Analysis of EPA's Safer Communities by Chemical Accident Prevention (SCCAP) Risk Management Program (RMP) Final Rule 40 CFR Part 68 (Published 3/11/24)

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Executive Summary

On March 11, 2024, the U.S. Environmental Protection Agency (EPA) published the much-anticipated Safer Communities by Chemical Accident Prevention Rule (SCCAP) Final Rule, an update to EPA's Risk Management Program (RMP) 40 CFR Part 68, under the Clean Air Act Amendments of 1990 (CAA). This is the first substantial change to the rule since its inception in 1996.

AcuTech has summarized key points of the rule that industry must be aware of to plan for compliance. Several new requirements will have a substantial potential impact on the regulated community, particularly those in certain chemical and petroleum refining industries. In all, EPA estimates that nearly 12,000 RMP registered stationary sources are in the United States.

The most impactful changes to the rule and its enforcement include the following:

Increased Enforcement Efforts

- Greater enforcement efforts under its National Enforcement and Compliance Initiative are expected with new requirements that, in some cases, differ from the OSHA Process Safety Management standard 29 CFR 1910.119.
- EPA has already used the requirements of the revised RMP rule in specific cases for negotiated consent decrees, under Section 112(r), even before publishing the rule.

Hazards Analysis and Risk Reduction

- First ever EPA obligations to conduct assessments of the "practicality" of implementing inherently safer design or technology for certain stationary sources (referred to as "Safer Technology Alternatives Analysis (STAA))", required when a site is:
    - in NAICS 324 (Petroleum Refining and Coal Products) or NAICS 325 (Chemical Manufacturing), in near vicinity of other EPA RMP stationary sources (within 1 mile), if there are incidents that are reportable under the EPA RMP definitions, or if they use hydrofluoric acid in their refinery alkylation units.
- Documentation of the impracticality of any ISD/IST not implemented. These studies may set up documented potential applications of IST/ISD that may not be implemented for various practical reasons. Industry must then be certain to incorporate other barriers under the priority of the 'hierarchy of controls' of passive, active, and administrative if not.
- Demands to document consideration of natural hazards in hazards analysis studies (implying improved preparedness for such events).
- EPA added language to the Subpart G of the Rule that required the submitted RMPs include recommendations declined from safety gaps between codes, standards, or practices to which the process was designed and constructed and the most current version of applicable codes, standards, or practices.

- Greater emphasis on emergency response planning and coordination with first responders.
- For the first time, EPA (or any other federal, state, or local process safety regulator) is requiring mandatory risk reduction measures be implemented as part of the STAA process.

Risk Communications, Employee and Public Involvement, and Transparency

- Increased need for public risk communications since public access to RMPlan will be more accessible with the release of an online query tool. Beyond just residents near the facility, EPA mandated that those who reside, work, or otherwise spend significant time within a six-mile radius of a covered facility are subject to access information on their accident history, emergency response program, and any RMP recommendations not adopted. This provision of the new RMP Rule contradicts the sensitivity of the security of the process safety community since the events on 9/11.
- Participation plans must be developed for informing employees on findings and recommendations from process hazards analysis (PHA) studies, compliance audits, and accident investigations. Covered facilities will also need to engage employees in RMP activities.
- Allowance for employees to anonymously report noncompliance issues and RMP-releases.
- Necessity for board-level reporting, bringing risk management planning to the corporate reporting level.

Third Party Audits

- Requirement for some sites to use third-party auditors for the tri-annual compliance audit may result in new and unexpected opinions on compliance that will need to be managed, especially for those sites where self-auditing was the norm, particularly the accommodation of dissenting opinions among auditors.

Stationary Source Siting

- The hazard evaluations conducted during the PHA element explicitly define stationary source siting as inclusive of the placement of processes, equipment, buildings within the facility, and hazards posed by proximate facilities, and accidental release consequences posed by proximity to the public and public receptors. EPA did not define the analytical methods or techniques to be used to determine the consequences. Many facility siting studies are focused only on onsite impacts.

Key Points

The potential impacts to the general EPA RMP regulated community is very significant, but even more so for those sites with specific chemicals of focus to EPA. Key areas to prepare, based on AcuTech's opinion of the order of priority, include the following new and potentially involved required efforts:

1. **Hazards Analysis and Risk Reduction**

    - Learning to conduct and justify decisions for Safer Technology Alternatives Analysis (STAA)) if applicable.
    - Will require training, development of a methodology, and efforts to review PHA studies for additional ISD/IST safeguards.
    - STAA consideration but then denial may lead to significant liabilities if not well justified.
    - Also, efforts for reconsideration of the need for additional safeguards under of the 'hierarchy of controls' of passive, active, and administrative if not, and implementation of those new recommendations if required.
    - RMPlans must include recommendations declined from safety gaps between codes, standards, or practices to which the process was designed and constructed and the most current version of applicable codes, standards, or practices. The final rule does not specify how the analysis is to be done, under what RMP program element it is performed, nor how the gap analysis is to be documented. This requirement cannot be complied with without first performing a RAGAGEP analysis.

2. **Third Party Audits**

    - Both the cost and implications of the viewpoints of third-party auditors for the tri-annual compliance audit.

3. **Natural Hazards**

    - Demands to document consideration of natural hazards in hazards analysis studies, possibility of needing improvements or modifications in operations to justify preparedness for such events.

4. **Public Inquiries and Actions**

    - The increased access to information and demands to requirements to provide data on demand may be time consuming and potential will provoke questions and the need for justification.
    - Potential for legal actions from local or other groups targeting the site, company, or industry.

5. **Emergency Response Activity**

    - Greater emphasis on emergency response planning and coordination with first responders.

Who will be Targeted for Enforcement by EPA?

Increased enforcement efforts are expected with a focus on the revised requirements as applicable. AcuTech expects that those sites with the following situations may be targeted:

- Petroleum refiners with HF alkylation units.
- NAICS 324/325 sites in areas subject to natural hazards that may impact RMP regulated chemicals.
- Sites with large offsite consequences, especially where there are neighboring RMP sites possibly with overlapping worst case scenarios and larger populations within their worst-case scenarios reported under their offsite consequences analysis.
- Sites that have major incidents which affect the public (or many RMP reportable incidents even if they do not impact the public).

AcuTech suspects that EPA will focus on the EPA RMP Offsite Consequence Assessment Worst Case Scenarios and Alternative Release Scenarios for risk reduction, especially from the STAA requirements, facility siting, and for emergency response planning.

Introduction

The EPA issued a final revised RMP Rule on March 11, 2024. This is the last revision of the RMP Rule among several that have occurred in the last 5 years. To help avoid confusion, a brief summary of these various final and proposed RMP Rules, along with the names they have assigned by EPA in the new final RMP Rule is as follows:

- The original RMP Rule, adopted in 1996 and became effective in 1999, named the "1996 RMP Rule."
- The revised and final RMP Rule, adopted on January 13, 2017, named the "2017 Amendments RMP Rule."
- The revised and final RMP Rule, adopted on December 19, 2019, named the "2019 Reconsideration RMP Rule."
- The proposed RMP Rule, pre-published on August 8, 2022, named the "Safer Communities by Chemical Accident Prevention RMP Rule" or "SCCAP RMP Rule." EPA has used the same name for the final new RMP Rule, but to avoid confusion in this paper where SCCAP RMP Rule is used it refers to the proposed August 2022 version and not the final RMP Rule published in March 2024.

Between these various rule issuances there were numerous delays, stays, and court challenges (some court rulings have not been finalized yet). Now that it is adopted, the SCCAP RMP Revised Rule will essentially revert to the contents of the 2017 Amendments Rule, with a few differences. The main impetus for issuing the SCCAP RMP Rule was Executive Order EO 13990, entitled "Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis." A summary of the provisions of the Final RMP Rule is provided below, along with AcuTech's explanation of the projected impacts of the final changes on RMP programs (and PSM programs where it is anticipated that both process safety regulatory programs will be affected).

The RMP Rule is administered by the EPA. However, states and other governmental entities can apply to federal EPA for implementing agency status. The RMP implementing agency is the governmental agency responsible for enforcing the RMP Rule in each state. There are currently nine states and five counties in the U.S. that have been granted implementing agency status by EPA: New Jersey, Delaware, Mississippi, Florida, Georgia, North Dakota, North Carolina, Ohio, South Carolina, Allegheny County, PA (Pittsburgh); Jefferson County, KY (Louisville); Forsyth County, NC (Winston-Salem); Mecklenburg County, NC (Charlotte); and Buncombe County, NC (Asheville). In the remainder of the U.S. the implementing agency is the USEPA.

The following descriptions and explanations of the provisions of the Final RMP Rule are limited to those for RMP Program 3 processes. Similar provisions have been adopted for Program 2 processes.

Revisions to RMP Elements in the Final RMP Rule

Natural Hazards

EPA is requiring hazard evaluations for Program 2 and Program 3, i.e., hazard reviews for Program 2 processes and process hazard analyses (PHA) for Program 3 processes, to explicitly address external events such as natural hazards, including those caused by climate change or other triggering events that could lead to or exacerbate an accidental release. EPA is not requiring facilities to conduct research or interpret climate change research on their own to include natural events in their hazard reviews/PHAs. Neither did EPA specify which natural events are relevant for any facility, region, or the nation - this is left to each RMP-covered facility to determine. This change is based on EPA's examination of the causes of process safety events that were caused by or had a nexus to natural events in recent years. Although they can be caused naturally or by human activity, EPA considers wildfires to be a natural event in this context. EPA did not specify any safeguards or physical changes that should be made if hazard reviews/PHAs reveal that a facility is vulnerable to natural events.

