



Possible Changes to OSHA’s Process Safety Management (PSM) Standard (29 CFR 1910.119)

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Background & Recent History of PSM Rulemaking

The PSM Standard 29 CFR 1910.119 was adopted by OSHA on May 26, 1992, and has remained unchanged since then, except for one minor administrative change because the HAZCOM regulation definitions of flammable liquids and gases were changed in 2012 to reflect the new Global Harmonization System. But this definition of a flammable did not change for the purposes of the PSM Standard. OSHA has expressed on many occasions their desire to modify the Standard. Almost since its initial adoption, OSHA expressed on many occasions their desire to modify the Standard, and as time and events evolved, this list of desired revisions has grown while no rulemaking has occurred. For example, in 1997, the Occupational Safety & Health Review Commission (OSHRC) ruled that OSHA’s interpretation of the atmospheric storage tank exemption in the Standard was not proper (i.e., the Meer decision), and OSHA stated its desire to revise the Standard to include flammable materials stored in tanks at ambient conditions. Additionally, the U. S. Chemical Safety and Hazard Investigation Board (CSB) and the federal courts have, on several occasions since 2013, issued rulings confirming or striking down OSHA’s interpretation of the PSM Standard, or have recommended to OSHA that the PSM Standard be revised to address several issues that contributed to process safety incidents. Over that time, OSHA has preferred to “revise” the PSM Standard by clarification and interpretation, and hope that the OSHRC and the judicial courts agree with them when appeals of citations occur.

On August 1, 2013 the President Obama signed Executive Order (EO) 13650 ordering the relevant agencies of the federal government to improve the safety and security of the chemical industry in the U.S. The EO was issued as a result of the catastrophic incident involving an ammonium nitrate explosion at a fertilizer distribution facility in West, Texas, in April 2013. In addition to DHS, BATF, and EPA, OSHA is one of those relevant agencies, and the EO served as a catalyst for OSHA to suggest a number of issues that they had been evaluating for the over 20 years for possible revision to the PSM Standard at that time.

On November 9, 2013 OSHA submitted an Advanced Notice of Proposed Rulemaking (ANPR) to OMB for revising the PSM Standard. On December 3, 2013, OSHA published a Request for Information (RFI) soliciting comments on 17 areas of possible revision to the PSM Standard.



Following the response to the comments they received on the RFI, OSHA proceeded to complete the impact analysis required by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA). The SBREFA review on the RFI changes was completed in October 2016. Following the 2016 election and the new administration taking office in January 2017, the PSM Standard revision process stopped.

In 2015 and 2016 OSHA decided not to wait for the PSM Standard to be revised and issued several enforcement memos that essentially adopted the contents or parts of them for three of the RFI items: 1) formally defining a RAGAGEP, 2) re-defining retail facilities for applying the retail exemption in the PSM Standard, and 3) adopting mixture rules for PSM Standard toxic materials (Appendix A) that replace the original definition of pure/commercial grade concentrations for these materials. The RAGAGEP and mixture rule interpretations have not been challenged legally yet and their ultimate enforceability is not known. However, the revised retail exemption definition was challenged in a lawsuit filed in federal court by the fertilizer industry. The new definition of retail contained in OSHA's enforcement memo would have resulted in approximately 3,000 distributors of anhydrous ammonia as a fertilizer being covered by the PSM Standard that were previously considered exempt. The DC Court of Appeals ruled in favor of the plaintiffs disallowing OSHA from extending coverage of the PSM Standard to these ammonia fertilizer distributors. However, the court's ruling was not based on the technical merits of covering ammonia used as a fertilizer under PSM or the potential hazards such businesses present, but on procedural grounds. The court ruled that OSHA cannot redefine the retail exemption without going through the proper rulemaking process to actually modify the PSM Standard.

In October 2020, following the appeal of an OSHA citation to the Wynnewood refinery the 10th Circuit Court of Appeals affirmed a ruling by the OSHRC that utility systems whose failure could cause a PSM incident, or a utility that safeguards against such an incident must be included within the scope of a PSM program. To date, OSHA has not issued any enforcement memo or other guidance on how they intend to enforce this court ruling.

On August 8, 2022, OSHA published a notice in the Federal Register (FR) that stated that revising the PSM Standard was on the regulatory agenda for the agency. The FR notice summarized the RFI process since it began in 2013, indicating that OSHA intends to use the changes proposed in the RFI as a starting point for this effort. Additionally, the FR notice noted that the U.S. Chemical Safety and Hazard Investigation Board (CSB) currently has 14 open recommendations for OSHA to address. Two of the proposed RFI changes addresses the 10th Circuit ruling on utilities, at least partially.

On September 20, 2022, OSHA published a notice in the Federal Register that described the list of proposed changes. There is a total of 24 of them being considered. Most of them (17) are from the 2013 RFI, while the remaining 7 changes are new and reflect proposed changes being considered by EPA in the RMP Rule, or new ideas about the PSM Standard that OSHA believes are worthy of consideration. If adopted, they would have wide ranging ramifications for industry PSM programs. AcuTech has provided the following brief explanation of these 24 potential areas of change to the Standard.

Possible Topics for PSM Standard Revision

Each of the 24 proposed changes to the PSM Standard reflecting OSHA’s current thinking are described below along with AcuTech’s explanation of the possible impacts on industry PSM programs if the change were to be included in any revised PSM Standard. *Note that the AcuTech explanation of the projected impacts is based on what OSHA has published in the 2013 FRI, August 8, 2022, and September 20, 2022, FR notices. As the rulemaking process unfolds for this regulation the actual wording of the draft rule and then the final rule, following public comment and hearings, is likely to change. The explanation of how the regulation will impact industry PSM (and possibly RMP) programs as the rulemaking process evolves will be published in subsequent editions of this white paper.*

Clarifying the PSM exemption for atmospheric storage tanks

In 1997, the OSHRC ruled that OSHA could not require that facilities with flammable materials stored in atmospheric storage tanks include these tanks in their PSM programs based on an interpretation by OSHA that such tanks that were connected to otherwise covered processes must also be covered. This ruling, known as the Meer decision for the company that appealed a citation for such coverage, resulted in OSHA announcing that no PSM citations would be issued for the applicability of the Standard to atmospheric storage of flammable materials. This has been OSHA’s policy on the atmospheric storage of flammable materials since 1997. In the 2013 RFI and the September 20, 2022, FR notice OSHA proposed to remove the exemption for atmospheric storage of flammables.

