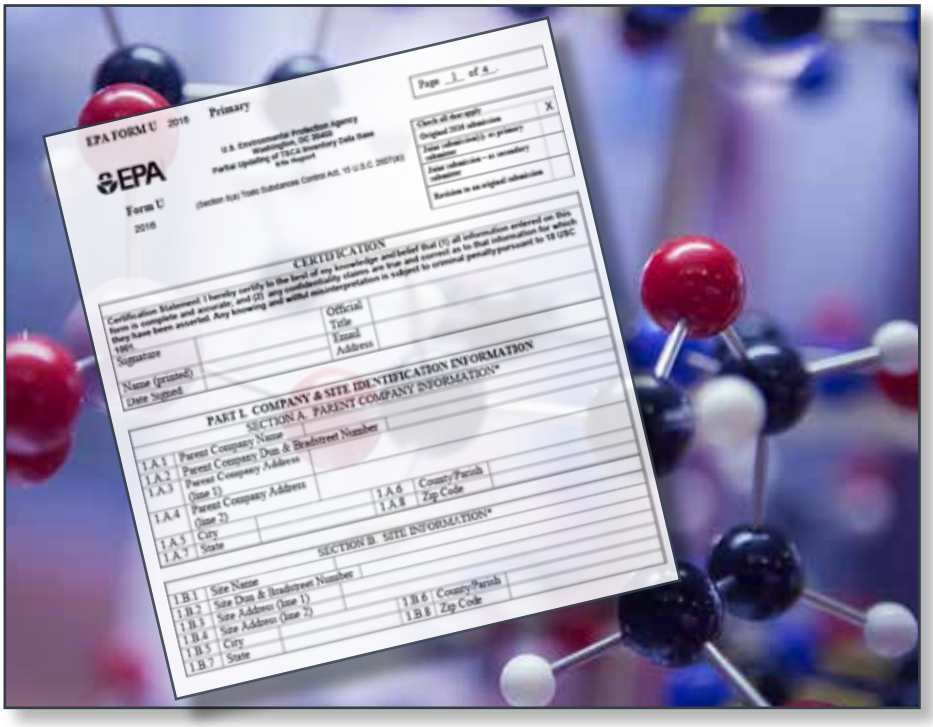
This year, environmental managers should be planning and budgeting for preparing their Chemical Data Reporting (CDR) submittals to the EPA, as required under the Federal Toxic Substances Control Act (TSCA). This reporting is now on a four-year cycle, replacing the previous Inventory Update Rule (IUR) requirements. The purpose of the CDR rule is to ensure that EPA is able to maintain a complete inventory of all chemical substances in commerce in the U.S., how those substances are used, and who is exposed to those substances so that it can make better decisions on what substances merit additional study for health or ecosystem risk assessment. For subject facilities, reports must be submitted between June 1 and September 30, 2016.



CDR Background

TSCA was originally enacted by Congress in 1976, and IUR data collection began in 1986. Reports were initially required from subject facilities every five years using EPA's Form U. The IUR rule has been amended several times since it was promulgated, most recently on August 16, 2011 (76 FR 50816). In addition to changing the name of the report to CDR, the August 2011 amendments made several revisions that primarily expanded the rule's applicability and the scope of information required to be reported to EPA. The current regulatory text for the CDR can be found at 40 CFR Part 711.

This report can be challenging for facilities to complete due to the infrequency of the reporting cycle. Because reports are required only every four years, much may have changed operationally since the previous submittal (including personnel responsible for completing the report) or have been forgotten. Furthermore, information may be newly required that has never been collected before. For these reasons, preparing for CDR reporting often takes longer than expected, with companies gathering information at the last minute once they realize what is needed. For all of these reasons, it is important to start early to understand applicability and to begin gathering the information needed for the report.

CDR Overview and Updates for 2016

In 2016, CDR reporting is required for any entity that introduced a chemical substance on the TSCA inventory into commerce in the U.S. in 2012–2015 by either manufacturing it (through a chemical change) or importing it from outside the U.S. In most cases, the threshold for triggering the reporting requirement is 25,000 pounds in any calendar year; lower thresholds may apply, however, for certain substances selected by EPA for additional scrutiny. Once reporting is triggered for a given substance, CDR reports must include the following:

- Information on the reporting entity (Part I of the Form U);
- Manufacturing or import volumes and chemical characteristics for 2012, 2013, 2014, and 2015 (Part II of the Form U); and
- Information on industrial, commercial, and consumer uses of the manufactured chemical substances for 2015 (Part III of the Form U).