AcuTech Explanation:

While adding a specific type of cause event to hazard reviews/PHAs is certainly a new practice for EPA in the RMP Rule (the RMP Rule is still categorized as a performance-based regulation), the consideration of natural events in a PHA is not a new practice for industry. Most, and probably a majority, of facilities in the PSM/RMP community routinely include external events (such as weather-induced or naturally occurring events), in their PHAs by using checklists and other forms of analysis. These checklists are used in PHAs in much the same manner as human factors and facility siting checklists where a straight-forward Yes/No analysis with explanation is conducted with recommendations as appropriate to reduce the risk from these types of events. CCPS has included external events checklists in their PHA revalidation guidelines, and many operating companies in the PSM/RMP community have similar checklists that they routinely employ during their PHAs. Some facilities choose to treat the checklist items as causes for HAZOP or What-If analysis and complete the analysis for each relevant external event in the PHA worksheets in a global or general node in the study. Either practice seems to be acceptable with regulators. Since EPA did not specify a format or type of hazard analysis to use for these events, these previous practices are likely to be acceptable for compliance.

Many facilities have adopted the use of LOPA as a PHA methodology in recent years. These facilities have generally refrained from including external events in their LOPAs because, unlike equipment failures and human errors, they have no control over the likelihood of external events and there are no independent protection layers (IPL) that are reasonable to credit for the prevention of external

events. Industry guidance does not address IPL credits for external events ordinarily.

Also, since EPA did not specify what natural events to include in the analysis nor provide technical guidance as of this time, each facility must determine which events are relevant for their site and the region where it is located, but the facilities that have employed the checklist and worksheet approaches to external events in their PHAs have experience in determining which events are relevant based on their location and the event history in their region. Of course, the recommendations that are generated by either analysis approach will need to be resolved like any other PHA recommendation. For example, if the facility where tornados are more common does currently have a way to monitor weather reports and issue a warning to site personnel, a PHA team may recommend such a capability. This may require a project to evaluate, design, and install such a system, as well as assigning personnel to operate it.

Loss of Power

EPA requires the analysis of loss of power explicitly in the hazard reviews and PHAs for Program 2 and Program 3 RMP-regulated processes. EPA also required emphasizing that hazard reviews and PHAs explicitly address standby or emergency power systems. EPA requires stationary sources to evaluate whether power loss represents a process safety hazard to their processes and, if so, implement appropriate controls to prevent or reduce that hazard. EPA does not include any explicit requirements to provide emergency power systems. However, EPA requires air pollution control or monitoring equipment associated with prevention and detection of accidental releases from RMP-regulated processes to have standby or backup power to ensure compliance with the intent of the Rule.

AcuTech Explanation:

Like natural events, industry typically examines the loss of power in hazard reviews and PHAs. Also, like natural events, global loss of power to a facility (as well as global loss of other utilities) is routinely studied in a global or general node in a PHA by using checklists. CCPS's external events checklists in their PHA revalidation guidelines book, and many operating and consulting companies in the PSM/RMP community have similar checklists that they routinely employ during PHAs. All these checklists include loss of utility systems that are important to process safety, including the loss of electrical power.
The analysis of the loss of power is usually performed in industry PHAs in two ways: 1) in each node where the loss of power can cause a PHA deviation, e.g., loss of power causing a pump to stop running results in the HAZOP deviation loss of flow, and 2) most PHAs in industry include a global or general node where the loss of each key utility is examined on a whole-facility basis. This dual treatment in

most PHAs is used because the consequences of loss of power to the entire facility simultaneously can be different than the loss of power to a given piece of equipment.

It is important to note that EPA does not require backup or emergency power be provided for the covered processes, although many facilities already have such emergency power capability for specified electrical loads. However, EPA is requiring the control and monitoring equipment that would detect or prevent releases of RMP chemicals be provided with emergency power. Since most of this equipment involves instrumentation or controls, the power supplies for this equipment is usually backed-up by emergency generators or by battery supplied uninterruptable power supplies (UPS) devoted to the control systems. Modern distributed control systems (DCS) are equipped with UPSs as part of their design. If an RMP-covered process does not have emergency backup power, provisions for providing it to detection and control equipment associated with prevention and detection of accidental releases will have to be made.

Stationary Source Siting

Because severe process safety incidents over the years have resulted in both onsite and offsite consequences, EPA is choosing to make more explicit what is required to be addressed in a stationary source siting evaluation. Rather than issuing additional requirements, EPA is expounding on the current regulatory text to ensure that siting evaluations properly account for hazards resulting from the location of processes, equipment, building, and proximate facilities, and their effects on the surrounding community. EPA amended the regulatory text for Program 2 and Program 3 hazard reviews and PHAs, respectively, to define stationary source siting evaluation as inclusive of the placement of processes, equipment, buildings, and hazards posed by proximate facilities, and accidental release consequences posed by proximity to the public and public receptors. The new amendments would make more explicit the requirement that hazard evaluations for processes need to address these matters in the siting evaluation.

AcuTech Explanation:

Both the PSM Standard and the 1996 RMP Rule required facility/stationary source siting as part of the PHA requirements. This analysis has typically been performed qualitatively using checklists. To satisfy the PSM Standard and 1996 RMP Rule, the focus was on occupied buildings and locations onsite and public receptors offsite to address this requirement in each regulation respectively. Following the BP Texas City incident in 2005, most facilities regulated by PSM or RMP regulations started performing their facility/stationary source siting analysis quantitatively. There was increased interest in improving facility siting studies, especially where occupied structures could be located onsite, including project trailers and other temporary structures. A by-product of the calculations of

these distances was that they showed if any process safety incidents could also affect public receptors beyond the facility boundary.

Industry RAGAGEPs were revised to offer both qualitative and quantitative methods of determining the effects of process safety events on permanent structures (API 752), temporary structures (API 753), and tents (API 756). Most facilities have chosen to use quantitative methods so that they can carefully site temporary structures onsite during turnarounds and know which of their permanent structures required structural upgrading to be more robust or where the people occupying those structures needed to be moved to safer distances. This analytical activity, and the subsequent projects to build and upgrade occupied buildings has gone on for over 15 years. Also, in January 2024, API revised API 752, API 753, and API 756 and there are several new requirements for quantitative facility siting analysis, some specific distance limits imposed, as well as expanded requirements for management system procedures and controls for the facility siting program, including monitoring the status of unoccupied buildings.

What is not clear from the Final RMP Rule is how the stationary source siting of offsite consequences is to be conducted, what analytical methods or input data is required to be used for the analysis, nor what the output of the analysis should consist of. Also, it is not clear in the Final RMP Rule what a facility will be required to do, if anything, if the analysis reveals possible damage to occupied buildings offsite such as residences or businesses and any subsequent health effects offsite. Presumably, knowing that an event can cause offsite effects will create an impetus to respond to those results in some way. However, there is a history in the RMP Rule of calculating possible offsite effects of certain process safety events and simply understanding that the potential exists for offsite effects with no other action required on the part of the facility or the public. The original 1996 RMP Rule and all subsequent editions of the RMP Rule have required both worst case scenario (WCS) and alternative release scenario (ARS) calculations to determine the distances of concern of releases involving RMP covered materials. This information did not result in new requirements from EPA to reduce the risks from the events that generate potential offsite effects. There is no new requirement in the Final RMP Rule that would change that.

Also, for the first time, EPA has used the WCS data beyond simply collecting and tabulating it. In the Final RMP Rule EPA is requiring Safer Technologies and Alternatives Analysis (STAA) for facilities in NAICS 324/325 that are within 1 mile of each other to perform an STAA. EPA used the WCS data to derive this distance. See the STAA section of this white paper.

Hazard Evaluation Recommendations & RMP Submittals

EPA requires that recommendations resulting from hazard evaluations be included in the facility's risk management plan submitted periodically. Specifically, facilities would be required to implement recommendations or list in their risk management plans the recommendations from their natural hazard, loss of power, and siting evaluations that were not adopted and the justification for those decisions. Additionally, in the Final RMP Rule, EPA is requiring that the following information be submitted in periodic RMP updates: inherently safer technology or design measures implemented since the last PHA, if any, and the technology category (substitution, minimization, simplification and/or moderation). recommendations declined from safety gaps between codes, standards, or practices to which the process was designed and constructed and the most current version of applicable codes, standards, or practices.

EPA decided not to adopt the OSHA PHA/incident investigation recommendation rejection criteria published in the Compliance Directive for the PSM Standard in the Final RMP Rule.

AcuTech Explanation:

The requirement to include the recommendations from their natural hazard, loss of power, and siting evaluations that were not adopted and the justification for those decisions is new. Also, the requirements to describe inherently safer technology or design measures implemented since the last PHA, if any, and to identify gaps between RAGAGEPs used to originally design and build the facility and the current versions of those RAGAGEPs are new. The RMP Rule has never required this level of detail regarding PHA and hazard evaluation recommendations and their status be reported to EPA. EPA justifies including this provision in the Final RMP Rule as part of the overall RMP related information availability to the public, local emergency planning committees (LEPC), and tribal emergency planning committees (TEPC) (see the Information Availability section in this white paper). Although the work needed to comply with this provision if it is adopted may be relatively modest (assuming the facility has a functional recommendation tracking system that the required information can be easily and quickly extracted), what is not addressed in the final rule is what would happen if EPA, the public, or the LEPC/TEPC disagrees with the rejection of a recommendation. Also, since all RMP information is submitted to EPA via RMPSubmit, an online system, it is not clear that owners/operators will be able to include explanatory information for the rejection.