AcuTech explanation: As a result of the Meer decision by the OSHRC, many companies decided at the time to remove their atmospheric storage tanks containing flammable materials from their PSM programs. If this proposed change to the PSM Standard is adopted these companies will have to expand the boundaries of their PSM programs to include them, which could represent a significant amount of work. Some facilities have treated these storage tanks and their contents informally as part of their PSM programs, but in formally defining the boundaries of their programs have excluded them. For example, inspections of these tanks, as part of the facility mechanical integrity (MI) program are routine in the informal inclusions of these tanks, as is the maintenance of process safety information (PSI) that describes the basis for their design and construction.

Oil and gas well drilling and servicing

The PSM Standard included an exemption for oil and gas drilling and servicing operations. This proposed revision to the PSM Standard to cover oil and gas well drilling and servicing would include exempt processes and equipment because of OSHA’s original plans in the early 1990s to address the safety of such facilities in separate rulemaking. That rulemaking did not occur and in the 2013 RFI and the September 20, 2022, FR notice OSHA proposed to extend the PSM Standard to cover them if they otherwise meet the applicability rules of the PSM Standard.

AcuTech explanation: See the next item in this white paper.

Oil and gas production facilities

During the original PSM Standard rulemaking process, OSHA failed to perform the required economic analysis of oil and gas production facilities and therefore could not cover them in the Standard. The 2013 RFI and the September 20, 2022, FR notice proposed change corrects this oversight.

AcuTech explanation: The revision, along with the previously described one above to remove the oil and gas drilling and servicing exemption could potentially expand the applicability of the PSM Standard to thousands of onshore oil and gas exploration and production facilities that are currently exempt. Not all oil and gas E&P facilities are in active service (i.e., they are capped and/or not producing), and not all of them would trigger PSM coverage because of the properties of the materials produced. For example, most crude oils do not meet the flammability criteria used in the PSM Standard, or the amounts stored or present onsite do not meet or exceed the threshold quantities that would require PSM coverage. However, given the large number of them, and the types of operations that typically occur at oil and gas wells, e.g., separation, collection and storage, and transfer, these two possible changes to the PSM Standard have the potential to add many facilities to the PSM community. This is particularly relevant given the well drilling and servicing associated with exploration and production of shale gas/oil deposits, some of which contain larger fractions of lighter hydrocarbons that may trigger the flammability criteria in the Standard. Some of them may still be eligible for the PSM exemption for remote and unoccupied facilities.

Expanding PSM coverage and requirements for reactivity hazards

Due to the consequences of catastrophic incidents that have involved reactive chemical hazards, OSHA proposed to expand the Standard to include reactive chemicals. The CSB has recommended to OSHA several times over the years that the applicability of the PSM Standard be expanded to include additional reactive chemicals and materials that are stable under normal circumstances but may become unstable when mixed with other chemicals, water, or air. OSHA has also received several petitions requesting that the PSM Standard be revised to include reactive chemical hazards. In 2004, New Jersey's Toxic Catastrophe Prevention Act (TCPA) regulations were amended to include a wide list of such chemicals and associated functional groups based on their properties (e.g., heat of reaction) and other factors, including the use of mixture groups of various reactive materials. The 2013 RFI specifically refers to New Jersey's TCPA experience in this area.

AcuTech explanation: This is perhaps the most complex and potentially significant possible change from OSHA in the 2013 RFI and the September 20, 2022, FR notice. The number of chemicals that can experience adverse reactions with others, or with water or air, is very large, and the possible combinations of these materials has always been one of the difficult problems in trying to designate which chemicals represent reactive hazards. Even if limited to the same materials and property definitions used by New Jersey's TCPA, this will significantly expand the



number of PSM covered chemicals, with a commensurate expansion of facility PSM programs to include them.

Updating the list of highly hazardous chemicals in Appendix A of the PSM Standard

The original PSM Standard Appendix A list of toxic and reactive chemicals was derived from a number of domestic and international public and private sources, including New Jersey’s TCPA, Delaware EHS regulation, the EU, the UK COMAH regulations, the list of hazardous materials compiled by the World Bank, and others. In the 2013 RFI and the September 20, 2022, FR notice, OSHA has indicated a desire to review the current Appendix A list and add other chemicals to the list, as well as proposing that Appendix A should be periodically revised to keep pace with incident investigations, new technology, new research on properties or materials, etc. OSHA did not propose any specific chemicals that it believed are worthy of addition to Appendix A of the Standard, nor did it describe the periodic review process for Appendix A.

AcuTech explanation: It is expected that this change will be adopted and that certain chemicals otherwise exempt but involved in catastrophic incidents (e.g., ammonium nitrate) will be included in the PSM Standard, as well as this will trigger a more frequent review and addition to or modification of Appendix A of the Standard. The full impact of this is not presently known until a list of additional chemicals is proposed.

Revising the PSM Standard to require additional management system elements

In the 2013 RFI and the September 20, 2022 FR notice OSHA proposes a possible revision to the PSM Standard to require additional management system elements that would ‘modernize’ the scope of PSM. OSHA noted in the RFI the work that was performed by CCPS in the *Guidelines for Risk Based Process Safety* book (2007) that PSM programs should include additional elements such as Conduct of Operations, PSM Metrics, and periodic Management Reviews of PSM programs.

AcuTech explanation: If ultimately adopted this possible change to the PSM Standard would expand the number of PSM elements and the number and type of facility activities that would be formally included in a PSM program. Many facilities have already adopted the additional RBPS elements informally as PSM practices but have not formally included them in the definition of their PSM programs. For example, many facilities currently collect and analyze PSM metrics, however, this activity might become required by regulation (and might have to be modified to suit that new regulation). This would, however, make the PSM Standard agree more closely with a prominent current industry consensus PSM model, and would also align PSM programs with the general Plan-Do-Check-Act model of management systems.