This year's reporting could be more complex and in-depth than previous reporting cycles as a result of the August 16, 2011 amendments, which were phased in over the 2012 and 2016 reporting cycles. The 2011 amendments lowered the threshold to trigger reporting of data on the "downstream" users and uses of the substance (Part III of the Form U) from 100,000 pounds per year to 25,000 pounds per year. For 2016, if reporting is triggered for a chemical substance, all three parts of Form U must be completed (unless certain partial exemptions apply), with gathering and compiling information for Part III often taking much more time than needed for Parts I and II. The information required for Part III may not be readily accessible, and companies, in conjunction with their accounting and marketing departments, will need to expend additional effort to gather the required data. It is also possible that outreach to customers may be required in order to collect information on the end use of these products.

Other updates phased in with the 2012 reporting cycle that continue to apply for 2016 reports are listed below.

- Electronic reporting through the Central Data Exchange (CDX) using the e-CDRweb program is required. Paper submittals are no longer accepted.

- The reporting standard for CDR is information that is "known to or reasonably ascertainable by" (KRA), rather than the previous standard of "readily obtainable." KRA is defined in 40 CFR 704.3 as all information in a person's possession or control, plus all information that a reasonable person similarly situated might be expected to possess, control, or know. Companies can report data elements in CDR as "not known or reasonably ascertainable" (NKRA), but should understand the definition of KRA when doing so.

- Requirements for claiming data elements are Confidential Business Information (CBI) have changed. A company may assert a CBI claim only for information that is not publicly available. For each data element claimed as CBI, Form U must be submitted with detailed written answers to specific questions in order to substantiate the claim's compliance with regulations on public availability of environmental information. Additionally, the answers must be specifically certified by the authorized official.

Successful CDR Reporting

Due to the complexities associated with TSCA CDR applicability determinations, information gathering, and report preparation and submittal, environmental managers may benefit from the following list of suggestions to ensure successful completion of their CDR report.

- **Start early, even if you have prepared TSCA CDR reports before.** Changes to operations and regulatory requirements could mean that reporting may be required for additional chemical substances, and information not asked for during previous reporting cycles could be required in 2016. Applicability determinations can be made and required data elements can be gathered prior to the beginning of the reporting period.

- **Take a systematic approach.** First, map out substances to be evaluated for reporting applicability, then evaluate each substance, comparing with exemptions and documenting the thought process on each. Next, gather information for the list of substances to be reported. (Finding the right person to provide the information needed might take more time than expected, and that person will have their own schedule constraints that may conflict with unexpected requests for data to be used in environmental reports.) Finally, prepare and submit the reports.

CDR reporting requirements cover substances imported to the United States in addition to those manufactured in the United States.

- **Use the correct chemical name and Chemical Abstract Service Registry Number (CAS RN) when determining applicability.** The list of chemical substances on the TSCA inventory is extensive—nearly 85,000 chemicals are listed. However, determining whether a substance that is manufactured is on this list can be complicated by the use of synonyms or industry-specific terms for chemical substances. Identification of the TSCA inventory status for chemical substances can be aided through the use of EPA's Substance Registry Services (SRS) website.[1]

- **Consider byproducts, waste products, and process/reaction intermediates.** Reporting applicability for TSCA CDR includes chemical substances that are manufactured for commercial purposes as defined in 40 CFR 711.3. The term "manufacture for commercial purposes" found in 40 CFR 704.3 includes chemical substances used as intermediates at the site at which they are manufactured and also applies to chemical substances produced coincidentally, including byproducts. A key consideration for such chemical substances is whether they provide an immediate or eventual commercial advantage for the manufacturer. If a commercial advantage results, chemical substances—including those commonly thought of as wastes—should be considered to be manufactured for the purpose of TSCA CDR.

- **Check for exemptions or partial exemptions.** TSCA CDR contains a variety of exemptions and partial exemptions from reporting. These include exemptions for small manufacturers, imported chemical substances in article form, chemical substances manufactured in small quantities for research and development, polymers, water, naturally occurring substances, microorganisms, certain forms of natural gas, and several others. Awareness of possible exemptions can allow companies to avoid the time and effort associated with gathering information for chemical substances that could be exempt or partially exempt from reporting requirements. However, the scope and applicability of these exemptions may be more complex than suggested by the summary headline for each and may require some research and review of EPA guidance documents.