If EPA had included guidance on possible criteria for rejection of PHA action items, such as in OSHA's PSM guidance, it would have offered some consistency with long standing practice in PSM. The recommendation rejection criteria were published in the PSM CPL document in 1994 and included in

the revised PSM CPL document, CPL 02-01-065, published in December 2023. Most of the PSM/RMP community should already be familiar with these criteria and how to interpret and use them. Many facilities have embedded these criteria in their PHA/PSM action item management procedures and practices. For clarity, these criteria are repeated as follows:

> *OSHA considers an employer to have "resolved" the team's findings and recommendations when the employer either has adopted the recommendations or has justifiably declined to do so. Where a recommendation is rejected, the employer must communicate this to the team, and expeditiously resolve any subsequent recommendations of the team. An employer can justifiably decline to adopt a recommendation where the employer can document, in writing and based upon adequate evidence, that one or more of the following conditions is true:*
>
> 1. *The analysis upon which the recommendation is based contains material factual errors.*
> 2. *The recommendation is not necessary to protect the health and safety of the employer's own employees, or the employees of contractors.*
> 3. *An alternative measure would provide a sufficient level of protection.*
> 4. *The recommendation is infeasible.*

The interpretation and use of these criteria varies in industry, but most PSM/RMP facilities understand that the last criterion, i.e., feasibility, does not include only cost considerations.

Safer Technologies and Alternatives Analysis (STAA)

As part of the PHA element of the Final RMP Rule (and the preceding SCCAP RMP Rule), sites that meet the following criteria will be required to perform an STAA for each process as follows:

- Facilities in NAICS codes 324 (petroleum and coal products manufacturing), and 325 (chemical manufacturing) with Program 3 processes that are located within 1 mile of another RMP-regulated facility with these same processes (classified in NAICS 324 and 325).
- All facilities with petroleum and coal products processes (in NAICS 324) using hydrofluoric acid (HF) in an alkylation unit (currently approximately 45 facilities) consider safer alternatives to liquid HF acid alkylation, regardless of proximity to another NAICS 324- or 325-regulated facility.
- Facilities in NAICS codes 324 and 325 that have had one accident that meets the RMP accident history reporting requirements since the most recent process hazard analysis under this section. AcuTech believes this is a relatively low threshold, making the necessity of a STAA more frequent than may be expected.

EPA is requiring owners and operators to include an evaluation, including the results of the STAA analysis, as part of the PHA, and, to document the feasibility of inherent safety measures based on more than cost alone. EPA is requiring that a facility's STAA team include, and document the inclusion of, one member who works in the process and has expertise in the process being evaluated. EPA is also requiring a more comprehensive practicability assessment, in addition to the STAA evaluation requirements as part of the PHA. As part of this analysis, owners and operators would be required to identify, evaluate, and document the practicability of implementing inherent safety measures, including documenting the practicability of publicly available safer alternatives.

In the Final RMP Rule , EPA added a requirement to implement identified inherent safety measures or other protective safeguards if inherently safer measures were not available or practicable. The additional safety measures are to be implemented in the following manner:

- For covered processes that meet the three criteria above for including an STAA (i.e., NAICS codes 324 and 235, 1 mile proximity to each other, or accident history), the owner or operator shall consider and document, in the following order of preference, inherently safer technology or design, passive measures, active measures, and procedural measures. A combination of risk management measures may be used to achieve the desired risk reduction.
- These facilities must implement at least one passive measure at the stationary source, or an IST/ISD measure, or a combination of active and procedural measures equivalent to or greater than the risk reduction of a passive measure.
- If no passive measures are identified or all are not practicable, and no inherently safer technology or design is implemented, then the owner or operator shall implement at least one active measure. If no active measures are identified or all are not practicable, the owner or operator shall implement at least one procedural measure.

For passive and active measures not implemented, the owner or operator shall document sufficient evidence to demonstrate to the implementing agency's satisfaction that implementing the measures is not practicable and the reasons for this conclusion. A claim that implementation is not practicable shall not be based solely on evidence of reduced profits or increased costs.

The owner or operator shall also determine and document the practicability of the inherently safer technologies and designs considered. The owner or operator shall include in this documentation any methods used to determine practicability. For any inherently safer technologies and designs implemented, the owner or operator shall document and submit to EPA a description of the technology implemented. EPA has defined "practicability" as the capability of IST/ISD measures being successfully accomplished within a reasonable time, accounting for technological, environmental, legal, social, and economic factors. EPA clarifies in this definition that environmental factors would

include consideration of potential transferred risks for new risk reduction measures. EPA is not specifically requiring owners or operators to implement identified IST/ISD measures. Although an owner or operator may choose not to implement a safer technology or design identified on account of its cost, EPA is requiring that the evaluation of practicability be first based on technological, environmental, legal, and social factors, with economic considerations evaluated last. EPA also is requiring that the practicability assessment be documented with the technological, environmental, legal, social and economic factors outlined, along with any methods or processes used to determine practicability.

AcuTech Explanation:

STAA is another term for an Inherently Safety Technology (IST) or Inherently Safer Design (ISD) analysis. This has been a mandatory requirement in two jurisdictions in the US for over ten years: New Jersey, which has a state process safety regulation and is the implementing agency for the RMP Rule in that state, and Contra Costa County, CA (CCC). Both jurisdictions have requirements for IST reviews. These reviews are generally performed in accordance with guidance published by CCPS (Inherently Safer Chemical Processes – A Life Cycle Approach, 3rd Ed.) and have resulted in improvements to existing processes but have not mandated changes to processes involving the substitution of chemicals or the moderation of process conditions. Most of the changes identified by site-performed IST reviews thus far have resulted in improved tolerance for human error (referred to as Simplification in the CCPS IST book), or minimization of chemical inventories where site operations can accommodate this. EPA is requiring that the STAA evaluation be performed as part of PHAs process and limit the requirement to only selected RMP-covered facilities which are the larger and more complex sites within the RMP community, i.e., sites with Program 3 processes in the petroleum refining and chemical manufacturing sectors. In the Final RMP Rule EPA has refined this to require STAA evaluations to Program 3 processes that are located within 1 mile of another RMP-regulated facility with these same processes, and also to refineries with HF alkylation units regardless of distance. EPA chose the 1-mile distance criteria based on accident history and the increased potential offsite risk posed by clusters of refineries and chemical plants in close proximity, and also by the potential risk posed by large inventories of liquid HF acid used in some refinery alkylation units. EPA also is now providing a web-link with four options for the public to access and limited RMP information or to request and access more detailed information on RMPs (https://www.epa.gov/rmp/how-access-risk-management-plan-information#tool).

There are several ways the public can access or request certain RMP information:

- Risk Management Public Data Tool
- Federal Reading Rooms
- Vulnerable Zone Indicator System
- Freedom of Information Act

The term "practicability" is key to determining when a facility documents that it will not implement an IST measure. EPA's definition of "feasibility" (not written in the Final RMP Rule) of inherent safety measures would be based on more than the cost of the measures alone. EPA is also requiring a more comprehensive practicability assessment, in addition to the STAA evaluation requirements as part of the PHA. As part of this analysis, owners and operators would be required to identify, evaluate, and document the practicability of implementing inherent safety measures, including documenting the practicability of publicly available safer alternatives. EPA is defining "practicability" as the capability of being successfully accomplished within a reasonable time, accounting for technological, environmental, legal, social, and economic factors, including consideration of potential transferred risks for new risk reduction measures. These are the same criteria used by the State of New Jersey in implementing their IST requirements in their state Toxic Catastrophe Prevention Act (TCPA) regulations in 2008. Although not included in the Final RMP Rule language itself, in the preamble EPA refers to guidance published by NJDEP (which administers the TCPA regulations), and the CCPS book Inherently Safer Chemical Processes, 3rd Ed. where criteria are offered in evaluating feasibility and practicability. As part of the evaluation of the environmental practicability of possible IST/ISD measures, EPA will allow the consideration of risk transfer, as described in the Final RMP Rule preamble. For example, a facility may decide to minimize the inventory of RMP chemicals onsite by procedurally reducing the allowed inventory in site storage of these substances. This will reduce the risk of release at the site itself, however, it may require more frequent deliveries of the RMP substances to achieve the same production rates. These more frequent deliveries will transfer the risk of release from the fixed RMP site to the transportation sector, where more frequent truck, rail, or other modes of delivery will be required. An argument can be made that more trucks and rail cars travelling on the region's highways and railways as opposed to a single inventory of a substance in a fixed site storage tank may increase the overall risk to the public.

The requirement to evaluate STAA/IST for certain RMP-covered facilities will add time to the PHA process that currently does not have to be spent (except in NJ and Contra Costa County, CA). Additionally, the evaluation of publicly available IST measures and justifying the use or non-use of them will require additional time and expertise. Most facilities have engineering and operations staff capable of performing PHAs for their facilities, but they do not always have the research and basic

science/engineering staff necessary to fully evaluate the state-of-the-art in the process technology in use in their plants. Often, this technology is licensed from a third party and the evolution of this technology may be something that facilities, or even their parent companies (if they have one) are not completely aware of. This may make an STAA evaluation difficult to perform without enlisting the participation of these third-party process licensors, university researchers, or other external subject matter experts. Some of these outside experts may be willing to participate in an STAA evaluation for a facility, and some may not be willing to do so. The new employee participation provision in the STAA requirements to have someone who works in the process and is knowledgeable should not affect the performance of STAAs as operators, maintenance personnel, and other hourly-paid personnel already routinely participate in PHAs.

