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**Via Electronic Submission**

October 29, 2014

OSWER Docket,
EPA Docket Center, Mail Code 2822–1T,
Environmental Protection Agency,
1200 Pennsylvania Avenue, NW.,
Washington, DC 20460

RE: Accidental Release Prevention Requirements: Risk Management Programs Under the Clean Air Act, Section 112(r)(7); Request for information.
Docket ID No. EPA–HQ–OEM–2014–0328.

To the Docket:

The Chlorine Institute is pleased to respond to the U.S. Environmental Protection Agency (EPA) Request for Information (RFI), Docket No., EPA–HQ–OEM–2014–0328 published in the Federal Register on July 31, 2014 at 79 Fed. Reg. 44604 – 44633.

The Chlorine Institute ("CI" or the "Institute") is a 195 member, not-for-profit trade association of chlorine producers worldwide, as well as chlorine packagers, distributors, users, and suppliers. The Institute's North American Producer members account for more than 93 percent of the total chlorine production capacity of the U.S., Canada, and Mexico.

Because of chlorine's nature and its widespread and varied use, the promotion of its safe handling has long been an accepted responsibility of its producers, packagers, distributors and users. From production to disposal, we are committed to ensuring the safe and proper handling of these important materials. The Chlorine Institute appreciates the opportunity to submit our comments in response to EPA's RFI on the Risk Management Plan regulation.

## Summary

The Chlorine Institute supports the goal of EPA's RMP regulations which includes reducing chemical risk at the local level by providing information to help local fire, police, and emergency response personnel along with providing information to the members of the public to help in understanding the chemical operations taking place in their community. However, it is unclear within the breadth of the RFI document which requests comments on at least 19 topics with a multitude of associated options how the potential modifications will enhance chemical facility safety. Our specific concerns are provided below.

### Need for Changes to the RMP Regulations is Unclear

The Chlorine Institute believes that compliance with the existing RMP standard is effective in reducing chemical risk at chemical facilities and that the process safety standards in the United States are strong

and effective. CI members take process safety and compliance with regulatory requirements very seriously.
However, the examples of facility safety concerns articulated by those speaking to this issue have actually been examples of facilities not complying with existing regulations (outlier facilities) and not from an identified lack of or gap in existing requirements. The Institute believes that developing additional regulations does not address the problem of outlier operations that are either unfamiliar or unwilling to comply with the significant and comprehensive chemical safety standards that are presently in place. We believe that resources could be better utilized through awareness and training efforts and, in some cases, enforcement efforts.

Harmonization and of the PSM and RMP Standard
Additionally, CI is concerned with the timeline presented by EPA in its RMP revision process. Executive Order (EO) 13650 was specifically created to encourage agency coordination and improve the exchange and sharing of information. There is an EO 13650 Action Plan "requirement" that EPA and OSHA "harmonize" their regulations. However, EPA has committed, in the EO Working Group Action Plan, to releasing a proposal for the revised RMP in one year and finalizing the rule within two years. OSHA is on a seven-year rulemaking timeline for their PSM regulation while EPA is on a two-year track. Given the approach of both the EPA and OSHA, agency coordination will be challenging which could significantly impact the regulated community.

CI recommends that EPA and OSHA work as closely together as possible to coordinate both of their review and rulemaking activities so that the regulated community will be able to effectively execute a strong, stable and consistent, chemical safety program which is the goal for all RMP stakeholders.

## Specific Issues of Concern for CI Members:

### Updating the List of Regulated Substances - Adding Reactive Substances and Reactivity Hazards

As a general statement, CI is not aware of any significant changes that would justify the revision of the RMP Standard in updating the list of regulated substances. Additionally, we request that EPA publish its research and data-gathering methodology for identifying, defining, and quantifying the hazards associated with a chemical. They should also use a formal, scientific-based approach to evaluate chemicals and, ultimately, to demonstrate that any proposed changes to the RMP standard are justified and would actually enhance safety.