- **Get help if needed.** EPA has many resources available on its TSCA CDR website[2], including a TSCA Hotline for posing questions via telephone or email. Additionally, consultants can help answer questions or provide a wider range of experience or a more strategic approach to CDR reporting than can be offered through EPA's resources, especially later in the reporting season when EPA's resources tend to be overloaded and the agency is unable to provide timely responses.

TSCA CDR reporting can be an involved and detail-oriented process. With early planning, use of a systematic approach, and thorough documentation, companies can comply with the reporting requirements in 2016 and lay the groundwork for a smoother and more efficient process in 2020 and subsequent years. ❖

[1] http://ofmpub.epa.gov/sor_internet/registry/substreg/home/overview/home.do
[2] http://www.epa.gov/chemical-data-reporting

UNDERSTANDING NORTH AMERICAN REGULATORY REQUIREMENTS FOR VEHICLES, EQUIPMENT, AND ENGINES

Manufacturers of on- and off-road vehicles, off-road equipment, and engines intended for use in such vehicles or equipment seeking to market in North America must comply with complex regulatory requirements enforced by government agencies including the U.S. Environment Protection Agency (EPA), the California Air Resources Board (CARB), and Environment Canada (EC). In general, only vehicles, equipment, and engines that have received emissions certification from the appropriate agencies pursuant to these regulations may enter the North American market, although certain exclusions, exemptions and "flexibility" provisions are available.

In order to receive certification, manufacturers or importers must perform emissions testing using facilities, equipment, and testing procedures that strictly conform with regulatory requirements. In addition, manufacturers and importers must submit extensive documentation regarding the design and operation of their products to these government agencies, ensure proper labeling, provide warranties for emission control systems and related parts, monitor their products for defects, and comply with extensive reporting requirements.

It is also important to understand that modifications to certified vehicles, equipment, and engines including the installation of replacement engines that differ from the original engines, and the installation of "aftermarket" or "performance" parts that can affect emissions are generally prohibited unless they have been approved in advance by the appropriate regulatory agencies.

Sierra Research, a Trinity Consultants company with offices in Sacramento, CA and Ann Arbor, MI, has extensive experience assisting vehicle, equipment, and engine manufacturers and importers with associated regulatory requirements. For more information, contact Jim Lyons at jlyons@sierraresearch.com. ❖

NSPS Subpart OOOOa – EPA Proposes More Challenges for the Oil & Gas Industry

By **N. JARRETT AIRHART,** *Principal Consultant* —Albuquerque, NM

What began in 2009 as a court-ordered review of New Source Performance Standards (NSPS) continues to bring more attention and rulemakings for the oil and natural gas industry. Originally published by the U.S. Environmental Protection Agency (EPA) in 2012, NSPS OOOO has been updated four times prior to the current proposal announced on August 18, 2015, and renamed NSPS Subpart OOOOa. The proposed rule adds several significant requirements to the original 2012 rule:

- Including more facilities and equipment that were not previously affected by the rule
- Adding methane as a regulated pollutant
- Adding fugitive gas monitoring requirements

Although the rule has not been finalized, it will affect facilities that were constructed, modified, or reconstructed after September 18, 2015. As with other recent NSPS rulemakings, this interim period between the proposed rule and the publication of the final rule raises questions as to how facilities that are potentially affected should be managed in the meantime. Starting upstream and moving down the pipeline through the gas transmission sector, a number of existing sources and previously excluded equipment could be affected by the proposed rule.

Upstream

EPA is bringing oil well production, pneumatic pumps, and previously excluded tank batteries under the NSPS regulatory umbrella. Previously, only wells completed for the principal production of natural gas were required to notify, track, report, and control VOC emissions following hydraulic fracturing and during completion. After September 18, 2015 (upon finalization of the rule), any oil well with a gas to oil (GOR) ratio over 300 scf/bbl will be considered an affected facility and will require the same notification, tracking, reporting, flaring, and completion requirements previously required of its natural gas counterpart.