Our experience shows that there are three occasions the STAA might be done:

1. Existing HAZOP with STAA Addition - if it is an existing PHA and one wants to add the STAA, then reconvene a team (possibly the same team or similar team as the HAZOP, but then potentially with a technical expert to help advise on options, alternative technologies, and the practicability of any ISD/IST considerations that are mentioned or to suggest them. This is not something that an average PHA team is qualified to do in many cases, especially with complex technologies. This may require some preparation as well to be efficient, researching options or compiling known options before assembling the team. The team filters through the process using the HAZOP as a direct or indirect reference and adds the consideration of ISD/IST for any significant hazard identified in the HAZOP. Focus should be on the regulated substances and those scenarios or hazards where there could be a recordable event. We have found that some teams stop documenting safeguards after they believe the layers of protection meet their minimum requirements, whereas we have to document the hierarchy of control for the STAA which then means we sometimes are re-doing the PHA or at least are producing more information for the STAA.

2. Integrated HAZOP/STAA for New or Revalidated PHAs – if it is a 5-year revalidation or new process, then the choice is to do it as an integrated session or one after the other in sequence possibly with different teams. AcuTech prefers to have PHA teams thinking about ISD/IST from the as part of good practice, so ideally the team can do them together, thereby being more efficient and by adding a few columns to the worksheet to immediately discuss if there is an ISD/IST consideration that might eliminate the hazard or modify it so that further risk reduction is done as a matter of course and so while the discussion is in process the simple ISD/IST strategies are also used for risk reduction, not considered a regulatory obligation that we are not likely to do. But it could be assembled as a completely separate and later exercise relying on the HAZOP as the basis. This may duplicate some work from our experience.

Note, in any methodological approach, there may be a need for post session analysis and documentation for the practicability assessment, especially if a significant ISD/IST consideration is identified that would make a substantial risk reduction but is going to be denied for whatever reason. The owner or operator will have to document the practicability evaluation of the inherently safer technologies and designs considered, along with the methods used to determine practicability. In the Final RMP Rule EPA defined "practicability" as the capability of IST/ISD measures being successfully accomplished within a reasonable time, accounting for technological, environmental, legal, social, and economic factors. Although economic factors can be considered when evaluating if a proposed measure is practicable, EPA has written the definition so that the evaluation of practicability be first based on technological, environmental, legal, and social factors, with economic considerations evaluated last. The final rule language itself states explicitly that practicability evaluations cannot be based solely on increased costs or reduced profits. While the criteria EPA is offering to clarify the term "practicable" will help determine what IST measures are candidates for evaluation and their priorities, there is still a long standing and wide difference of opinion in what to do with this information and what IST measures should be mandatory for implementation. The resolution of these differences will be a difficult and lengthy process between the government and industry.

In addition to problems with trying to regulate IST, it is potentially a difficult technical issue for many companies, particularly for those with single products, or those where there is only one reaction or type of feed material which can yield the product desired. Changes to processes to incorporate different chemicals (i.e., "substitution"), or different processing conditions (i.e., "moderation") would require substantial, and in some cases wholesale re-design and reconstruction of facilities and processes, even if they are possible. For refineries that use HF as a catalyst in their alkylation units, increasing pressure to change to another catalyst (e.g., sulfuric acid) or different forms of HF acid (e.g., a solid bed HF process) have been building for some time and the SCCAP RMP Rule increases that pressure still more. For these reasons, STAA could represent a real dilemma for some facilities/companies in the PSM/RMP community.

There are two other important points to understand about the STAA requirements in the Final RMP Rule:

Mandatory Risk Reduction Measures. This is the first time EPA has required mandatory risk reduction measures as part of a hazard evaluation that is part of the RMP Rule (OSHA has not done this with respect to the PSM Standard either). This is a significant departure from previous regulatory policy where decisions about specific risk reduction measures were left to the facility owner/operator subject to review by regulators. It is also a significant departure from previous final and proposed RMP rulemaking as well as regulations at the state and local level where STAA/IST is required. In the past STAA/IST reviews were required but specific risk reduction measures based on the results were

not required. Facilities performing STAAs must implement at least one passive measure at the stationary source, or an IST/ISD measure, or a combination of active and procedural measures equivalent to or greater than the risk reduction of a passive measure. What criteria will be used to determine if the combination of active and procedural measures is equivalent to or greater than the risk reduction of a passive measure? No such criteria were included in the Final RMP Rule language, nor in the preamble. Nor did EPA specify nor any offer any guidance on how to calculate the difference in risk. Also, what is not clear in the Final RMP Rule is if the requirements for risk reduction measures are in addition to the active, passive, and procedural safeguards already in place, or can the existing safeguards be credited against the new risk reduction measures required. These are open questions with significant possible impacts.

Use of Worst Case and Alternative Release Scenario Results. This is the first time since the original 1996 RMP Rule that EPA will use the WCS results of RMP-covered facilities in another part of the Rule. That is, the applicability of the new STAA requirements is based, in part, on the distance between RMP-covered facilities. The distance chosen to trigger the STAA requirement is 1 mile, which is based on an analysis of the WCS data submitted in risk management plans by industry. Although the STAA applicability is not based on comparing the individual WCS results of a given stationary source to a fixed criterion, it is the first time that EPA has used the WCS results as the basis for other RMP provisions. Previously, the WCS (and ARS) results were merely collected from the periodic RMP submittals and filed in EPA's database and have not been used for any other regulatory purposes.

Other Changes to PHA Element

In addition to the Final RMP changes to the PHA element described elsewhere in this white paper, e.g., the inclusion of natural hazards In PHAs, performance of STAAs, EPA has made other notable changes to the PHA element as follows:

Backup Power for Monitoring Equipment. In the Final RMP Rule EPA has revised the language associated with addressing engineering and administrative controls (i.e., safeguards) in PHAs to add the following provision: The owner or operator shall ensure monitoring equipment associated with prevention and detection of accidental releases from covered processes has standby or backup power to provide continuous operation.

Analysis of RAGAGEPs. In the 2022 proposed SCCAP RMP Rule EPA *included a provision* that PHAs include an analysis of the most recently promulgated RAGAGEP to identify any gaps between practices related to the facility's design, maintenance, and operation and the most current version of the RAGAGEP. In the preamble to the Final RMP Rule, EPA provided a lengthy discourse on the need to review and evaluate RAGAGEPs, including refuting many comments arguing against this

requirement. EPA's final conclusion on this issue stated: "EPA is finalizing the provisions for PSI, Program 2 and 3 requirements for compliance, and the RAGAGEP gap analysis as proposed." However, in the Final RMP Rule language itself EPA did not change the PHA element to require a RAGAGEP gap analysis. They did add language to the Subpart G of the Rule (Information Availability) that required the submitted RMPs include recommendations declined from safety gaps between codes, standards, or practices to which the process was designed and constructed and the most current version of applicable codes, standards, or practices. See the Information Availability section of this white paper.

In the 2022 SCCAP RMP Rule EPA proposed to adopt three of the four criteria used by OSHA to reject PHA and incident investigation recommendations and re-worded (slightly) in the SCCPA RMP Rule preamble. This language and reference to OSHA's PSM Compliance Directive remain in the preamble of the Final RMP Rule, but the rejection criteria were not made part of the Rule itself.

AcuTech Explanation:

Note that the requirement for backup power applies only to monitoring equipment for releases and is not a requirement to provide backup power for the entire site or to all the equipment in RMP covered processes.

EPA's requirement for a RAGAGEP gap analysis is argued for and justified in the preamble and commenter summary for the Final RMP Rule based on performing the analysis during PHAs. However, that is not how EPA chose to present this is the Final RMP Rule. Any recommendations resulting from the RAGAGEP gap analysis must be included in periodically submitted RMPs, but the final Rule does not specify how the analysis is to be done, under what RMP program element it is performed, nor how the gap analysis is to be documented. This requirement cannot be complied with without first performing a RAGAGEP analysis. Owner/operators can perform this gap analysis as part of their PHAs or perform it as a separate analysis. EPA did revise a provision of the PSI element in the Final RMP Rule as follows: "The owner or operator shall ensure and document that the process is designed and maintained in compliance with recognized and generally accepted good engineering practices." This change added the word "ensure" to the current RMP provision that previously just stated "The owner or operator shall document that equipment complies with recognized and generally accepted good engineering practices." This strengthens this requirement so that equipment is designed in accordance with the relevant RAGAGEPs.

Although EPA has devoted much attention for the currency of RMP-covered facilities with respect the relevant RAGAGEPs, they have not formally adopted nor issued any written guidance that adopts the same OSHA interpretation of "shall" vs. "should" language usage in RAGAGEPs. Are "should"

provisions in the relevant RAGAGEPs to be given the same meaning and weight as the "shall" provisions for the purposes of RMP compliance? Will EPA adopt or simply use OSHA's interpretation of "shall" and "should" language when applying RAGAGEPs? These are vital questions that can have significant impacts on facility design, construction, inspection, testing, preventive maintenance, and operations.

Incident Investigation

The Final RMP Rule would require incident investigation reports to include root causes for an RMP reportable accident or an incident that could reasonably have resulted in a RMP reportable accident (i.e., "near miss"). The Final RMP Rule also requires the investigations include the initiating event, direct and
indirect contributing factors, and the root causes. be The root cause analysis must be conducted using a recognized investigation method, and also requires that investigations be completed within 12 months. For very complex incident investigations that cannot be completed within 12 months, EPA is allowing an extension of time if the implementing agency (i.e., EPA and delegated state/local authorities) approves the extension in writing.