Amending the PSI element to require evaluation of updates to applicable recognized and generally accepted good engineering practices (RAGAGEP)

Currently, section (d)(3)(iii) of the PSI element of the PSM Standard includes a requirement that “For existing equipment designed and constructed in accordance with codes, standards, or

practices that are no longer in general use, the employer shall determine and document that the equipment is designed, maintained, inspected, tested, and operating in a safe manner.” OSHA has proposed to revise this requirement to mean that changes to relevant RAGAGEPs be monitored by PSM covered facilities, and when equipment modifications are required as a result of those changes, that they be made accordingly.

AcuTech explanation: This item addresses one of the least understood provisions in the PSM Standard. The Standard is not clear as to what level of review is appropriate when RAGAGEPs are changed, how the review should be documented, and how the information should be disseminated after the review is completed. Part of this lack of specificity is due to the performance-based nature of the PSM Standard. The impacts on industry are not anticipated to be major from this item, as most companies have processes already in place in their engineering or regulatory departments to keep track of RAGAGEP changes, or they rely on engineering and project contractors, who pay close attention to these types of changes. Changes to RAGAGEPs that require modified equipment are very rare, as most older editions RAGAGEPs are grandfathered as requirements if the service conditions that were originally used to specify the design and use the RAGAGEP in place at that time have not changed. However, changes in “shall” vs. “should” language in RAGAGEPs does change and that should be carefully monitored (see item in this white paper regarding the definition of RAGAGEP).

Amending the PSI element to require continuous updating of collected information

This proposed change was not included in the 2013 RFI (and hence not addressed in subsequent OSHA documents such as the SBREFA review) and is new. Apparently, OSHA believes that the updating of PSI is not being made in a timely manner, e.g., from projects, MOCs, recommendation completion, or other PSM activities that result in the alteration of PSI. OSHA has included this item in the September 20, 2022, list of possible changes but has offered no detail thus far regarding any time limits, how “timely” might be applied to PSI updates, or any other guidance.

AcuTech explanation: Updating PSI following projects, MOCs, or other PSM related activities is a routine activity in PSM programs. However, the amount of time to make the permanent corrections to PSI has increased slowly over the years. For example, it is not unusual currently for permanent CAD corrections to P&IDs to take 6-12 months. Some of this delay is due to the availability of CAD support, which increasingly has become a third-party service rather than an in-house (host site) capability. The COVID-19 pandemic has exacerbated this situation because of the difficulties in finding, scheduling, and using contractors. However, since most PSI currently is in the form of electronic documents, this does allow some increased flexibility as most of the work can be performed remotely. In the past, OSHA has refrained from using hard time limits for accomplishing required PSM activities in the PSM Standard, preferring to use performance-based requirements such as “timely.” As the PSM Standard rulemaking process unfolds, OSHA will have to provide more detailed guidance for this proposed change if it intends to retain it.

Adding a definition for RAGAGEP

In the current PSM Standard, the term RAGAGEP is used in both the PSI and MI elements. These usages invoke broad requirements that RAGAGEPs be followed and their use documented in the design, construction, as well as the testing and inspection of PSM covered process and equipment. However, the Standard does not currently include a definition of this crucially important term. Another important related issue addressed in the 2013 RFI is whether internal standards can be used when industry consensus RAGAGEPs are not available. In the 2013 RFI, OSHA referenced the definition of RAGAGEP offered in the CCPS book *Guidelines on Mechanical Integrity Systems* (2006), and it solicited comments on this or other definitions. The current general meaning of the term RAGAGEP is limited to the codes, standards, and other documents published and maintained by Standards Developing Organizations, i.e., the trade and professional organizations such as ASME, ANSI, API, NFPA, etc.

AcuTech explanation: If OSHA adopts a broader definition of the term RAGAGEP or the organizations that typically issue them, the scope and application of the PSI and MI elements of PSM programs could be expanded. However, in their 2015/2016 internal enforcement memos OSHA provided definitions that were largely consistent with long-standing industry practice. For example, OSHA defined the industry consensus RAGAGEPs as those published and maintained by accredited Standards Developing Organizations, such as ASME, ANSI, API, NFPA, etc. OSHA also stated in this guidance that internal facility or company procedures that provide the same technical guidance be treated as RAGAGEPs, particularly when industry consensus RAGAGEPs are or were not available when the equipment was first designed and installed. In this enforcement guidance OSHA also include provisions for interpreting RAGAGEP provisions that are worded using “shall” (or equivalent) language. OSHA stated these provisions be treated as mandatory requirements, which has largely been an industry practice for many years. However, the treatment of provisions that are worded using “should” (or equivalent) language are nearly always treated in industry as optional, whereas OSHA’s 2015/2016 guidance required that “should” provisions still must be addressed, although the facility has the flexibility to do something different if they abate the basic risk addressed by the provision in question. Also, most (but not all) facilities treat their internal procedures the same way with respect to “shall” and “should” language.

Clarifying the PHA element to require consideration of natural disasters and extreme temperatures in their PSM programs, in response to E.O. 13990

This proposed change was not included in the 2013 RFI (and hence not addressed in subsequent OSHA documents such as the SBREFA review) and is new. Like EPA for the RMP Rule, OSHA is proposing to require including the potential hazards associated with natural events in process hazard analyses (PHA). However, unlike EPA, OSHA has offered no clarifying detail on what they expect thus far. For the RMP EPA has proposed that PHAs include consideration of external events such as natural hazards, including those caused by climate change or other triggering events that could lead to an accidental release. For the RMP Rule, EPA has also proposed that loss of power events be explicitly studied in PHAs. Both agencies are proposing these changes in response to Executive Order 13990 on climate change. Neither OSHA nor EPA is requiring that facilities conduct research or interpret climate change research on their own in order to include

natural events in their hazard reviews/PHAs. Neither OSHA nor EPA has specified which natural events are relevant for any facility, region, or the nation. This is left to each PSM and RMP-covered facility to determine. This change is based on the regulator's examination of the causes of process safety events that were caused by or had a contribution from natural events in recent years. Although they can be caused naturally or by human activity, EPA also considers wildfires to be a natural event in this context. Neither agency in their proposed PSM and RMP changes specified any safeguards or physical changes that should be made if the PHAs reveal that a facility is vulnerable to natural events or loss of power.