To respond to EPA's specific question of listing chemicals based on the hazards of their reaction byproducts, the Chlorine Institute believes it is not a feasible approach. It is virtually impossible for national listing decisions to take into account process-and site-specific factors, which can vary widely due to the lack of a strong risk assessment methodology to screen reactive hazards. The number of chemicals that can experience adverse reactions with others, or with water or air, is very large. The possible combinations of these materials makes trying to designate which chemicals represent reactive hazards and which do not, a task that should not be taken without identifying a valid and consistent methodology to identify threshold hazard quantities or concentrations

The overall reactive hazard of a chemical depends not only on the intrinsic reactivity of the chemical but more importantly on extrinsic circumstances (e.g., change in operating conditions, lack of coolant, presence of contaminant, concentration changes, sequence of batch steps, agitation or lack thereof, and many others). Any chemical, which is benign at normal conditions, may become violent in presence of other chemicals or extreme process conditions. Thus, a list does not in any way solve the problem and

in many respects may introduce other unintended consequences (i.e., facilities may think that if something is not on the list, there is no hazard or risk).

Reactivity hazards are already addressed throughout OSHA's PSM Standard and the current RMP Standard. It is specifically required as part of the process safety information element. It is also used as input to process hazard analyses, pre-startup safety reviews, operating procedure development, pressure relief and flare system design, mechanical integrity programs, and management of change. Finally, it is utilized in developing training and contractor programs, conducting incident investigations and planning for emergencies.

Consequently, the Chlorine Institute does not recommend the expansion of the Appendix A list to include reactive substances and reactivity for coverage under EPA's RMP regulation.

Lowering the Threshold Quantity for Regulated Substances Currently on the List

CI believes that the current threshold quantities for regulated chlor-alkali-related substances manufactured and/or stored and used by its members are appropriate for managing the potential risk of off-site consequences from the accidental release of these substances. We feel that any consideration of lowering such thresholds must be evidence-based and tied to relevant data derived from actual accident histories.

## TQs and Off-site Consequence Analysis Endpoints for Regulated Substances Based on Acute Exposure Guideline Level Toxicity Values

In the RFI, EPA is considering the recalculation of RMP reporting thresholds and toxic endpoints for off-site consequence analyses (OCA) based on the use of Acute Exposure Guideline Levels (AEGLs), which are developed by the National Advisory Committee (NAC) for AEGLs for Hazardous Substances. The Chlorine Institute disagrees with EPA's assertion that this method better reflects the potential for adverse effects of an accidental release upon a community.

The current TQs are based on the Immediately Dangerous to Life and Health (IDLH) value developed by the National Institute of Occupational Safety and Health (NIOSH). IDLH guidelines are acute exposure guidelines. Since the establishment of the IDLH values in the 1970s, NIOSH has continued to review available scientific data to improve the protocol used to derive acute exposure guidelines, in addition to the chemical-specific IDLH values. **The IDLH methodology reflects the modern principles and understanding in the fields of risk assessment, toxicology, and occupational health and provides the scientific rationale for the derivation of IDLH values based on contemporary risk assessment practices**. Accordingly, IDLH values are based on health effects considerations determined through a critical assessment of the toxicology and human health effects data. This approach ensures that the IDLH values reflect an airborne concentration of a substance that represents a high-risk situation that may endanger workers' lives or health.

AEGLs on the other hand are intended to be guideline levels used during rare events or single once-in-a-lifetime exposures to airborne concentrations of acutely toxic, high-priority chemicals [NAS 2001]. The threshold exposure limits are designed to protect the general population, including the elderly, children or other potentially sensitive groups. However, unlike the IDLH guidelines the AEGLs approach applies a considerable amount of uncertainty factors and time extrapolations. For example, the AEGL 1 and 2 for chlorine were developed based on a combination of studies that tested healthy human subjects as well as atopic individuals (Rotman et al. 1983; Shusterman et al. 1998) and asthmatic patients (D.Alessandro et al. 1996). Atopic and asthmatic individuals have been identified as susceptible populations for irritant

gases. The highest no-observed-adverse-effect level (NOAEL) for notable irritation and significant changes in pulmonary function parameters was 0.5 ppm in two studies. The concern with these **studies is that only a total of 16 individuals were tested.** Eight atopic subjects were exposed for 15 minutes in one study (Shusterman et al. 1998), and eight healthy exercising individuals and an exercising atopic individual were exposed for two consecutive 4-h periods in the other (Rotman et al. 1983). And in the absence of human data, animal lethality data served as the basis for AEGL-3. The AEGL-3 values were derived from a 1-h concentration of 200 ppm and then utilizing an Uncertainty Factor (UF) to extrapolate from rats to humans and to account for differences in human sensitivity. The susceptibility of asthmatic subjects relative to healthy subjects when considering lethality is unknown, but the data from two studies with human subjects (16 human subjects) showed that doubling a no-effect concentration(not a no adverse effect ) for irritation and bronchial constriction resulted in potentially serious effects in asthmatic subjects. Time-scaling was also used due to the use of animal studies which adds adding another level of conservatism.