Following well completions, EPA is proposing standards to further regulate fugitive methane and VOC emissions from new and modified oil and natural gas production well sites. As defined in the rule, a well site could include such items as separators, storage vessels, heaters, dehydrators, or other equipment at any site *"directly disturbed during the drilling and*

Starting upstream and moving down the pipeline through the gas transmission sector, a number of existing sources and previously excluded equipment could be affected by the proposed rule.



subsequent operation of, or affected by, production facilities directly associated with any oil well, gas well, or injection well and its associated well pad." [1] Although EPA has been careful to limit NSPS OOOOa applicability to only the fugitive monitoring portion of the rule, as proposed, any hydraulic fracturing and subsequent production would be considered a modification to a "well site." This would include previously excluded facilities, such as tank batteries, associated with the well completions under the fugitive monitoring requirements of the rule.

EPA has also proposed adding pneumatic pumps to the list of regulated equipment. Although these could be located anywhere along the pipeline, subjecting them to regulation may have the most impact on upstream facilities where electricity may be unavailable and pumps may be natural gas driven. EPA is proposing that emissions from these pumps be 95% controlled assuming a control device already exists on site (except at gas plants, where 100% control is expected).

Midstream and Transmission

Similar to upstream requirements, at compressor stations EPA is proposing standards to regulate fugitive methane and VOC emissions from new and modified natural gas compressor stations that will bring many previously excluded sources under OOOOa fugitive monitoring. For example, EPA states that *"for purposes of the proposed standards for fugitive emission at compressor stations, we propose that a modification occurs only when a compressor is added to the compressor station or when physical change is made to an existing compressor at a compressor station that increases the compression capacity of the compressor station."* Thus, once OOOOa is final, any change to previously excluded compressors that increases compression could be considered a modification and bring all associated components, including associated piping, condensate tanks, and connections, under fugitive monitoring requirements. Compared to previous OOOO requirements, this rule promises to increase fugitive monitoring requirements for compression operations throughout the oil and natural gas industry, including the transmission sector.

Conclusion

Although EPA was expedient in finalizing past changes to the rule, in this go-round it has extended comment periods and the final rule is not expected until June 2016. While the extensions have provided ample opportunity to thoroughly review the proposed rule and provide comment, it could also indicate that the final rule will differ significantly from the one currently proposed, potentially posing new compliance challenges for any affected facilities installed, modified, or reconstructed after September 18, 2015. ❖

[1] https://www3.epa.gov/airquality/oilandgas/actions.html

Addressing Odor Complaints

While odor issues are often addressed on a case-by-case basis when nuisances occur, state laws and local ordinances are increasingly adopting specific odor guidelines and criteria. Some jurisdictions have even established specific odor testing protocols and air dispersion modeling practices tailored specifically for odor. Hence, odor measurement, modeling, minimization, and management is becoming more critical for industry.

Many jurisdictions in North America define odor criteria using a relative-strength scale in terms of "odor units," or simply, OU. As a reference, 1-odor unit (or 1-OU) represents the diluted level where 50% of the population can begin to detect an odor. For example, if an established odor criteria was 7-OU, then the odors present in the air would be at a strength that would require 7 dilutions with 'clean' air to meet the threshold where half the population could no longer smell the odor.

Odor is inherently complex and difficult to quantify because it is often caused by a mixture of chemical substances. Odor is also quite subjective by its nature and can affect individuals differently. Therefore, odor assessments typically employ FIDOL observations to further characterize impacts.

Frequency - how often the odor impacts occur
Intensity – the relative odor strength (faint to overwhelming)
Duration – the length for time for a given odor event
Offensiveness - the character or description of the odor
Location – mapping impact location and identifying potential off-property contributing sources

Trinity conducts ambient field studies using olfactometers using pre-screened, certified assessors. (Pre-screened assessors fall into a specific range of odor tolerance to ensure assessors are not overly sensitive or insensitive to odor.) We also use atmospheric dispersion models such as AERMOD for assessing odor impacts and compliance at sensitive points of reception. Odor modeling assessment typically employ a source testing component to quantify odors directly at the source. Samples collected at the source are sent to a certified odor panel for analysis.

For assistance with odor analysis, please contact Chris Scullion at cscullion@trinityconsultants.com. ❖

SEE YOU THERE!

Meet local Trinity team members at these upcoming conferences and tradeshows.

