



U.S. Department of Labor
Occupational Safety & Health Administration
200 Constitution Ave., NW
Washington, DC 20210

March 31, 2014

Re: Comments on Executive Order 13650, Section 6(a): Solicitation of Public Input on Options for Policy, Regulation, and Standards Modernization, Docket Number OSHA-2013-0026

We thank President Obama for signing Executive Order 13650, which directs federal agencies to improve the safety of our chemical plants and prevent future chemical disasters. As part of the Executive Order, we appreciated the opportunity to testify at two listening sessions in Washington, DC, and we welcome the opportunity to submit this written comment.

There are a broad range of strategies that will improve chemical facility safety and prevent disasters, including automated monitoring, utilizing frequency of releases for prioritizing facility assessment, and required improved maintenance. However, we believe that requiring the use of inherently safer technologies should be the core strategy in conjunction with the other strategies and recommendations discussed below.

Among the first options discussed in the Section 6(a) document is whether the U.S. Environmental Protection Agency (EPA) and the Occupational Safety and Health Administration (OSHA) should modernize, clarify, and harmonize the Process Safety Management (PSM) and Risk Management Plan (RMP) programs through rulemaking. While we do recommend this option, we strongly recommend modernizing, clarifying and harmonizing all the various regulatory programs that address federal chemical and security regulations.

We offer the following recommendations to Executive Order 13650, Section 6(a):

1. Remove all exemptions under regulatory programs;
2. Harmonize the scope of regulations and expand coverage of hazardous chemicals or categories of chemicals;
3. Account for human factors in process safety and risk management;
4. Use existing and new indicators to better evaluate performance over time;
5. Implement federal requirements for facilities to switch to safer alternatives and processes, including creating an information clearinghouse for safer chemicals, materials, and processes; and
6. Inform and engage the public to make communities safer.



Recommendations:

1. All exemptions under regulatory programs should be removed

As a general rule, blanket exemptions should be eliminated from regulatory programs, especially those programs dealing with chemical safety and security. Such programs should be driven by risk factors and safety concerns, not exemptions. Retail facilities, including propane plants, oil and gas facilities, and water treatment facilities can pose serious risks to nearby communities, and should be required to meet the same safety and security standards as other facilities.

We recommend eliminating the exemptions and adding coverage in the following programs:

- Retail exemption under EPA's RMP program and OSHA's PSM Standard;
- Extending coverage of the RMP program to cover upstream oil and gas production facilities;
- Extending coverage to cover oil and gas wells drilling and servicing facilities under the PSM standard; and
- Water and wastewater treatment facilities under Department of Homeland Security's Chemical Facility Anti-Terrorism Standards (CFATS) program.

Accidents at exempt facilities call into question the scope of these regulatory programs and soundness of the exemptions. For example, in July 2013, explosions at the Blue Rhino propane plant, located 30 miles northwest of Orlando and about a quarter-mile from a residential area in Tavares, injured nine workers, including five critically, and required the evacuation of residents within a half-mile of the plant. Luckily, three 30,000-pound propane tanks located at the facility did not ignite in the fire. Local city officials said hoses designed to spray water on the large tanks in case of fire did not operate as planned.

The Blue Rhino plant never filed a risk management plan despite having more than a million pounds of explosive propane stored on site because of an exemption in the law. Propane storage facilities were originally covered by the Clean Air Act's 1990 requirements for Risk Management Plans. But in 1999, Congress passed the Chemical Safety Information, Site Security and Fuels Regulatory Relief Act (PL 106-40), which exempts flammables substances, including propane, from coverage under the R M P program if they are stored for use as fuel or they are held for retail sale, even though large quantities of retail propane can be a danger to communities.

The explosion at this plant illustrates the need for more comprehensive chemical security programs and risk management planning to inform and prepare communities. RMPs and other chemical security programs help local first responders prepare for accidents and help residents understand the chemical hazards in their communities.

2. Harmonize agency scope of regulations and expand coverage of hazardous chemicals or categories of chemicals

It is essential to harmonize the scope of chemicals, hazards and facilities covered under the various agency regulatory programs that address federal chemical and security regulations. Harmonization would ensure that the broadest list of chemicals of concern, types of hazards and facilities are covered in a consistent manner.