AcuTech explanation: The consideration of natural events and loss of power in a PHA is not a new practice for industry. Most facilities in the PSM/RMP community routinely include external events (such as weather-induced or naturally occurring events), including loss of power in their PHAs. Checklists are often used for this purpose. 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 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 book, and many operating and consulting 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. Loss of power is usually studied in a PHA both node-by-node for each piece of equipment, as well as the total loss of power to the entire unit/process being studied simultaneously. 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. These methods of analysis for external events usually add one PHA session or less to a typical PHA. Either practice seems to be acceptable with regulators thus far. Since OSHA did not specify a format or type of hazard analysis to use for these events, these previous practices are likely to be acceptable if this change is adopted but at this point it is unclear what additional expectations there may be.

Many facilities have gravitated towards the use of LOPA in the PHA processes 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 either.

Also, OSHA did not specify what natural events to include in the analysis so each facility will have to 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 extensive experience in determining which events are relevant based on their location and the event history in their region.

It is important to note that thus far OSHA is not requiring backup or emergency power be provided for the covered processes, although many facilities already have such emergency power capability for specified electrical loads. Therefore, the effects on PSM programs should be minimal.

Amending the PHA element to require formal resolution of Process Hazard Analysis team recommendations that are not utilized

Like EPA for the RMP Rule, OSHA is proposing that recommendations resulting from PHAs that were not adopted be formally justified. OSHA did not provide specificity as to the format or level of detail required for the formal resolution of unused PHA recommendations.

AcuTech Explanation: Although the work needed to comply with this provision if it is adopted will be minimal, what is not addressed thus far is what would happen if OSHA or others disagrees with the rejection of a recommendation. Also, it is not clear that employers will be able to include explanatory information for the rejection and what the format for documenting this information will be. At issue is how OSHA may interpret any decision as adequate.

The use of OSHA's previous published recommendation rejection criteria will offer some consistency with long standing practice in PSM. The recommendation rejection criteria were published in the PSM CPL document in 1994, and 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.

Expanding the PHA element by requiring safer technology and alternatives analysis

This proposed change was not included in the 2013 RFI (and hence not addressed in subsequent OSHA documents such as the SBREFA review) and is new. Like EPA for the RMP Rule, OSHA is proposing that PSM covered facilities be required to conduct a Safer Technology Alternatives Analysis (STAA) as part of their PHAs. OSHA did not provide any specificity on how this analysis is to be conducted, how it is to be documented, or most importantly how it is to be followed-up.

OSHA did not indicate that the follow to the STAA would requiring facilities to implement identified inherent safety measures. Presumably, if the PHA team makes any recommendations to modify the processes to incorporate inherently safer technology/design (IST/ISD) measures, these recommendations would have to be resolved like any other recommendation. Neither did OSHA address how the feasibility or practicability of inherent safety measures would be assessed and how the feasibility would be documented. Presumably, the feasibility of IST/ISD measures would not be based on cost alone. In their proposed pre-publication RMP Rule EPA is proposing to define “practicability” as the capability of 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 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 proposing that the evaluation of practicability be first based on technological, environmental, legal, and social factors, with economic considerations evaluated last. EPA proposes 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. There is no indication at this time that OSHA will adopt the same definition of feasible or practicable in their STAA requirements.

AcuTech Explanation:

STAA is another term for an Inherently Safety Technology (IST) 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 some cases to changes to existing processes but have not mandated these changes. Processes may be modified by the substitution of chemicals, the minimization of chemical volumes, the moderation of process conditions, or simplification of the process to avoid complexity and human errors. EPA has proposed to perform the STAA evaluation as part of PHAs process, but has not described thus far any of the specifics of how this is to be accomplished.

The terms “feasibility” and “practicability” are key to determining when a facility can or should implement an IST measure or when it declines to do so. EPA’s definition of “feasibility” of inherent safety measures would be based on more than the cost of the measures alone. EPA is also proposing to include 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 proposing to define “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. As part of the evaluation of the environmental practicability of possible IST/ISD measures, EPA will allow the consideration of risk transfer. 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 risk overall. OSHA has not yet indicated if they will treat "feasibility and practicability in the same manner that EPA proposes.

The requirement to evaluate STAA/IST for PSM-covered facilities will add time to the PHA process that currently is not required to be spent (except in NJ and Contra Costa County, CA). Additionally, if OSHA requires the evaluation of publicly available IST/ISD 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 technical SME/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.

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 STAA requirement in the revised PSM Standard increases that pressure still more. For these reasons, STAA could represent a real dilemma for some facilities/companies in the PSM/RMP community.

Lastly, the primary concern with STAA studies is whether the regulators will have authority to demand technical changes or whether only the process of conducting a STAA process will be evaluated.

Defining the limits of a PSM-covered process.

This proposed change was not included in the 2013 RFI (and hence not addressed in subsequent OSHA documents such as the SBREFA review) and is new. Although OSHA's September 20, 2022, FR notice did not describe specifically how they intended to define the limits of PSM covered processes, OSHA has, over the years, issued written clarifications, interpretations, and enforcement guidance that provides some indication of thinking on how far a PSM covered process should extend. Examples include:

- Including critical utilities in a PSM program, even though the chemicals/materials in those utilities are not PSM covered themselves. OSHA's rationale is based on the effects of the failure of these utilities rather than their own inherent process safety hazards.
- Defining the extent of processes by utilizing the definition of process in the PSM Standard, which includes any vessels which are connected, and separate vessels located such that a highly hazardous chemical (HHC) could be involved in a potential release. Engineering and administrative controls required by the PSM standard to prevent catastrophic release of a covered HHC may not be used to determine the extent of a process.
- Considering each aspect of the process as defined to determine the extent of PSM coverage for each aspect. Aspects which do not contain HHCs but are interconnected or located nearby are part of the process. Such aspects may or may not be covered by the PSM standard based on whether the aspects could cause a HHC release or interfere with mitigating the consequences if there was a HHC release. If the aspects do not contain a HHC but could cause a HHC release or interfere with mitigating the consequences of a HHC release, then based on the employer's analysis, various elements of PSM would apply to these aspects. An example of this interpretation would be the process or storage equipment downstream of a reactor where the reactor and its inputs are covered by PSM, but the product made in the reactor is not a PSM covered chemical. In this case, if equipment failures (e.g., failure of a temperature control) or human error could cause a TQ or more of unreacted PSM chemicals to migrate downstream, then the downstream equipment should also be included in the PSM program. If it is determined that interconnected equipment downstream from the stipulated covered process cannot cause a HHC release or interfere with the mitigation of the consequences of a HHC release, and the equipment does not itself contain a TQ or greater amount of a HHC, then such equipment could safely be considered outside the limits or boundaries of the covered process.