AIChE 12th Global Congress on Process Safety 2016
Apr 10-14, 2016 | Houston, TX

Guideline on Air Quality Models: The New Path 2016
Apr12-14, 2016 | Chapel Hill, NC

Pennsylvania Chamber's 2016 Annual Environmental & Energy Conference and Tradeshow
Apr 13, 2016 | Lancaster, PA

Iowa-Illinois Safety Council 60th Annual Professional Development Conference & Expo 2016
Apr 13-16, 2016 | Cedar Rapids, IA

TDEC's 43rd Annual Environmental Show of the South 2016
Apr 20-22 | Gaitlinburg, TN

Chemistry Council of New Jersey's 32nd Annual Spring Conference 2016
May 2-3, 2016 | Galloway, NJ

TCEQ Environmental Trade Fair and Conference 2016
May 3-4, 2016 | Austin, TX

16th ISA LDAR Fugitive Emission Symposium
May 16-19, 2016 | Denver, CO

Bettering Environmental Stewardship & Technology (BEST) 2016
May 25-27, 2016 | Whistler, BC Canada

Air & Waste Management Association (A&WMA) Annual Conference & Exhibition 2016
June 20-23, 2016 | New Orleans, LA

Canadian Water Firm Minnow Environmental Joins Trinity Consultants

In July 2015, Trinity expanded its Canadian operations with the acquisition of Minnow Environmental, an environmental consulting firm specializing in aquatic biology, with offices in Ontario and British Columbia. The transaction is Trinity's second in Canada, following the 2013 acquisition of Church and Trought, Inc., a multi-disciplinary environmental consulting firm in Toronto.

Founded in 2000, Minnow Environmental specializes in aquatic ecology, fisheries biology, benthic invertebrate ecology, water and sediment quality, toxicology, environmental behavior, physical limnology, environmental chemistry and the modeling of chemical transport and fate in aquatic environments. Clients include major industrial companies throughout Canada, primarily in the mining industry.

According to Mike Remsberg, Trinity Managing Director, "Although Minnow provides specialty services that differ from Trinity's traditional air focus, the company is so similar to Trinity with respect to culture and customer base that we found it to be a wonderful strategic match. Minnow has a stellar reputation in Canada, providing highly technical scientific services to the mining industry, and Trinity is able to support management's growth objectives."

Cynthia Russel (pictured above), Minnow founder, commented on the experience. "Although we received interest from larger suitors, we eventually chose to partner with Trinity because we found it best complemented our business philosophy. Since the merger, we have continued to find great support from the Trinity team and are exploring opportunities for synergies between Minnow and the broader Trinity Team. It continues to be a pleasure working as part of the Trinity group of companies." ❖

minnow
environmental inc.
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Fundamentals of Air Dispersion Modeling $999
Apr 12-13, 2016 Minneapolis, MN

Introduction to Emergency Planning & Community Right to Know (EPCRA) $499
Apr 12, 2016 Chicago, IL

NSR/PSD Compliance Workshop $999
Apr 12-13, 2016 Seattle, WA

AERMOD Modeling Computer Lab $1,199
Apr 14-15, 2016 Minneapolis, MN

Benzene Waste Operations NESHAP $499
Apr 14, 2016 New Orleans, LA

Title V Compliance Workshop $599
Apr 14, 2016 Seattle, WA

Clean Air Act Workshop for the Mining Industry $350
Apr 21, 2016 Salt Lake City, UT

Air Compliance Auditing for Industrial Facilities $599
Apr 26, 2016 Phoenix, AZ

Introduction to ISO 45001 Health & Safety - OHSAS 18001 Replacement Standard $499
Apr 27, 2016 Atlanta, GA

Introduction to Environmental Regulations $749
May 3-4, 2016 St. Louis, MO

NESHAP for Miscellaneous Organic Chemical Manufacturing (The MON) $499
May 3, 2016 Chicago, IL

Clean Air Act Workshop for Synthetic Organic Chemical Manufacturing Industry (SOCMI) Facilities $499
May 4, 2016 Chicago, IL

Fundamentals of Odor: Measurements, Modeling, and Minimization $499
May 4, 2016 New Orleans, LA

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STATE COURSES

Air Quality Permitting $449
Apr 12, 2016 Albuquerque, NM
Apr 12, 2016 Salt Lake City, UT
Apr 14, 2016 Miami, FL
Apr 21, 2016 Phoenix, AZ
Apr 21, 2016 Fresno, CA
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Apr 28, 2016 Pittsburgh, PA
Apr 28, 2016 Billings, MT
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