The use of animal studies, the limited amount of human studies, and the lack of a systematic review of the current AEGLs, and the use of uncertainty factors is not a reasonable approach to setting RMP OCA endpoints. Given the use of the OCA for community response planning and given there is a finite amount of available resources it would be prudent to continue to utilize the IDLH values which are based on health effects considerations determined through a critical assessment of the toxicology and human health effects data.

## Revising Additional RMP Elements

The RFI states that EPA is interested in receiving and reviewing information regarding the management system elements that were identified in the OSHA RFI, but with a focus on the applicable RMP requirements. U.S. EPA is considering incorporating three (3) elements taken from the Risk Based Process Safety Program by the Center for Chemical Process Safety:

(1) Measurements and metrics,
(2) Management review and continuous improvement, and
(3) Process safety competency.

The Chlorine Institute believes that incorporating these elements into the RMP standard blurs the jurisdictional line between the RMP and PSM programs which has already created confusion in the regulated community. There has not been reasoning or information put forth by any agency indicating that the existing PSM regulation does not adequately include the process safety elements necessary to develop an effective performance-based PSM system.

The management system currently under the RMP rules is essentially a system defined by facility managers for integrating the implementation of the risk management program elements and assigning responsibility for that implementation. The extent of the management system will depend on the size and complexity of the source. At many small sources, the appointment of a person or position that has the overall responsibility for the development, implementation, and integration of the risk management program elements, may satisfy the management system requirement. For larger sources, separate divisions may be responsible for overseeing different elements of the risk management program.

An effective management system helps to document the integration of facility operations and provides a way to ensure that each department involved in the process understands its responsibilities and who should be contacted when changes or other concerns arise. As the rule currently stands an operating

entity has the flexibility to design and manage the management system in a way that works best for that operation.

CI certainly supports the use of metrics as part of a safety program and we understand the value of measuring certain process safety activities. However, we do not support the requirement of lagging PSM metric indicator collection and evaluation via regulation. While lagging indicators may provide insight into an organization's past process safety performance, there are limits to how this data can be utilized as a meaningful measurement and comparison point.

In addition, leading PSM metrics cannot be effectually regulated. Even more than for lagging metrics, leading metrics simply do not lend themselves to standardization and cannot be successfully employed across organizations or industries, as they tend to be very specific to an organization and often to an individual site.

The second element, management review and continuous improvement, which focuses on the "due diligence" of management reviews that fill the gap between day-to-day work activities and formal audits is clearly a subjective standard, where standards or requirements would be difficult to develop and even more difficult to enforce. Ultimately, this could only be measured by the number of management reviews which then becomes a recordkeeping requirement and nothing more. While management reviews are a tool used by many in industry the use of that tool is best left to the implementing organization to best manage its program, its specific operations, and company culture.

EPA is also requesting comments on including three interrelated activities: (1) continuously improve on knowledge and competency, (2) ensure appropriate information is available to those who need it, and (3) consistently apply lessons learned. The main focus of this competency element is organizational learning so that process knowledge can be applied to situations in order to manage risk effectively. CI does not disagree with the concept and value of operating entities sharing lessons learned. The use of CI pamphlets as well as our seminars and workshops actively encourage the sharing of safety information. However, such elements are not well-suited to prescriptive regulation or to consistent, rational enforcement by government agencies. They would be ineffectual and confusing as regulatory requirements and, as such, should not be added to the current regulations.

## Expanded Incident Investigation/Accident History

Under the existing PSM and RMP requirements regulated facilities are required to investigate incidents that resulted in, or "could reasonably have resulted in, a catastrophic release of a hazardous chemical." However, EPA is now considering an additional requirement to have facilities report near misses in addition to reporting their five-year history of accidents from covered processes resulting in death, injury or significant property damage. EPA is also asking whether companies should be required to conduct a root cause investigation, complete their investigations by certain deadlines and share information with the public about incidents and near misses.