AcuTech explanation: These interpretations and enforcement guidance have not been tested in the citation appeal process, or by the OSHRC or the courts, except for the inclusion of critical utilities. It is not clear if the above examples of interpretations defining the limits of a PSM covered process, or others will be proposed by OSHA in the revised PSM Standard, however, it does appear that this potential change is the vehicle (along with the next item in this white paper on MI program

scope) for implementing the 10th Circuit Court of Appeals ruling on including critical utilities in PSM programs (Wynnewood Case). Changing definition of the limits of a PSM covered process will have significant effects on industry PSM programs, as the boundaries of facility PSM programs will expand to include processes and equipment currently considered not PSM covered. The extent of covered facilities may greatly increase if all related utilities and adjacent processes are to be included in the regulations as a 'process'.

Expanding the Scope of the MI Element to Cover the Mechanical Integrity of Any Safety-Critical Equipment

The applicability requirements of the MI element of the PSM Standard - paragraph (j)(1) - currently specifies that six types of equipment be included in an MI program, presuming that the process/system containing the equipment is PSM covered. This list of equipment does not explicitly include several types of equipment that are critical to process safety, including fire protection equipment, testing equipment (e.g., calibrators, digital voltmeters, test pressure gages, etc.), structural components that support the weight or movement of fixed or rotating equipment (e.g., pipe supports, foundations, structural supports, etc.), critical utilities whose failure could contribute to or are safeguards against a release of PSM-covered materials (e.g., electrical power, cooling water, air, etc.), as well as other equipment that is important to process safety. The 2013 RFI did not offer any specific examples, but the September 20, 2022 FR notice did propose to include a definition of “critical” to the PSM Standard to the definitions paragraph.

AcuTech explanation: Since the October 2020 ruling by the 10th Circuit Court of Appeals regarding the inclusion of certain utility systems in PSM programs, OSHA has not issued interpretative or enforcement guidance for the ruling. This RFI item appears to be the vehicle OSHA will use to include the court’s ruling into the PSM Standard. If adopted this possible change would expand the scope of MI programs to formally include a broader list of equipment than current MI programs typically include, such as:

- *fire protection equipment*
- *testing equipment (e.g., calibrators, digital voltmeters, test pressure gages, etc.)*
- *structural components that support the weight or movement of fixed or rotating equipment (e.g., pipe supports, foundations, structural supports, etc.)*
- *critical utilities (e.g., electrical power, cooling water, air, etc.)*
- *any other equipment that is important to process safety.*

The 20 Sept 22 FR notice also includes a proposed change to the definition section of the PSM Standard -paragraph(b)- to add a definition of PSM “critical” but did not provide any description of what that definition would be (see item in this white paper of the definition of “critical”). Nor did the 20 Sept 22 FR notice offer any guidance on how to identify this equipment. However, it is likely that as this proposal evolves, it will include a review of the existing PHAs and LOPAs, project PHAs, facility siting analysis, or other hazard/risk analyses performed for a facility to 1) identify the equipment whose failure could cause a process safety event involving the release of PSM-covered materials or, 2) identify the equipment that has been credited as safeguards or independent protection layers (IPL) in these analyses and studies against such an event. These

two types of equipment would certainly be important to process safety and deserve to be included in an MI program so that the appropriate inspection, testing, and preventive maintenance (ITPM) tasks are performed to preserve the credits taken, as well as the MI program QA activities pertinent to the equipment design, construction, and spare parts management are performed.

The 10th Circuit Court’s ruling is not limited only to the scope of the MI program, but includes including these key utilities in the PSM program as a whole, so the other PSM elements beyond MI will have to be addressed by OSHA at some point. Perhaps when a draft regulation is issued, they will expand the applicability of critical utilities and the remaining PSM elements, or perhaps they will address it separately.

Amending paragraph (b) to include a definition of critical equipment

This proposed change was not included in the 2013 RFI (and hence not addressed in subsequent OSHA documents such as the SBREFA review) and is new. OSHA’s September 20, 2022, FR notice proposed adding a definition of “critical” to the definition paragraph of the PSM Standard – paragraph (b). This indicates that this new definition will be applicable in any other provision of the Standard where the word “critical” appears. It’s meaning pertaining to what equipment must be included in an MI program is already described in another item in the white paper. However, in the draft or final Standard OSHA might include “critical” in other PSM elements or in other contexts. OSHA did not describe in the FR notice what plans for using this important term.

AcuTech explanation: Although the 20 Sept 22 FR notice did not offer any guidance on how to identify critical equipment or in what other context “critical;” might be used in the PSM Standard, it is likely that OSHA will use the PHA element as the primary method for identifying or defining what is critical. Other analyses, that are currently part of the PHA process (including LOPAs if performed) or are proposed to be part of it in these new changes, e.g., facility siting analysis, human factors analysis, the analysis of natural events and loss of power, and STAA could also be used specifically as methods for determining what is critical to PSM. This will likely include existing process/unit PHAs and LOPAs and project PHAs performed at a facility to 1) identify the equipment whose failure could cause a process safety event involving the release of PSM-covered materials or, 2) identify the equipment that has been credited as safeguards or independent protection layers (IPL) in these analyses and studies against such an event.

Clarifying the MI element to better explain “equipment deficiencies”

This proposed change was not included in the 2013 RFI (and hence not addressed in subsequent OSHA documents such as the SBREFA review) and is new. Currently, the MI element defines equipment deficiencies as “equipment outside acceptable limits (defined by the process safety information).” No further guidance or clarification is given for this important term. This paragraph of the MI element generates a significant number of PSM citations during facility inspections by OSHA. The lack of better definition contributes to these citations as some problems with equipment may be treated as MI deficiencies or treated completely. OSHA did not explain in the September 20, 2022, FR notice how they intended to provide a better definition of this key term.