The best option would be to use the reporting approach of Emergency Planning and Community Right-To-Know Act's (EPCRA) hazardous inventory (Tier I and II) as a model. Rather than creating a specific list of chemicals of concern, a list that could quickly become out of date, the hazardous inventory identifies chemical characteristics (toxic, flammable, etc.) and a basic quantity threshold. For chemicals that qualify as hazardous under OSHA's Hazard Communication Standard, facilities must keep Material Data Safety Sheets on file. For these chemicals, facilities must report any storage above set thresholds – generally 500 pounds for Extremely Hazardous Substances or 10,000 pounds for other generally hazardous chemicals.

Using an approach similar to EPCRA's hazard inventory reporting would harmonize EPCRA with the RMP, PSM and CFATS programs to ensure that the broadest list of chemicals of concern, types of hazards and facilities are covered in a consistent manner. As new chemicals are developed for industrial use or as changes in process demand new mixes, this approach will cover those chemicals that pose a risk to workers and communities without requiring a slow bureaucratic process of updating a chemical list through rulemaking.

An alternative but less preferred approach would be for each chemical safety and security regulatory program, including RMP, CFATS and PSM, to establish a system to regularly review and select chemicals for addition. If this approach is pursued we would recommend setting a requirement that programs update their covered chemicals on a short schedule, such as every two years. This would help agencies stay current with the ever changing landscape of chemicals being used in industrial processes.

3. Account for human factors in process safety and risk management

Safety is a multi-faceted issue, and should not be limited to just reporting on dangerous chemicals. We believe that EPA, OSHA, and PHMSA should initiate rulemaking and policy changes to account for human factors in process safety, management of change, facility operating procedures, incident investigation, training, and process hazard analysis.

Major incidents have highlighted the need to address human factors. For example, the U.S. Chemical Safety Board (CSB) cited human factor deficiencies were one of the main contributors of the catastrophic accident at the BP Texas City Refinery in March 2005. The human factor deficiencies included lack of control of worker fatigue, poor design, poor communication and out-of-date and inaccurate operating procedures. As a result, the CSB urged industry and OSHA to address human factors.

We recommend that OSHA PSM standards and other regulatory programs initiate rulemaking to address the following:

- Worker Fatigue – OSHA and other programs should address overtime policies and practices and shift scheduling to prevent worker fatigue.
- Staffing issues – OSHA and other programs should ensure companies avoid staff overload and rotate staff frequently in high vigilance jobs.
- Human system interface design – OSHA and other programs should ensure that equipment, routes and other components are clearly labeled and that equipment is well designed for human use.
- Task design – OSHA and other programs should ensure that facilities have engineering controls to help control heat, cold, noise and lighting. Also, procedures should be in place to ensure workers can detect errors.
- Communication between workers – OSHA and other programs should address verbal communication (e.g., face-to-face, telephone, walkie-talkies, and public address systems) and written communication (e.g., policies, standards, work packages, training materials, and e-mail) between individual workers, with and among work groups, in meetings or briefings and during shift turnover.

In addition, OSHA and other regulatory programs should make sure that contract labor that perform construction, maintenance and repair work have the necessary skills and health, safety and job protections and are properly trained.

4. Use existing and new indicators to better evaluate performance over time

Indicators are a key element for any effective risk and process safety management program. Federal agencies should determine what information is already being collected that can be used as indicators but also require new reporting to fill any information gaps that currently exist.

The Section 6(a) document inquired whether EPA and OSHA should use RMP accident data to identify trends and use the information to develop guidance or regulatory changes, compliance, priorities and technical assistance, and how. This would be a useful approach to pursue. However, the accident information tracked by the RMP program should only be a starting point.

While useful, RMP accident data is incomplete, as it only includes accidents that involve a set of 160 regulated chemicals and a limited range of industrial facilities. RMP data should be combined with other accident reports, including the National Response Center's national database of spills and accidents of oil and hazardous substances, state databases, OSHA data, fire department records from facilities or 911 calls. The different types of data that exist are not reflected under current regulations.

Additionally, EPA and OSHA should improve tracking accidents that occur at facilities. For instance, the RMP program can broaden its reporting by requiring facilities to report all accidents that occur on-site, even if they don't involve an RMP-covered chemical. Smaller accidents and injuries at a facility could be a precursor to larger or even catastrophic accidents. Further, safety performance and risk indicators should be a key criterion in the selection of firms for federal

contract work. To be effective metrics, indicators must be comprehensive in scope and predictive of the potential for serious incidents. Using indicators to rely on major incidents alone (i.e., explosions, large fires, fatalities and serious injuries) would be incomplete.