The Chlorine Institute supports the use of root cause investigations where it is clear that an incident could reasonably have resulted in a catastrophic release as is required per the existing PSM Standard and RMP regulation. However, the term "near miss incident" is difficult to define across the board at a national level because what might be considered a near miss incident at one location may not be a near miss at another location due to the specifics of the operation. Further, EPA has not provided any examples of facility incidents that we are aware of where the current incident investigation procedures were either inadequate or contributed to a chemical safety incident.

## Third Party Compliance Audits

The Chlorine Institute believes that audits are an integral part of a strong process safety program but it is unfamiliar with any data that demonstrate or even strongly suggest that those third-party auditors provide the highest degree of audit objectivity or are more effective overall than any other form of audit. We do believe that the mandated use of third-party auditors would be overly burdensome and unjustified given the lack of reliable data in this area. CI believes that employers should be afforded the discretion to choose the audit method best suited to their unique operations including self-audits, second-party audits, or third-party audits.

On the other hand, company-led audits can be far more effective in actually addressing issues uncovered during an audit, due to the company auditor's intimate knowledge of the organization and how it functions. Using common audit questions and a standardized scoring system across the company also allows for the ready comparison of results across sites, including consistent report-writing and recommendation-tracking across the company. And as many can attest to, using internal resources broadens PSM management system education while leveraging the auditor's detailed knowledge of the organization and how it functions.

## Define and Require Evaluations of Updates to RAGAGEP

Recognized and Generally Accepted Good Engineering Practices (RAGAGEPs) are engineering, operation, or maintenance activities based on established codes, standards, published technical reports or recommended practices or a similar document. RAGAGEPs detail generally approved ways to perform specific engineering, inspection or mechanical integrity activities, such as fabricating a vessel, inspecting a storage tank, or servicing a relief valve. RAGAGEP also recognizes that there is not one way to solve a given problem that provides similar levels of risk reduction for a diverse set of chemical processes.

The Chlorine Institute has serious doubts that RAGAGEP can be a single document, code, standard or practice. Covered employers must be able to utilize consensus guidance to the specific situation in each individual workplace. Also, EPA should recognize that employers with the support of technical experts and professionals are in the best position to analyze the specific conditions and concerns at a facility and to decide what is recognized and generally accepted good engineering practices as it is they who are the most familiar with the ongoing operations at that workplace

The Chlorine Institute believes that adding a definition for RAGAGEP could be useful to help owners better understand requirements under the standard. A definition for RAGAGEP could also assist OSHA inspectors in understanding the correct standards that are applicable to a given type of facility. However, the definition of RAGAGEP should not take away the ability of a facility to identify which RAGAGEP is most appropriate to their operations.

## Emergency Planning and Coordination with Local Emergency Response Authorities

The Chlorine Institute believes that the requirement for coordination with local emergency responders is already adequately addressed in the multiple interconnected standards as well as OHSA's 29 CFR 1910. 38. This particular OSHA regulation provides the minimum requirements for an emergency action plan including that a facility must have procedures in place for reporting a fire or other emergency information to local responders. An additional reporting requirement will not provide an improved level of workplace safety.

Currently, many companies already provide information to various regulatory agencies and organizations as part of other regulatory requirements including EPA's Risk Management Plan, EPA's SARA reporting requirements, and the DHS's Chemical Facility Anti-Terrorism Standard (CFATS) program. Prior to adding an additional facility reporting requirement OSHA should instead look to how it can best coordinate and harmonize the already established emergency response planning information that exists within other regulatory agencies.

## Mechanical Integrity of Any Safety-Critical Equipment

The Chlorine Institute believes that the existing six categories currently listed in Paragraph (j) of the existing PSM standard, the RMP regulations as articulated in § 68.73(a) of the RMP regulation and related industry standards and codes for good engineering practices associated with RMP § 68.56(d) sufficiently cover safety critical equipment involved in the handling of highly hazardous chemicals. And EPA has not provided any reasoning or examples in the RFI to explain how the existing standard is not adequately addressing safety critical equipment or how chemical safety would be improved by the options presented by EPA in the RFI.

CI believes that a risk-based approach already exists in the current PSM standard and is adequate to address mechanical integrity safety concerns. Any additional listing of covered equipment which is not risk-based could result in the utilization of already burdened facility resources to cover less critical equipment taking away from critical site-specific equipment.