AcuTech explanation: The PSM Standard is still a performance-based regulation, and as such, OSHA typically refrains from defining terms that affect compliance with the regulation in such a way that there may be inadvertent limits on what those terms could mean. For example, providing examples of the types of equipment deficiencies would qualify as a deficiency for the purposes of the MI element of the PSM Standard, might be incorrectly interpreted that only those type of deficiencies is covered by the Standard and no others. This could despite typical language as “not limited to...” and other language that indicates that others could also be included. Possible explanatory criteria that some facilities have adopted in their MI deficiency procedures might provide better clarity:

- *Any loss of primary containment, no matter how minor.*
- *Equipment that cannot safely operate within the established safe upper and lower limits.*
- *Equipment that cannot meet the acceptability criteria for passing an inspection or test, even after adjustments allowed by the inspection/test procedure are made.*
- *Any equipment in the pressure boundary of a PSM process that is below its established retirement thickness.*
- *Safety or protective features in equipment or systems that are bypassed, removed, or impaired.*
- *The failure or non-functionality of any safeguard or independent protection layer credited in a PHA/LOPA.*

If OSHA adopts these or similar criteria for defining equipment deficiencies, that could help facilities apply the deficiency management provisions of the MI element more consistently, but their requirements or interpretation could vary from industry practices.

Clarifying the MOC Element with an Explicit Requirement to Include Management of Organizational Changes

The original intent of the MOC element in the PSM Standard did not include or contemplate organizational changes. OSHA’s interpretation of the PSM Standard MOC provisions is that if changes to personnel, budgets, etc., can affect process safety then they should be covered by MOC. Accordingly, in the 2013 RFI and the September 20, 2022, FR notice OSHA has proposed to revise the MOC element of the PSM Standard to include MOOC.

AcuTech explanation: Although it is not a universal practice, several companies and facilities in the PSM community have taken the initiative on their own in recent years to expand their MOC program to include management of organizational change (MOOC). Also, the scope of MOC programs in many facilities has been modified to include systems, equipment, and infrastructure that are well beyond the physical boundaries of the PSM covered processes. Therefore, adding organizational changes has not represented a major burden for the facilities that have adopted MOOC, however, it is a measurable investment of resources. Of course, if OSHA makes substantial changes to MOC in general to include MOOC, then the implementation burden could change. There are no criteria proposed on what constitutes compliance.

Revising the Emergency Response Element to require coordination of emergency planning with local emergency response authorities

The emergency response element of the PSM Standard only addresses onsite emergency action and response activities, which is consistent with OSHA's charter to regulate worker safety and health. Therefore, like EPA for the RMP Rule, OSHA is proposing to revise the emergency response element to require facility coordination with local offsite emergency responders.

AcuTech explanation: If adopted this possible change to the PSM Standard would bring it more in line with the requirements of EPA's RMP Rule (40 CFR 68). It will also extend the scope of a PSM covered facility's emergency response program to include activities which are offsite, which is typically beyond OSHA's jurisdiction. Many facilities in the PSM community are covered by both the PSM Standard and the RMP Rule, and most of those facilities are active in Local Emergency Planning Committees and other organizations and activities that promote and strengthen their relationships with local emergency responders. This item, if adopted, may cause issues where local emergency responders do not have the time or assets to formally coordinate response procedures and drills and invokes whether the facilities are 'responding facilities' or not.

Expanding the Employee Participation element to strengthen participation and include stop work authority

This proposed change was not included in the 2013 RFI (and hence not addressed in subsequent OSHA documents such as the SBREFA review) and is new. In the September 20, 2022, FR notice OSHA did not indicate what aspects of employee participation required strengthening. However, this element historically has not generated large numbers of citations, so it is not clear what common deficiencies OSHA desires to correct with regulatory changes. Although variations of it have been in practice for years, the recognition of stop work authority (SWA) as a distinct element of a process safety program was first made by the Bureau of Safety and Environmental Enforcement (BSEE) as part of the Safety and Environmental Management System (SEMS) regulation for offshore oil and gas facilities following the Macondo incident in the Gulf of Mexico in 2010. SWA empowers facility personnel (and sometimes contractors and visitors) to stop any operation, maintenance work, or any other onsite activity if a safety problem is or has developed. As part of SEMS BSEE also included a related element called Ultimate Work Authority (UWA), which identified which party is responsible for making key safety related decisions on offshore platforms. OSHA did not include UWA in this proposed change to the PSM Standard.

AcuTech explanation: Stop work authority (SWA) has become a common practice in recent years and many facilities have adopted this practice on their own. Some facilities have included SWA in their operating procedures and others have chosen to include it in a more general PSM program element such as Conduct of Operations or Operational Discipline. Regardless of where in a PSM program it is inserted, the most important aspects of SWA are the training of personnel so that they recognize their authority to stop work when warranted, and the cultural acclimation to reinforce the authority so that junior personnel are not hesitant to stop the work of more senior

personnel when it is warranted. Culture underpins everything in a PSM program, and SWA is particularly sensitive to the prevailing process safety culture in a facility.

Amending the Incident Investigation element to require root cause analysis

This proposed change was not included in the 2013 RFI (and hence not addressed in subsequent OSHA documents such as the SBREFA review) and is new. Like EPA for the RMP Rule, OSHA is proposing to require facilities to conduct a root cause analysis (RCA) as part of an incident investigation of process safety incidents and near misses. OSHA did not address what, if any, RCA methods would be acceptable, how the RCA is to be documented, or who should conduct it.

AcuTech Explanation: The current PSM Standard requires that incident investigations identify the “causal factors” for the incident or near miss but does not explicitly require the root causes be identified. 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. There are various 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. As stated above, RCA is a common industry practice and most facilities in the PSM community, or their parent companies, are likely to have an RCA method in place that they have been using for years. Therefore, the effect of this proposed change to the PSM Standard may be minimal. But for companies that have not conducted RCA this could bring substantial change.