AcuTech Explanation: The original 1996 RMP Rule, as well as OSHA's PSM Standard, require that incident investigations identify the "factors that contributed to the incident" for the incident or near miss but do not explicitly require the root causes be identified. However, root cause analysis (RCA) is a very common component of current formal incident investigation processes and procedures used in industry. Root causes, in the context of incident investigation, are the basic, systemic reasons why an undesired event occurred. The root causes cannot be broken down into further causes and they can usually be traced back to failures in the underlying management systems. Process safety incidents usually have more than one root cause. The Final RMP Rule also specifies that RMP incident investigations include contributing factors. Contributing factors are related aspects of operations, maintenance, PSM and safety programs that played an ancillary role or could have helped detect or mitigate the events that occurred but were not in the direct chain of the root cause. There are generally multiple contributing factors for process safety/RMP incidents and near misses. There are various different types of RCA methods currently available, including internal corporate methods, those published in the literature, as well as commercial methods, and some with accompanying software. These RCA methods range from the very simple to complex. These analyses, particularly the more complex methods, generally require someone trained or experienced in the technique to facilitate the analysis. The Final RMP Rule does not mandate the use of a specific RCA method(s), nor does it describe the characteristics of the method to be used. It is likely that well-known, widely used practices will be acceptable to RMP implementing agency. RMP sites using more obscure methods might have to show equivalency with the more well-known methods. As stated above, RCA is a

common industry practice and most RMP sites or their parent companies are likely to have an RCA method in place that they have been using for years.

In the Final RMP Rule EPA requires a 12-month time limit on the performance of RCAs, with an extension possible for very complex investigations. Most RCAs and incident investigation reports generally occur within 12 months. Facilities will have to be aware of the time limit and schedule the RCA and other investigation activities more carefully to ensure this time limit is not exceeded without written permission from their RMP implementing agency.

Also, EPA declined to provide a definition of "near miss" as part of the Final RMP Rule, but stated in the preamble that they might do so in future rulemaking. This indicates that EPA believes that there is little ambiguity in industry about what a near miss is and when it is required to be formally investigated.

Compliance Audits

The 1996 RMP Rule required sites with Program 2 and Program 3 processes to conduct a compliance audit of the RMP prevention program at least once every 3 years. This is identical to the audit requirement in the PSM Standard. Because the Program 3 RMP prevention program and the PSM Standard requirements have been identical since the 1996 RMP Rule was adopted it is very common practice for facilities covered by both regulations to conduct these two audits concurrently. With the adoption of the Final RMP Rule the PSM Standard and the RMP Rule have now begun to diverge. This will have an impact on how PSM audits and RMP audits are conducted.

The 2017 Amendments RMP Rule proposed to require RMP covered sites to contract with an independent and qualified third party to conduct the next scheduled compliance audit following a RMP reportable accident or within 12 months, whichever occurs sooner. This requirement for third party RMP audits was rescinded by the 2019 Reconsideration RMP Rule. The SCCAP RMP Rule proposed to re-instate third party RMP audits if certain criteria were met.

In the Final RMP Rule the requirement for third party RMP audits was adopted. The existing Audit Element in the RMP Rule was revised to add the criteria for when a third-party audit was required, and a new separate element of the RMP Rule in Subpart D – Prevention Program to describe how third party RMP audits are to be performed. The next required compliance audit shall be a third-party audit when one or more of the following conditions applies:

- An accidental release meeting the criteria in for an RMP reportable release from a covered process at a stationary source as occurred. Reportable incidents are those that meet the criteria for inclusion in the RMP five-year accident history.

- An implementing agency requires a third-party audit due to conditions at the stationary source that could lead to an accidental release of a regulated substance, or when a previous third party audit failed to meet the new competency or independence criteria.

If an implementing agency makes a preliminary determination that a third-party audit is necessary, the implementing agency will provide written notice to the owner or operator that describes the basis for this determination. Within 30 days of receipt of such written notice, the owner or operator may provide information and data to, and may consult with, the implementing agency on the determination. Thereafter, the implementing agency will provide a final determination to the owner or operator. If the final determination requires a third-party audit, the owner or operator shall comply with the third-party audit requirements or they may appeal the decision within 30 days.
Third party auditors and audit teams can be assembled as follows:

- Engage a third-party auditor meeting all the competency and independence criteria, or
- Assemble an auditing team, led by a third-party auditor meeting all the competency and independence criteria. The team may include other employees of the third-party auditor firm meeting the independence criteria and other personnel not employed by the third-party auditor firm, including facility personnel.

The provisions in the Final RMP Rule governing the qualifications and independence for the third-party auditors include the following provisions and must be documented:

- *Competency requirements:* The auditor/audit team shall be knowledgeable with the requirements of the audit element of the Final RMP Rule, experienced with the stationary source type and processes being audited and the applicable RAGAGEP practices, and trained and/or certified in proper auditing techniques.
- *Independence and impartiality requirements:* The auditor/audit team shall act impartially, receive no financial benefit from the outcome of the audit, apart from payment for the auditing services. Retired employees who otherwise satisfy the third-party auditor independence criteria may qualify as independent if their sole continuing financial attachment to the owner or operator are employer-financed or managed retirement and/or health plans. The audit team leader must be independent but the remainder of the audit team can consist of either third party audit firm employees or personnel from the facility being audited. Also, all third-party personnel involved in the audit cannot accept future employment with the owner or operator of the stationary source for a period of at least two years following submission of the final audit report. For purposes of this requirement, employment does not include performing or participating in third-party audits pursuant to the requirements of the Final RMP Rule.

- All third-party personnel involved in the audit sign and date a conflict-of-interest statement documenting that they meet the independence criteria.

Two provisions from the 2017 Amendment RMP Rule regarding third party auditor independence have been removed Final RMP Rule: 1) auditors cannot have conducted past research, development, design, construction services, or consulting for the owner or operator within the previous 2 years before the audit, and 2) auditors cannot provide other business or consulting services to the owner or operator, including advice or assistance to implement the findings or recommendations of an audit report, for a period of at least 2 years following submission of the final audit report. These provisions were removed to provide more flexibility for facilities to find third party auditors when they are required.

Auditors shall have written policies and procedures to ensure that all personnel comply with the competency, independence, and impartiality requirements of the Rule.

The responsibilities of third-party auditors include: manage the audit and participate in audit initiation, design, implementation, and reporting; determine appropriate roles and responsibilities for the audit team members based on the qualifications of each team member; prepare the audit report and where there is a team, *document the full audit team's views in the final audit report*; certify the final audit report and its contents as meeting the requirements of the Rule; and provide a copy of the audit report to the owner or operator.

The Final RMP Rule also requires that the audit report:

- identify the lead auditor or manager, participating individuals, and any other key persons participating in the audit, including names, titles, and summaries of qualifications demonstrating that the competency requirements have been met;
- describe the audit procedures of the owner/operator, or incorporate them by reference;
- document the auditor's evaluation *for each covered process*, of the owner or operator's compliance with the provisions of the Rule;
- document the findings of the audit, including any identified compliance or performance deficiencies; *summarize any significant differences between the draft and final reports (if any)*;
- be certified (signed and dated) by the third party auditors using language in the Final Rule; and
- submit the final report to the owner/operator.

The owner/operator is required to:

- certify the report of their response to the audit findings (i.e., their corrective action plan that includes the audit report itself, the corrective actions, and schedule for the prompt correction of the deficiencies);
- immediately submit audit reports to the Board of Directors (or comparable body or individual within an owner/operator organization), whether or not they were conducted by third parties;
- generate corrective action plans in response to RMP audits within 90 days of the finalization of the audit report; and
- retain the past two RMP compliance audit reports (whether they were conducted by third parties) as well as the records pertaining to the responses to the findings, documentation of actions taken to address deficiencies, and related records.

EPA is also requiring facilities conducting third-party compliance audits to list in their submitted RMPs, for each process, findings resulting from the audit that the owner or operator chooses to decline.

AcuTech Explanation: The changes to the Audit element of the Final RMP Rule are profound.

When third party audits would be required. 1) when the site has had an incident qualifying for inclusion in the RMP five-year accident history, or 2) when the implementing agency requires a third-party audit based on non-compliance with the requirements of the RMP Rule (including when a previous third-party audit failed to meet the competency, independence, or impartiality criteria). This means that an implementing agency could require a third-party audit if it discovers that previous audits were performed by internal (i.e., company) personnel when third parties should have been used, or that the auditors did not contain competent personnel (e.g., not trained or certified). Companies may need to establish formal internal auditor training programs, or used external auditor training services to show that their internal auditors are qualified.

Third party auditor training and qualifications. The proposed 2017 Amendments RMP Rule contained a requirement that at least one auditor be a professional engineer (P.E.). This requirement was not included in the 2022 proposed SCCAP RMP Rule, nor in the Final RMP Rule. The preamble to the Final RMP Rule does not define exactly what "trained" or "certified" means. The preamble to the 2017 Amendments RMP Rule stated: Third-party auditors can meet the requirement to be trained or certified in proper auditing techniques by completing courses in environmental or safety auditing, obtaining certifications from recognized professional bodies, or having prior process safety auditing experience." The preamble provided several examples such as related certifications, e.g., Certified Process Safety Auditor (CPSA), which is currently issued by the Board for Global EHS Credentialing (this certification was formerly issued by the Board for Environmental Auditors – BEAC). The CCPS-

issued Certified Safety Professional (CCPSC) certification might also be acceptable. The accredited organizations offering these certifications have formal ethics provisions that are part of their certification programs. For example, BGC has a code of ethics for CPSAs. The same is true of many other professional accreditations.