## Promoting Inherently Safety Technology (IST)

In its original RMP rulemaking EPA acknowledged that it did not believe that an IST requirement would produce additional benefits beyond those existing under the general program structure. EPA acknowledged that assessment of inherently safer design alternatives has the greatest benefit in the development of new processes. Industry generally examines new process alternatives to avoid the addition of more costly administrative or engineering controls in order to mitigate a design that may be more hazardous in nature. Although some existing processes may be misconceived as being inherently less safe than other processes, EPA believed these processes could be safely operated through management and control of the hazards without spending resources searching for unavailable or unaffordable new process technologies.

The Chlorine Institute does not believe that circumstances have changed to alter the above approach to IST. Inherently safer approaches or safer alternatives have been and will continue to be considered by facilities as a matter of course. Chemical facilities consider IST in preparing Process Hazard Analyses (PHAs) that are required for both the PSM and RMP standards. As EPA has acknowledged previously, PHA teams regularly suggest viable, effective (and inherently safer) alternatives for risk reduction which may include features such as inventory reduction, material substitution and process control changes. These changes are made as opportunities arise, without regulation or adoption of completely new and unproven process technologies.

Because there is no accepted methodology for objectively measuring whether certain process parameters are inherently safer, it is not possible to determine whether certain particular measures are "inherently safer" than others. Analyzing process changes requires considerable judgment by facility personnel teams with expertise in process safety, operations, health, environmental issues and security because the benefits of potential risk reduction measures must be balanced against a host of other

factors such as employee safety, public safety , environmental impact and ongoing operation and maintenance costs.

Consequently, it is still the facility operator who is in the best position to have a comprehensive picture of what may or may not be feasible and how the facility environment will be impacted by process changes. Companies must be permitted to continue to use all risk management tools and options at their disposal, and the consideration of available options must be placed in the context of the complexities of their unique operating environments. Because of these complexities, regulating the use of safer alternatives is not practicable. No one regulatory program addresses the holistic safety and security environment of a given facility.

## Safety Case

A safety case regime requires companies to adopt a systematic hazard management framework. This means they must identify all major hazards and develop plans for how these hazards will be managed. In particular, they must identify the controls that will be put in place to deal with the identified hazards, and the measures that will be taken to ensure that controls continue to function as intended. This part of the safety case framework is already in place for many hazardous industries in the US. For instance for all process industries onshore, and that includes petroleum and petrochemical industries, the federal process safety management standard requires operators to have such a framework.

While at first look the Safety Case may have appeal, there are many complexities in the implementation of them that could have unintended consequences or difficulties or cost, and which have not been evaluated much like the concerns with Inherently Safer Technology. Developing a safety case requires significant resources, not simply mapping the existing RMP document to a new format, for both the regulated community and the regulatory agencies at a time when resources are being pulled in many directions. For such a system to work, all facility operators and all regulators would need extensive knowledge about and would need to constantly keep current on the latest safety measures and trends. This would be a monumental task, particularly for regulators, as best practices vary depending on the segment of the extremely diverse industries that handle and store chemicals. All this while there has not been a strong demonstration of how a “safety case” regime will result in a higher level of safety in actual operations over a fully functioning and properly managed safety and environment management system other than it is used in a few other countries.

## Conclusion

As stated in the beginning of our comments the Chlorine Institute believes that compliance with the existing RMP standard already in place is effective in reducing chemical risk at chemical facilities. And compliance with already existing regulations is more likely to contribute to the reduction of process hazards and chemical incidents than the promulgation of additional requirements for facilities. We recommend that resources should be utilized in awareness and training efforts as well as enforcement activities where necessary rather than by making changes to the existing regulatory system.

Additionally, CI is concerned with the timeline presented by EPA in its RMP revision process. CI recommends that EPA and OSHA work as closely together as possible to coordinate both their review and rulemaking activities so that the regulated community will be able to effectively utilize existing resources while building a strong, stable and consistent, chemical safety program which is the goal for all RMP stakeholders.

The Chlorine institute respectfully requests that EPA take into careful consideration the points provided in this correspondence prior to moving forward with any changes to the RMP standard. The Institute stands ready to assist EPA in any manner during its deliberations in this important matter.

Sincerely,

Therese Cirone
VP, HESS