Properly structured indicators can help drive improvements at the facility, corporate, industry sector or national levels. Indicators can also be used to target enforcement of the worst hazards and worst violators, as well as to evaluate the effectiveness of regulatory programs and industry efforts to control chemical hazards and risk.

Federal agencies should consult with all stakeholders, including local communities, local officials and industry, to agree upon a basic set of standardized indicators to be used by all regulated parties, to permit the collection of meaningful national statistical data and benchmarking. This core set of indicators must not exclude the use of other and more specific indicators by individual industry sectors, companies or establishments. There should also be a process to review the set of indicators on a five-year basis.

5. Implement federal requirements for facilities to switch to safer alternatives and processes

Federal regulations and statutes should be updated to establish clear authority for agencies to require chemical facilities to use safer technologies, practices, and chemicals and better protect Americans in the process. Federal regulations for facilities to switch to safer alternatives and processes are necessary and could have prevented many explosions and unnecessary deaths, injuries and community evacuations.

For example, the explosion in West, TX on April 17, 2013 killed 12 people and injured 200 hundred. The explosion could have been prevented had chemical security related regulatory programs required safer formulations of the fertilizer ammonium nitrate. According to the *Preliminary Findings of the U.S. Chemical Safety Board from its Investigation of the West Fertilizer Explosion and Fire*:¹

Industry has developed other forms of ammonium nitrate that are reported to reduce or eliminate the risk of accidental detonation. For example, compounding the ammonium nitrate with calcium carbonate (limestone) ‘practically eliminates any risk of explosion in its storage, transportation, and handling,’ while preserving the AN’s nutritive value. Calcium ammonium nitrate fertilizers have been widely used in Europe. Ammonium sulfate nitrate also has been found to be non-explosive provided the percentage of AN is held below about 37%.

Safer, cost-effective alternatives are available to many of the poison gas or toxic-by-inhalation processes that pose the greatest risks to major urban centers. According to the Center for American Progress’ analysis of EPA’s RMP data, over 600 facilities have switched to safer

¹ U.S. Chemical Safety Board, *Preliminary Findings of the U.S. Chemical Safety Board from its Investigation of the West Fertilizer Explosion and Fire*, July 2013, http://www.csb.gov/assets/1/19/west_preliminary_findings.pdf; See Popovici Ipochim, N.N.; Icechim, M.M.; “Other Ammonium Nitrate Fertilizers;” In Keleti, C. (ed.); *Nitric Acid and Fertilizer Nitrates*; New York: Marcel Dekker Inc., 1985.

chemical processes since 1999.² Despite the availability of safer and more cost-effective alternatives, only a fraction of the highest-risk facilities have voluntarily converted their processes.

Moreover, the majority of these facilities that have voluntarily converted their processes do not represent the facilities that potentially expose the largest numbers of people to the risk from incidents. In its 2012 analysis of RMP data, the Congressional Research Service (CRS) found that 473 chemical facilities each pose a catastrophic hazard to 100,000 or more people.³ The analysis also shows an overall growth in RMP facilities including those that put thousands of people at risk. According to the CRS, in 2012, 12,440 facilities reported RMP data to EPA, which was an increase of 79 facilities over the 2011 RMP data.

Some state and local governments have attempted to adopt programs that look into safer alternatives, but none of them have gone the extra length of requiring facilities to make the switch. For example, the New Jersey Department of Environmental Protection adopted rules in 2006 to require chemical facilities to assess the availability of safer chemical processes.⁴ But, the program lacks authority to require chemical facilities to use safer processes where they are feasible. As a result New Jersey has 90 chemical facilities that still use large quantities of highly hazardous chemicals that pose a catastrophic safety and health risk to local communities. Five of these facilities each put 2 million or more people at risk of a chemical disaster.⁵

Contra Costa County, CA also took a step toward addressing safer alternatives when it passed a 1998 Industrial Safety Ordinance. However, that ordinance also fails to require the use safer equipment to prevent disasters. This allows safety opportunities such as those that were available to the Chevron refinery in Richmond, CA, to slip through the cracks. According to the U.S. Chemical Safety Board (CSB) draft report, on August 6, 2012, the Chevron refinery⁶:

experienced a catastrophic pipe failure. The pipe...ruptured and released flammable, hydrocarbon process fluid, which partially vaporized into a large vapor cloud that engulfed 19 Chevron employees and ignited. All of the employees escaped, narrowly avoiding serious injury. The ignition of the flammable portion of the vapor cloud and subsequent continued burning of the hydrocarbon process fluid resulted in a large plume of particulates and vapor traveling across the Richmond, California area. Approximately 15,000 people from the surrounding area sought medical treatment due to the release.