The preamble of the Final RMP Rule does not contain the same statement as the 2017 Amendments RMP Rule, but since the competence requirements for third party auditors in the Final RMP Rule is the same as the previous RMP Rules, presumably the certifications and descriptions of competence in the 2017 preamble would still be acceptable today. Please note that the Final RMP Rule states that the third-party auditors must be trained ***and/or*** *certified, i.e., certification is not an explicit requirement. If an owner/operator can show that the auditors were adequately trained in another way besides via certification programs, or that they had adequate experience in PSM/RMP/EHS auditing, then this might be sufficient to satisfy the Rule even if certifications were lacking. Presumably, the resumes or other objective evidence would be required to substantiate such training or experience, other than a simple claim of "extensive" auditing experience or a lengthy number of years performing PSM/RMP audits.*

Impartiality of third-party auditors. The impartiality provisions proposed by EPA in the 2022 SCCAP RMP Rule have been modified from the provisions of the 2017 Amendments Rule. In the 2017 Amendments Rule a contractor/consultant could be either an auditor or a consultant for a given owner/operator (at least within a 2-year window before an audit and after an audit), but not both. The 2-year window for third party auditors not having performed other consulting work for the owner/operator being audited has been removed. This allows flexibility in assigning third party auditors to perform a given audit. However, potential third-party auditors should be careful not to assign auditors that will require them to audit their own consulting work. This is an obvious conflict of interest. Retired personnel whose sole financial connection with the owner/operator is employer-financed or managed retirement and/or health plans are deemed to be independent for the purposes of serving as third party auditors. Also, consulting/contracting would not trigger the prohibition if it was solely the performance of a third-party audit. Also, the 2017 Amendments RMP Rule provision that would have prohibited using anyone who had served as a third-party auditor for 2 years as a consultant (including advice or assistance to implement the findings or recommendations of an audit report) was removed in the Final RMP Rule. There is also a impartiality provision in the Final RMP Rule that prohibits employment of a third party by the owner/operator for 2 years following submission of the final audit report. Although the Final RMP Rule is not as prohibitive in defining what constitute an independent auditor as the 2017 Amendments RMP Rule, there are still some provisions that may make it difficult to find qualified and independent auditors on a short-term basis.

Also, the appearance of a conflict of interest will likely be an issue in assembling third party auditors/teams when they are required. For example, if a third-party auditor is from a consulting company that did process safety consulting work for the facility to be audited, e.g., a PHA, even though neither the lead auditor not any other team member actually did the PHA, would that previous PHA work create an appearance of conflict because the auditors would have to audit the PHA performed by another person working for their company? The appearance of conflict was not addressed at all in either the actual Audit element regulatory language, nor in the preamble.

Auditing each RMP covered process. Fortunately, the Final RMP removed the SCCPA RMP Rule proposal to evaluate each covered process during an RMP audit. This proposed provision was not consistent with current industry EHS and process safety auditing practice. RMP (and PSM) audits routinely include various sampling techniques, including selecting focus/representative units at sites where there are multiple PSM/RMP covered units, e.g., an oil refinery, where there are typically 25-30 covered units. Sampling is a common, accepted, and successfully used practice in EHS auditing.

Differences of opinion. Audit reports will have to reflect differences of opinion between auditors, if they exist. Also, differences between the draft and final audit reports must be summarized. This is not typical industry EHS auditing practice, where dissenting opinions are not published (like appeals court decisions). Only the consensus opinions are included in final audit reports. This provision will require reconciliation of these differing viewpoints openly in the report which will take time and work and also be subject to scrutiny and questions by regulators. The Final RMP Rule did not describe how these differences would be resolved, nor what the regulators would do when confronted by these differences.

Who receives the audit reports. Audit reports and the documents used to track and manage the audit corrective actions must be submitted to the company board of directors, or a similar committee/group, if one exists, or an appropriate individual. Although PSM and RMP audits are often performed as governance activities in many companies, it is not common for the company's directors, or the audit committee of the board, to receive the audit reports directly, although this is not unheard of. Companies that follow this practice usually have done this by extending the Sarbanes-Oxley reforms in financial/business auditing practices to their EHS audits. This change in the Final RMP Rule will be the first formal adoption of such a practice in process safety regulations.

Rejection of audit findings. The requirement in the Final RMP Rule to describe in the submitted risk management plans for which third party audit findings the owner/operator declined to pursue is new. This will require additional time and work and be open to the same scrutiny and questions as the differing viewpoints requirements. Also, the Final RMP Rule did not specifically include rejection criteria for third party audit findings as they did for STAA recommendations (see STAA section of

this white paper). Also, the requirement to include this information in the risk management plan is limited only to third party audit findings, not the findings from a non-third party RMP audit.

Possible effects on PSM audits. The PSM Standard requires a triennial audit of the entire PSM program at a facility subject to the Standard. The RMP Rule audit requirement is slightly different – The RMP Prevention Program (Subpart C or D for Program 2 and Program 3 processes respectively) must be audit at least triennially. This is not an audit of the entire RMP program. The audits of remaining portions of the RMP program at a covered site, e.g., the Hazard Assessment (Subpart B), the Emergency Response Program (Subpart E) are the responsibility of the RMP implementing agency, not the site itself. The requirement for third party RMP audits when certain criteria regarding incidents are met will also likely extend to PSM audits because until now PSM and RMP audits were routinely performed concurrently. This is because the requirements of the RMP prevention program were identical to the PSM Standard so the triennial audits for both regulations were performed at the same time. PSM and RMP facilities will have a choice to make regarding their triennial audits: either perform them together but ensure that the protocol used includes the requirements where the two regulations have now diverged, or perform PSM and RMP audits separately. The competence and independence requirements for third party auditors will increase audit costs for some covered facilities, but a number of them currently use third parties. The audit reporting requirements of the Final RMP Rule to include all auditor's views and to summarize differences between the draft and final reports are not currently required for PSM audits. Also, PSM audit reports are not required to be submitted to the Board of Directors or an equivalent level of senior management. Also, the requirement to describe in the submitted risk management plans which third party audit findings the owner/operator declined to pursue is not a requirement for PSM audits. These differences will make it increasingly difficult to perform PSM and RMP prevention program audits concurrently. It is likely that facilities with processes covered by both regulations will have to perform the audits separately, which will increase the time and cost required.

Employee Participation

For regulated facilities, EPA is requiring owners/operators to consult with site employees knowledgeable in the process and their representatives on addressing, correcting, resolving, documenting, and implementing recommendations from PHAs, compliance audits, and incident investigations, and provide opportunities for employees to report unreported accidents and other areas of RMP non-compliance to owner/operator EPA and other relevant authorities.

The written employee participation plan of action will include this consultation of employees and their representatives. EPA expects this would be like involving employees in the hazard evaluations but would go a step further to offer suggestions and concerns about why a recommendation should be

adopted or declined or whether other alternatives should be taken. An annual written or electronic notice shall be distributed to employees and their representatives indicating that the plan is readily available to view and how to access the information. Also, training shall be provided as often as necessary to ensure employees and their representatives, and management involved in the process, are informed of the details of the plan.

EPA is requiring that the written plan of action for the implementation of the employee participation include and ensure effective methods are in place so that employees and their representatives have authority to:

- Recommend to the operator in charge of a unit that an operation or process be partially or completely shut down, i.e., implement the emergency shutdown procedures based on the potential for a catastrophic release.
- Allow a qualified operator in charge of a unit to partially or completely shut down an operation or process, based on the potential for a catastrophic release, i.e., an emergency shutdown authority.

EPA is also requiring that employee participation plans outline how employers should document and respond, in writing to employee reports of hazards or employee recommendations to shut down or partially shut down a process. Specifically, EPA has added additional language to indicate that written plans include information for anonymously or with attribution reporting unaddressed hazards that could lead to a catastrophic release, unreported RMP-reportable accidents, or any other issue of non-compliance with the RMP Rule. When a report is made to the owner/operator, a record of the report shall be maintained for three years.

AcuTech Explanation:

EPA is strengthening the employee participation element of RMP prevention programs from the same language and requirements as existed in the original 1996 RMP Rule and the PSM Standard to include new provisions for emergency shutdown authority (ESDA), more consultation on resolving RMP program action items, and a method to report RMP non-compliance anonymously. In the Final RMP Rule EPA removed the general stop work authority (SWA) provision that was in the proposed SCCAP RMP Rule. The ESDA provision do not currently exist in the RMP Rule or the PSM Standard, but they are fairly common practices. They have been introduced as part of process safety programs in various ways, e.g., the CCPS Risk Based Process Safety Conduct of Operations element. Other companies have made this authority part of Operational Excellence programs or similar efforts. Training programs, particularly for operators, emphasize this authority where it is provided. However, ESDA is strongly related to the prevailing process safety culture in a facility. Whether personnel will

implement emergency shutdowns when warranted is influenced heavily by that culture, regardless of what the policies and procedures say and what their training has told them. Facilities should examine their process safety culture to determine if their personnel will use the ESDA authority they have been granted if they have been formally granted.

EPA is also adding a provision like ESDA where personnel can recommend to the operator in charge of a unit that an operation or process be partially or completely shut down based on the potential for a catastrophic release.

The consultation required when resolving recommendations from PHAs, incident investigations, and audits, including when a recommendation is declined, is stronger than previous employee participation language. Whether the implementing agencies will treat this consultation requirement as a "veto" by personnel over recommendations resolution decisions remains to be seen. The anonymous reporting provisions are similar to OSHA's employee hot line and should function similarly.

Emergency Planning

The 2019 Reconsideration RMP Rule left in place several emergency response requirements that were included in the 2017 Amendments RMP Rule. The Final RMP Rule includes these 2017 emergency response requirements and added some new ones. These proposed changes were significant, e.g., formally designating non-responding facilities. However, EPA decided not to retain this requirement and the Final RMP Rule focuses on requirements for coordination with local responders and field exercises as described below: The Final RMP Rule retained the provision from the 2019 Reconsideration RMP Rule that defined responding and non-responding facilities and established different emergency response requirements for them but did not change those requirements. Essentially, non-responding must have an emergency action plan procedure to safely move employees, contractors, and visitors to a safe location and account for them all and then rely on local responders for actual event response actions (e.g., firefighting, spill response, etc.). Non-responding facilities still must coordinate with local responders. Responding facilities must do what non-responding facilities must do, plus have a full emergency response plan and conduct drills and exercises at prescribed intervals.