Revising the Audit element to require third-party compliance audits

Currently, the PSM Standard requires triennial audits of PSM programs. However, there are no stipulations regarding who should perform the audits, their qualifications, or their independence from the facility or PSM program being audited. In the 2013 RFI, OSHA noted that the CSB identified flawed internal PSM audits as a contributor to the BP Texas City incident. OSHA also notes that the Safety and Environmental Management System (SEMS) regulation for offshore oil and gas facilities has been amended by the BSEE to require third-party audits of SEMS programs by auditors accredited by the Center for Offshore Safety. Like EPA for the RMP Rule, OSHA is proposing to include this requirement in the PSM Standard. The 2013 RFI contained a summary of BSEE’s requirements for third party SEMS auditors, and cited the objectivity of third parties, as well as the contribution of poor PSM audits to some major incidents. However, the 2013 RFI did not include specific provisions for third party auditor independence and qualifications.

AcuTech explanation: If adopted this item would have a significant effect on how PSM audits are conducted. Some facilities use third party auditors already, but it is not a universal practice. Even if the detailed requirements of how this is to be implemented are relatively simple, there will be

some added cost for performing triennial PSM audits. However, if more detailed provisions are included specifying auditor independence and qualifications/certifications, as well as possible obligations for the third-party auditors to report the audit results beyond the facility/company then the impact of this item could be more profound. No doubt this will increase the level of attention on PSM audits.

Expanding the requirements of §1910.109 to cover dismantling and disposal of explosives, blasting agents, and pyrotechnics

In addition to the PSM Standard, in the 2013 RFI and September 20, 2022, FR notice OSHA is proposing to include the dismantling and disposal of explosives, blasting agents, and pyrotechnics in the PSM Standard. Currently, the Standard only includes the manufacture of these materials. This is principally a result of an incident involving the dismantling and disposal of explosives in Hawaii in 2011. This regulation - 1910.109 - is related to the PSM Standard because the PSM Standard currently covers the manufacture of explosives, but it is a separate regulation.

AcuTech explanation: The PSM Standard currently applies only to the manufacture of explosives, but not to the storage, distribution, or use of them. Neither the 2013 RFI nor the September 20, 2022, FR notice included any proposal to expand this scope, so if the PSM Standard only is relevant for explosives manufacturing facilities, it should have an effect mainly on those using and disposing of explosives. This may include the storage, distribution, mining and petroleum industries, for example.

Updating §1910.106 and 1910.107 based on the latest applicable consensus standards

In the 2013 RFI and the September 20, 2022, FR notice OSHA is proposing to update its Flammable Liquids Standard (1910.106) and Spray Finishing Standard (1910.107). OSHA first published these standards in 1974 and based the requirements on NFPA consensus standards from the 1960s. The format and requirements of the standards are significantly out of date, and need updating based on the latest applicable consensus standards. These regulations are related to the PSM Standard because they also cover flammable materials, but they are separate regulations. These two standards were last revised in May 2012.

AcuTech explanation: Neither the 2013 RFI nor the September 20, 2022, FR notice included any proposed changes to the definition of a flammable liquid, so the impact the PSM community should have limited impact by this item as there should be no additional PSM program requirements. However, §1910.106 is the government's version of NFPA 30, the Flammable and Combustible Liquids Code and the requirements in these two documents are very similar (but not identical). The requirements of this separate OSHA standard impose numerous design, construction, and operational requirements when flammable liquids are manufactured, stored, or handled at a facility. Facilities that are covered by the PSM Standard are also covered by 1910.106, and possible 1910.107. For those subject to the §1910.106 and §1910.107 standards these changes may impact them depending on the changes proposed.

Updating the regulations addressing the storage, handling, and management of ammonium nitrate

In the 2013 RFI and the September 20, 2022 FR notice OSHA is proposing to include ammonium nitrate (AN) in the PSM Standard and/or in 1910.109) to increase the safety of practices for storing, handling, and managing ammonium nitrate, given the accident in West, TX in April 2013, as well as other incidents, such as the ammonium nitrate explosion in Beirut in 2020.

AcuTech explanation: This RFI item could affect the fertilizer industry by including many facilities that manufacture, store, distribute, sell, and use AN under the PSM Standard that are currently not covered by the Standard.

Changing enforcement policy of the PSM exemption for retail facilities

In the 2013 RFI and the September 20, 2022, FR notice OSHA is proposing to re-define the term “retail.” In the original PSM Standard OSHA exempted retail facilities but did not define “retail.” However, OSHA’s intent was to exempt facilities that sell small containers of PSM-covered materials to the public. OSHA also clarified the Standard stating that a facility that is primarily engaged in selling anhydrous ammonia to farmers by filling farmer’s fertilizer application nurse tanks from bulk storage (a wholesale operation under the NAICS definition) could qualify for the §1910.119(a)(2)(i) retail facilities exemption because the farmers were the “end users” of the product. Applying the retail facility exemption in this way to these ammonia distributors is inconsistent with the normal meaning of “retail” and the preamble’s explanation of the purpose of the exemption. As stated in the preamble, OSHA chose to exclude retail facilities from PSM coverage because the limited container, package, or allotment sizes of the chemicals typically found at these facilities do not present the same safety hazards as those encountered at establishments working with large, bulk quantities of materials. As a result of increased workplace hazards associated with large, bulk quantities of highly hazardous chemicals, OSHA believed that only retail trade facilities listed in NAICS sectors 44 and 45 that sell highly hazardous chemicals in small containers, packages, or allotments to the public should qualify for the retail facilities exemption. OSHA attempted to re-define “retail” in this way in XX via interpretation in an enforcement memo to its field offices, but this method of re-definition was struck down by the DC Circuit Court of Appeals. However, the Court’s ruling was based on procedural grounds, not on the merits of covering anhydrous ammonia fertilizer distributors under the PSM Standard. The Court stated that if SOHA wanted to expand PSM coverage to these distributors, they must revise the PSM Standard itself. This proposed change would satisfy the Court’s objections.

AcuTech explanation: Many facilities (approximately 3,000) currently distribute anhydrous ammonia to farmers from bulk storage facilities. They would lose the current PSM exemption that they have if this possible change to the PSM Standard is adopted. This would be a major expansion of the size of the PSM community. Most of these distributors are small agricultural businesses, although some are part of larger companies.