In July 2013, California's Interagency Working Group on Refinery Safety issued a report that found that: "had an inherently safer system approach been in place at its Richmond refinery,

² Center for American Progress, Preventing Toxic Terrorism: How Some Chemical Facilities Are Removing Danger to American Communities, April 2006: <http://www.americanprogress.org/issues/security/news/2006/04/24/1924/preventing-toxic-terrorism/>.

³ Congressional Research Service, Nov. 2012: <https://www.documentcloud.org/documents/557127-crs-rmp-update-11-16-12.htm>.

⁴ See, http://www.nj.gov/dep/rules/adoptions/adopt_080505a.pdf.

⁵ New Jersey Work Environment Council, *Failure to Act*, Oct. 2013: http://www.njwec.org/PDF/Reports/FailuretoAct_CompleteReport.pdf.

⁶ U.S. Chemical Safety Board, Interim Investigation Report, Chevron Richmond Refinery, Aug. 6, 2012: http://www.csb.gov/assets/1/19/Draft_Report_for_Public_Comment.pdf.

Chevron would have been forced to demonstrate why continuing to use low-silicon metal susceptible to corrosion was the best solution, given other inherently safer options.”⁷ The report also said that “enforceable requirements for inherently safer systems could be incorporated into the CalARP [California Accidental Release Prevention Program] and PSM programs, or they could be required in legislation adopting major components of the Contra Costa County ISO [Industrial Safety Ordinance] into California law...”⁸

The use of some process for safer alternatives in these state and local programs is encouraging, but they continue to fall short of what is necessary. And even if the programs were strengthened, the regional nature of their coverage means they would only improve the safety for a small percent of the at-risk national population. What is needed is a consistent federal requirement that safer alternatives be considered and implemented when reasonable.

a. Options to implement safer alternatives

A set of five principles should guide any approach to federal requirements for switching to inherently safer technologies:

- First, the program should be transparent and comprehensive in scope;
- Second, there should be clear deadlines and reporting requirements
- Third, there should also be sufficient violations and penalties for facilities that fail to meet deadlines and requirements;
- Fourth, the program include public measurements to determine the success of the program;
- And fifth, there must be a process for front-line workers, their representatives and local communities to participate and provide input.

As a first step, EPA should implement its authority under Section 112(r)(1) of the 1990 Clean Air Act Amendments, also known as the “General Duty Clause,” to prevent catastrophic chemical releases. The next step would be to grant all agencies involved in chemical safety and security clear, broad authority to require safer technologies and clear expectations that they use this authority regularly to protect communities.

Regulatory programs could be looked to as a potential model for a federal program to require the use of safer alternatives. For instance, EPA’s Maximum Achievable Control Technology Standards, or MACT standards, identify the control technologies being used by best performing facilities to establish achievable air emission standards. This general approach might be adapted to address chemical plant safety standards.

Agencies could also develop best practices for evaluating alternatives. Relevant agencies, such as the EPA, National Toxicology Program, NIOSH, and the Agency for Toxic Substances and Disease Registry (ATSDR), should coordinate an evaluation of existing methodologies for conducting alternatives assessments and identify best practices and provide easy public access to

⁷ California, Report of the Interagency Working Group on Refinery Safety, *Improving Public and Worker Safety at Oil Refineries*, July 2013: <http://www.calepa.ca.gov/Publications/Reports/2013/Refineries.pdf>.

⁸ Ibid.

this information. Agencies should prioritize alternatives that can be readily adopted by industry and the public at low cost. Agencies could also: mandate the implementation of inherently safer technologies for a certain set of processes; mandate a phase-out of specific chemicals above a certain threshold, such as chlorine, where known safer alternatives are feasible and have been used in similar processes; or use a tiered system with certain criteria controlling whether and when implementation is required.

Another approach that agencies could use is to come up with a risk score for facilities and require facilities to reduce their risk score. For example, regulators could establish a model that produced a chemical safety score for facilities. Requirements to improve this score over time could create the necessary pressure without dictating any specific technology or change.

b. Create an Information Clearinghouse for Safer Chemicals, Materials, and Processes

Relevant agencies should coordinate the development of a publicly accessible and searchable information clearinghouse for data on alternatives to industrial chemicals, materials, and processes that pose less of a hazard or no hazard to human and ecological health. Research into safer alternatives is being conducted by industry, nonprofit research organizations, and government laboratories. While not a replacement for a strong requirement to implement safer alternatives, the widespread dissemination of research and processes already in use would help companies identify and adopt safer chemicals, thereby preventing pollution, protecting worker health, and reducing the risks of industrial accidents.