Coordination & Emergency Notification. The annual coordination between RMP covered facilities and local responders required by the 2019 Reconsideration RMP Rule remains in place in the Final RMP Rule. The Final RMP Rule also requires facilities to develop and implement, as necessary, procedures for informing the public and the appropriate federal, state, and local emergency response agencies about accidental releases of RMP-regulated substances. The Final RMP Rule also clarifies the facility's role in the implementation of the emergency notification process by requiring the owner or operator

to provide the information needed to initiate a public release notification. In the Final RMP Rule EPA also requires that these notification procedures be available upon request to the public living in close proximity (within 6 miles) to RMP facilities.

Community Notification. In the Final RMP Rule EPA removed the proposal in the SCCAP RMP Rule require that a community notification system is in place to quickly and efficiently warn the public within the area that could be threatened by a release. The description of and reference to FEMA's IPAWS system was removed from the Final RMP Rule.

EPA is also requiring that facilities to provide necessary entities with initial RMP accidental release information during releases of regulated substances to ensure that information is available to the public and the appropriate federal, state, and local emergency response agencies. Specifically, EPA is requiring that whichever method is used to detect accidental releases, the facility - regardless of responding status - must ensure that the public is promptly notified by the method outlined in the facility's emergency response plan in coordination with local responders. However, EPA removed proposed provisions from the SCCAP RMP Rule that would have required including a description of site detection methodologies in use in the submitted RMP.

Drills & Exercises. The requirement in the 2019 Reconsideration RMP Rule that annual exercises of the emergency response notification system be conducted remains in place. The Final RMP Rule does not change this requirement. Also remaining from the 2019 Reconsideration RMP Rule is the requirement to conduct a tabletop exercise at least once every 3 years. In the Final RMP Rule EPA is requiring that all facilities with Program 2 and Program 3 processes and subject to the emergency response program requirements (i.e., the responding facility), at a minimum, conduct field exercises involving a simulated accidental release of a regulated substance once every 10 years, unless local responders indicate that frequency is infeasible. Evaluation reports from these exercises (i.e., the critiques) must be produced within 90 days along with the documentation of recommendations to improve the emergency response program at the facility and the schedule to promptly address the recommendations. The requirement in the 2019 Reconsideration RMP Rule and the SCCAP RMP Rule for a table top exercise at least every 3 years has been removed from the Final RMP Rule.

AcuTech Explanation:

One key differences between PSM and RMP since the inception of both regulations is that, unlike PSM, emergency response in the RMP Rule is not considered part of the prevention program. It is a different Subpart of the RMP Rule. Hence, several of the provisions of the 2017 Amendments RMP Rule that applied to emergency response were not returned to the original 1996 RMP Rule when the 2019 Reconsideration RMP Rule was adopted. The Final RMP Rule did not change these 2019

emergency response requirements. Since the original RMP Rule, facilities have not been required to respond to releases and their effects offensively and can move their employees, plus any contractors and visitors onsite, to a safe location, account for all of them, and then rely on local responders to actually respond to the events, fight fires, contain spills, etc. (the same emergency response philosophy is used in OSHA's PSM Standard – actual response is not mandatory) The Final RMP Rule does not change or remove that choice, does not change the difference between responding and non-responding facilities, nor does it require that non-responding facilities become responding facilities. Most facilities/sites in the PSM and RMP community are small facilities, e.g., small warehouse or food processing plants that used anhydrous ammonia as a refrigerant, or municipal water or waste treatment facilities that still use liquid chlorine. These small facilities are, for the most part, non-responding facilities when releases of toxic or flammable materials occur. These facilities then activate and implement their emergency action plans to protect and account for their employees and then rely on local emergency responders for the actual physical responses to the incident. However, if there is a non-responding facility that has not coordinated with their local responders so that the local fire departments, emergency medical services, police, and other responders do not know that the facility has placed the burden of responding on them, this coordination will have to be initiated. In some cases, the local responders who are now confronted with this situation may not willingly accept this responsibility.

There is a lingering question that is relevant to issue of non-responding facilities: What happens if the coordination fails with local responders? If the coordination reveals that the local responders cannot or will not respond to events at the site, the inference is that the site will then become a responding site. Although the preamble of the Final RMP Rule recommends that sites document when coordination with local responders fails, it did not make this a mandatory requirement. Additionally, if the coordination fails despite good faith efforts by the facility, then there could be an inference that the burden for providing the response lies with the owner/operator. However, if a site becomes a responding site under RMP, it is very likely that OSHA will then consider it a responding facility under the PSM Standard. This will have a very significant effect on such facilities because a responding facility under PSM must implement certain portions of the HAZWOPER Standard, which require maintaining substantial emergency response capabilities for the facility. Additionally, the LEPC could request in the writing that the site become a responding site, which would invoke these requirements. This would impose a significant burden for smaller RMP-covered facilities because of the necessary personnel, skills, equipment, and recurring training required to be a functional responding site under PSM and HAZWOPER.

Coordination & Emergency Notification Process. The existing requirement from the 2019 Reconsideration RMP Rule to hold annual coordination with local responders remains in place in the Final RMP Rule. However, the Final RMP Rule does not specify how this coordination is to take place.

Presumably, a meeting, a drill/exercise, or even e-mail correspondence (if little or nothing has changed) could suffice. This provision is intended to prevent the public from first finding out about a release that might affect them from the media or via social media. Nearly all PSM and RM P covered facilities have procedures in their emergency response plans (ERP) for informing the public and the appropriate federal, state, and local emergency response agencies about accidental releases of substances covered by both regulations, but if they do not or the provisions are not clear, revisions to the emergency response plans will be required. Drills & Exercises. Emergency response drills and exercises are currently mandatory under the Final RMP Rule due to the retained provisions from the 2017 Amendments RMP Rule in the 2019 Reconsideration RMP Rule. In particular, the annual notification exercise required by the 2017 Amendments RMP Rule remained and is in force today. The 2019 Reconsideration RMP Rule requirement for a tabletop exercise at least every 3 years is also still in force and has not been changed by the Final RMP Rule. The frequency for full field exercises (what many people call a "roll-out" drill) will be set at 10 years in the new Final RMP Rule. Local responders must be invited to participate in these tabletop and field exercises. This lengthy interval appears to be an attempt by EPA to not impose a large burden on local responders, although participation by local responders is still nit mandatory in the Final RMP Rule. Note that in the PSM Standard emergency drills and exercises are not currently mandatory unless the facility is a Treatment, Storage, and Disposal (TSD) facility under the RCRA regulations, in which case the drill provisions of paragraph (p) of the HAZWOPER Standard are applicable. Most PSM and RMP facilities are not TSD facilities under RCRA so this HAZWOPER paragraph is not applicable to them. However, many facilities in the PSM community perform such drills or exercises because other federal or state laws/regulations require them, e.g., New Jersey's Toxic Catastrophe Prevention Act, or federal security regulations affecting the chemical/process industry such as the MTSA and CFATS regulations. The 2019 Reconsideration RMP Rule explicitly allows combining drill/exercise requirements in this manner when multiple federal and/or state regulatory requirements for them apply. The Final RMP Rule did not remove this flexibility. Even when not subject to these regulations, sites often perform emergency response drills and exercises voluntarily in accordance with their own policies or procedures because they realize that the functionality of ERPs cannot be accurately predicted without drills and exercises, regardless of how well-written or comprehensive they appear on paper. It is also routine for PSM and RMP covered facilities to invite local responders to participate in these drills, however, local responders do not always participate. The new requirement for at least one field drill with local responders every 10 years (unless the local responders state that this interval is not feasible), while a fairly lengthy interval, will impose a requirement on RMP facilities that they do not have complete control over. If the local responders cannot or will not participate it is not clear if the RMP implementing agency will still hold the facility responsible for this field exercise.

In summary, the current practice for emergency response drills and exercises held by industry is to conduct them at least annually and are a combination of table-top and field exercises . Additionally,

most RMP-covered facilities have routinely combined required or voluntary process safety, environmental (e.g., pollution releases), and security drills and exercises. In nearly all RMP-covered sites these activities are formally scheduled, critiqued in writing (usually), and recommendations stemming from them are managed like any other process safety recommendations.

Information Availability

EPA is to allowing the public to request specific chemical hazard information if they residing, working, or spending significant time within 6 miles of a facility, and requiring that facilities provide this information within 45 days of the request. After receiving a request, the facility would be required to provide certain chemical hazard information and access to community emergency preparedness information. This proposal is like the 2017 Amendments RMP rule, with the added modification that information be restricted to those persons within 6 miles of the facility. This information can include the following:

Chemical Hazard Information

- Regulated substances information – the names of regulated substances held in a process.
- SDSs for all regulated substances located at the facility.
- The five-year accident history information required to be reported in the RMP 5-year accident history.

Emergency Response Program

- The following summary information concerning the stationary source's compliance with the emergency response provisions as applicable:
    - Whether the stationary source is a responding stationary source or a non-responding stationary source;
    - Name and phone number of local emergency response organizations with which the owner or operator last coordinated emergency response efforts; and
    - For stationary sources, procedures for informing the public and local emergency response agencies about accidental releases.
- Exercises. A list of scheduled exercises, excluding dates, required that are scheduled to occur within one year from the date of request.
- LEPC contact information, including LEPC name, phone number, and web address as available

- Declined recommendations and justifications, including declined recommendations and justifications from natural hazard, power loss, siting hazard evaluations, and RAGAGEP gap analysis, as well as inherently safer technology or design measures implemented since the last PHA, if any, and the technology category (substitution, minimization, simplification and/or moderation).