Changing enforcement policy for highly hazardous chemicals listed in Appendix A of the PSM Standard without specific concentrations

In clarifying the PSM Standard in the Compliance Directive for PSM (CPL 02-02-045, formerly CPL 2-2.45A Ch-1) in 1994, OSHA used the maximum commercial grade of Appendix A chemicals to invoke PSM coverage if the Standard itself did not specify a concentration to be used (the Standard specifies concentrations for 11 chemicals). However, OSHA believed the use of the maximum commercial grade may not in all cases provide a sufficient threshold for determining PSM coverage, as revealed in CSB's investigations. Accordingly, in the 2013 RFI and the September 20, 2022, FR notice OSHA is proposing to adopt the EPA's mixture rule for the RMP Rule as a simpler and more practical approach to addressing hazards associated with Appendix A chemicals that do not have listed concentrations. Using the same mixture rules as in the RMP Rule, OSHA would consider a PSM-listed chemical in a mixture to be covered if the concentration of the chemical was greater than one percent and the calculated weight of the chemical in the mixture was greater than the threshold quantity. Also, like the RMP Rule, chemicals with a partial pressure of less than 10 mm Hg would be exempt from PSM coverage.

AcuTech explanation: OSHA believes that the adoption of the same criteria used in the RMP Rule for treating mixtures of toxic materials represents a more practical, consistent, and straightforward approach to coverage of Appendix A chemicals under the PSM standard. The confusion caused by the different definitions of "commercial grade" used by different chemical vendors did not help facilitate compliance with the PSM Standard. Since many PSM covered facilities are also covered by the RMP Rule, and there is some commonality between the PSM and RMP covered toxic materials. Therefore, these facilities are already applying the revised mixture rule to many of the materials the RFI item would seek to include. Therefore, the impact on the PSM programs of these facilities should be minimal. However, there is a possibility that these proposed changes could expand the number of processes.

Including requirements for employers to develop a system for periodic review of and necessary revisions to their PSM management systems (previously referred to as "Evaluation and Corrective Action")

This proposed change was not included in the 2013 RFI (and hence not addressed in subsequent OSHA documents such as the SBREFA review) and is new. This September 20, 2022, FR notice proposed change would subject PSM related policies, procedures, and written practices to periodic review and where necessary, revision. OSHA did not specify an interval for such reviews, nor how they were to be documented.

AcuTech explanation: The impact of this proposed change may be minimal, as most facilities, or their parent companies have detailed requirements in the document management systems that require periodic review and revision of all the procedures. This has become a typical practice since the electronic creation and management of documents became common. It is also a required practice in quality management systems (e.g., ISO-9000) that are common programs in PSM community facilities. It would, however, formalize requirements for periodic review and revision

that may not be as common for some companies that are operating to a management system unchanged over time.

Requiring the development of written procedures for all elements specified in the standard, and to identify records required by the standard along with a records retention policy (previously referred to as “Written PSM Management Systems”)

This proposed change was not included in the 2013 RFI (and hence not addressed in subsequent OSHA documents such as the SBREFA review) and is new. Currently, only the Employee Participation, Operating Procedures, Mechanical Integrity, and Management of Change elements of the PSM Standard require that written procedure be established that describes how the facility intends to implement that element of PSM. The Emergency Response element requires that employers “establish and implement an emergency action plan,” but having that emergency action be written is not an explicit requirement. The remainder of the requirements of a PSM program need to be executed to achieve compliance with the regulation, but the requirement for a written procedure for each PSM element are inferred. This September 20, 2022, FR notice proposed change would modify this to require explicit policies, procedures, or written practices each element of a PSM program.

AcuTech explanation: The impact of this proposed change may be minimal as most facility PSM programs already contain written procedures for each element. Some of these procedures merely repeat back verbatim what is in the PSM Standard, but most of them provide facility-specific guidance on how to manage that element of the PSM program. Nonetheless, it formalizes the requirements for documentation and retention, which might be substantial burden for some.

Conclusions

The 2013 RFI and September 20, 2022, FR notice and their significance make these developments together one of the most important for industry to consider since the PSM Standard was enacted in 1992. The RFI and FR notice represent a starting point for new PSM rulemaking. Some of the proposed items described in this white paper may be removed from consideration, or more might added. These should not be considered as a final list.

Some of the more likely proposals, such as expanding the list of chemicals to include reactive chemicals and ammonium nitrate, and the expansion of the scope of the Standard, such as the removal of exemption for atmospheric storage of flammable liquids and the re-definition of the retail exemption, would themselves be very wide-ranging in their impacts and would expand the PSM community itself. Industry should closely follow subsequent developments as the rulemaking process unfolds and consider the specific impact of relevant changes to their own PSM programs and their operations to understand the potential organizational and administrative burdens and benefits.

Finally, EPA is simultaneously considering changes to the RMP Rule that includes many of the same items in the 2013 PSM RFI and September 20, 2022, FR notice. Of course, EPA may specify different approaches than OSHA, even for the same item. Therefore, facilities whose processes



are both PSM and RMP covered will need to carefully plan any changes to their PSM and RMP programs to minimize any duplication of effort and to the extent possible harmonize their process safety policies, practices, and procedures so that only one document is developed and implemented for each PSM/RMP element where possible. This has been possible in the past because the language of the RMP Program 3 prevention program regulations was identical to the PSM Standard. This was intentional by design on the part of EPA. However, if the contents of the PSM Standard and the RMP Rule begin to diverge as each agency seeks to update and modernize their own regulations, different requirements may begin to emerge that will require separate procedures or practices. Hopefully, these differences will be minimal or even non-existent.

AcuTech

AcuTech specializes 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 of 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 following CCPS publications: *Guidelines for Auditing Process Safety Management Systems, 2nd Ed.*; *Guidelines for PSM Metrics*; *Guidelines for Chemical Transportation Safety, Security, and Risk Management*; *Inherently Safer Chemical Processes, 3rd Ed.*; and *Essential Practices for Creating, Strengthening, and Sustaining Process Safety Culture*.

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