Languages. The information shall be made available in English or in at least any two other commonly spoken languages by the population potentially affected, as requested.

Notification of availability of information. The owner or operator shall provide ongoing notification on a company website, social media platforms, or through other publicly accessible means that the chemical hazard information is available to the public residing, working, or spending significant time within 6 miles of the stationary source upon request. The notification shall:

- Specify the chemical hazard information elements that can be requested.
- Provide instructions for how to request the information including verification of presence within 6-miles (e.g., email, mailing address, and/or telephone or website request).
- Identify where to access information on community preparedness, if available, including shelter-in-place and evacuation procedures.

Recordkeeping. The owner or operator shall maintain a record of the members of the public requesting chemical hazard information for five years.

AcuTech Explanation: The provision of chemical hazard information, emergency planning information to residents and others within the 6-mile restriction would allow access to information for the vast majority of the public that are within worst case scenario impact zones.

In the Final RMP Rule, EPA continues to include provisions for increased public access and better ease of that access for RMP related information. The original 1996 RMP Rule, the 2017 Amendments RMP Rule, and the 2019 Reconsideration RMP Rule all contained relatively liberal public access provisions. The reason for this is that the enabling legislation for the RMP Rule, which is the Clean Air Act Amendments of 1990 (CAAA 1990) included a public information component about the risks of process safety related chemical releases. This provision of the law applied only to the RMP Rule. It did not apply to the PSM Standard, which is also authorized by the CAAA 1990. The original plan by EPA was to have the submitted RMPs be publicly available online via the Internet. Even before the events of September 11, 2001, other agencies of the federal government were concerned about the open public availability of such security-sensitive information. Accordingly, the Chemical Safety Information, Site Security and Fuels Regulatory Relief Act (CSISSFRRA) was passed by Congress in

August 1999, which among other things, restricted the Internet access of the offsite consequence analysis (OCA) data of RMP covered sites that were submitted with their risk management plans.

Following 9/11, the concern about the security of the U.S. chemical industry was heightened even further and the security of OCA and other submitted RMP data was regarded as even more important. When the Marine Transportation Security Act (MTSA) and Chemical Facility Anti-Terrorism Standard (CFATS) regulations were adopted in 2002 and 2007 respectively, both of these regulations imposed careful controls on the access to and release of certain information regarding the chemical facilities subject to them.

No other process safety laws or regulations have been passed or adopted that address the security of information about sites covered by the RMP Rule (nor the PSM Standard). It appears now that EPA, in the final RMP Rule, desires to increase the amount of information and the ease of access to it that describes RMP-covered sites and certain information about their RMP programs. Apparently, EPA believes that this is required under their obligations under the CAAA 1990. The security concerns for the chemical/process industry of several years ago have not abated, and in the Final RMP Rule security concerns have not outweighed the proactive release of RMP related information to the public via the Internet/social media. Since 1999 when the CSISSFRRA law was passed there has not been any public outcry that they have been restricted from relevant information about the chemical/processing sites in their communities, although EPA stated in the preamble of the SCCAP RMP Rule that more access is desired by the public, interest/advocacy groups, and others. Also, there are still ways to access this information that are consistent with existing laws and regulations without posting it on the Internet. Due to CSISSFRRA, OCA data, which would be the most sensitive RMP related information, cannot be posted on the Internet by EPA. To change this, action by Congress would be necessary.

Other Changes

The Final RMP Rule also contains several other important changes as summarized below. Some of these changes are relatively minor in that they harmonize the language for Program 2 and Program 3 requirements. Some of these changes are because of differences between the two classifications of RMP processes since the 1996 RMP Rule. Program 3 requirements were identical to the PSM Standard, whereas the Program 2 are unique to RMP and their wording is very similar but not identical to the PSM Standard. Others change basic RMP related definitions or requirements and represent important modifications of RMP practices and are not just minor wording changes.

- To make the regulation more consistent throughout, EPA is requiring that the requirement to keep process safety information up to date also explicitly applies to Program 3 processes.

- RAGAGEP compliance between Program 2 and Program 3 is worded differently. EPA has harmonized these two provisions so that the requirements are identical. EPA has found that the distinction between "ensure" for Program 2 processes and "document" for Program 3 processes creates confusion. EPA therefore has replaced both provisions to indicate that the owner or operator shall ensure and document that the process is designed in compliance with RAGAGEP.
- EPA requires retention of hot work permits for 5 years, in accordance with the recordkeeping requirements in the RMP Rule. Keeping hot work permits for relatively lengthy periods after they are closed to support auditing and hot work program development, modification, and training is a common practice.
- In the Final RMP Rule EPA declined to provide a time limit that a transportation containing RMP chemicals could be onsite disconnected from its motive power source before it would be required to count the inventory of the container against the threshold quantity to determine RMP coverage. This was a proposal in the SCCAP RMP Rule.
- EPA declined to provide a formal definition of "storage incident to transportation" in the Final RMP Rule.
- In the Final RMP Rule EPA clarified that the definition of "retail facility" is one in which more than one-half of the "annual" income "in the previous calendar year" is obtained from direct sales to end users or at which more than one-half of the fuel sold over that period, by volume, is sold through a cylinder exchange program. EPA is using the one year of sales activity definition because they believe it captures the seasonality of propane sales at propane distribution facilities. This will make the Final RMP consistent with the current definition of retail facility in OSHA's PSM Standard. Note that OSHA is considering abandoning their similar definition in the PSM Standard in favor of using the NAICS codes for defining retail facilities such as department stores, convenience stores, and similar businesses. The one-half-of-the-income criteria that OSHA has been using since the original adoption of the PSM Standard has caused much confusion in determining whether a facility is a retail facility or not for the purposes of determining PSM coverage.

Timing

The effective date of the Final RMP Rule is May 10, 2024. Except for any exceptions given below on a specific timeline for compliance, all provisions are effective as of that date.

Deadlines for certain activities and requirements contained in the Final RMP Rule are measure from that date as follows:

- Require regulated sources to comply with new STAA, incident investigation root cause analysis, third-party compliance audit, employee participation, emergency response public notification and exercise evaluation reports, and information availability provisions, unless otherwise stated, 3 years after the effective date of the final rule, i.e., May 11, 2027.
- Require regulated RMP facilities to comply with the revised emergency response field exercise frequency provision by March 15, 2027, or within 10 years of the date of an emergency response field exercise conducted between March 15, 2017, and May 11, 2024.
- Allow regulated RMP facilities 1 additional year, i.e., May 11, 2028 to update and resubmit risk management plans to reflect new and revised data elements.

What is Not Included in the Final RMP Rule

The EPA Request For Information (RFI) for the RMP Rule published in the Federal Register on July 14, 2014 contained 25 items. Only five RMP program elements have been addressed in the Final RMP Rule that resulted from the 2014 RFI. EPA did not make any changes in the Final RMP Rule to the Hazard Assessment Subpart of the rule.

Notable by its absence are any alterations to the list of RMP chemicals (at this time), particularly the addition of ammonium nitrate, which was the chemical of interest in the West, TX, accident in 2012 and caused the issuance of the 2014 RFI. Also, no changes were made to any of the threshold quantities for current RMP-covered chemicals. Other high profile prevention program items such as extending the mechanical integrity requirements to cover any safety critical equipment, the definition of a recognized and generally accepted engineering practice (RAGAGEP), or organizational management of change were also not addressed in the Final RMP Rule. Perhaps EPA intends to make proposals in further rulemaking or is waiting until OSHA formally proposes revisions to the PSM Standard to propose further RMP revisions.

Conclusions

As described in the *AcuTech Explanation* section of each Final RMP Rule change, some of the changes will impose significant changes to RMP programs in industry. For those facilities covered by both the RMP Rule and the PSM Standard, these changes will also affect the scope and contents of their PSM programs. This is inevitable as even with some differences in RMP prevention program requirements introduced by the Final RMP Rule, the requirements of the PSM Standard and the prevention program of the RMP Rule will remain very close. Both regulations are process safety related and address the same type of potential incidents. The possible changes in enforcement policies for EPA and OSHA for the two regulations because of this divergence are unknown at this time.

The Final RMP Rule, for the first time in any U.S. federal, state, or local process safety regulation, has included mandatory risk reduction measures as part of the STAA requirements (which is part of the PHA element). This is a major departure from previous process safety rulemaking and will require clarification from regulators on the acceptability of certain types of risk reduction measures, as well as how the risk equivalence between them is to be evaluated.

The Final RMP Rule made use of the worst case/alternative release scenario (WCS/ARS) results for an RMP purpose other than simply the collection and tabulation of the data. Although this first use is only to establish criteria for requiring Safer Technologies and Alternatives Analysis (STAA) for facilities with certain offsite effects, which is based on an analysis of the WCS data submitted in risk management plans by industry, i.e., the 1-mile distance between RMP covered facilities. Up until now, the WCS/ARS results had not been used for any other purpose in the RMP Rule or its enforcement other than simply its collection and tabulation.

AcuTech Group, Inc.

AcuTech has specialized in process safety since 1994. Our consultants have internationally recognized expertise in process safety and risk management program analysis, development, and implementation, with specialization in the petroleum, chemical, and petrochemical industry. We have deep experience conducting hazards analysis and risk assessments, developing, implementing, and auditing PSM programs, and offer training and software to assist companies to improve their management systems and reduce risk. We have also helped develop industry guidelines in PSM, including the CCPS *Guidelines for Auditing Process Safety Management Systems, 2nd Ed.; Inherently Safer Chemical Processes – A Life Cycle Approach, 3rd Ed.; Guidelines for PSM Metrics; and Essential Practices for Creating, Strengthening, & Sustaining Process Safety Culture.*

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