Regulatory agencies should develop sources of data and build databases of safer chemicals and industrial processes. Federal agencies should collaborate on the creation of a publicly accessible website featuring a comprehensive database (or databases) of chemicals and their known or suspected risks, as well as a list of safer substitutes and their characteristics. The website also should provide searchable access to safer and more secure industrial processes and source reduction methods available for specific industries. To populate the databases, agencies should draw on the vast expertise within private sector industries, among other sources. Alternatives assessments should be integrated into routine reporting by regulated facilities.

6. Inform and engage the public to make communities safer

The Section 6(a) policy options document fails to include a role for the public and, in particular, communities located around chemical facilities. An engaged and informed public is a vigilant public. Citizens, first responders, medical professionals, plant workers, and local officials all need to be better informed about chemical security and safety information in order to be prepared for emergencies. Unfortunately, we have instead adopted an overly secretive approach that seeks to hide most, if not all chemical safety and security information from the public.

We are not suggesting that all the information related to chemical safety and security programs should be open to the public. Some secrecy may be justified in limited instances – vulnerability assessments, plant operations details, etc. – where specific information may need to be restricted. But we do believe that current constraints on public information disclosure and the low level of public engagement require substantial improvement.

When we hide such basic information as facility identities and locations, chemicals stored, and compliance status, we trade away citizen vigilance and important agency collaboration that can ensure more accurate information and better emergency preparedness. This type of information can be essential for use by other officials and the public.

Studies done on hazardous materials placards,⁹ digital maps and global positioning information,¹⁰ and biological research¹¹ have each found that openness and disclosure is essential to keeping the public safer, and it helps us stay ahead of terrorists. For instance, in 2003, the Department of Transportation explored the possibility of removing hazardous materials placards from trucks, railcars, and shipping containers to better protect the materials from theft or use by terrorists. But the study found that “removal of placards offers little to no security benefit” and that the placards were a critical source of hazard information that facilitated effective emergency responses and protected lives.

Excessive and unnecessary secrecy around chemical security programs could cost lives in the event of a chemical emergency. If an emergency occurred at a chemical facility, people might not know where to go and could evacuate into the path of a chemical hazard. Schools would be ill-prepared to evacuate children and inform parents. Doctors would not know how to treat those exposed and first responders would not know what emergency equipment to use. Awareness, preparedness, and prevention save lives.

The catastrophe in West, Texas may wind up being an example of this problem. According to the preliminary findings of the U.S. Chemical Safety Board (CSB) local first responders “were not made aware of the explosion hazard from the ammonium nitrate stored at West Fertilizer.”¹² Emergency response guidelines state that some ammonium nitrate fires should be dealt with by evacuating the area and trying to contain the fire from a greater distance. However, the West volunteer firefighters were unaware that they were facing a fire with ammonium nitrate, so they could not properly judge if these tactics should be used. And nearby residents, including an elementary school, hospital and retirement home all within a mile of the facility, were almost certainly unaware of the risks posed by the facility.

Carolyn Merritt, then Chair of the U.S. Chemical Safety Board, stressed the importance of community awareness and preparedness in responding to and mitigating the impacts of a chemical accident during Senate testimony in 2007. She noted a “lack of chemical emergency preparedness that our investigations have found among many communities where accidents

⁹ The Role of Hazardous Material Placards In Transportation Safety and Security, Jan. 15, 2003. U.S. Department of Transportation, Research and Special Programs Administration, Office of Hazardous Materials Safety and John A. Volpe National Transportation Systems Center.

¹⁰ Mapping the Risks: Assessing the Homeland Security Implications of Publicly Available Geospatial Information, 2004. RAND National Defense Research Institute, John C. Baker, Beth E. Lachman, David R. Frelinger, Kevin M. O’connell, Alexander C. Hou, Michael S. Tseng, David Orletsky, Charles Yost.

¹¹ Globalization, Biosecurity, and the Future of the Life Sciences, 2006. Committee on Advances in Technology and the Prevention of Their Application to Next Generation Biowarfare Threats, National Research Council.

¹² U.S. Chemical Safety Board, *Preliminary Findings of the U.S. Chemical Safety Board from its Investigation of the West Fertilizer Explosion and Fire*, July 2013, http://www.csb.gov/assets/1/19/west_preliminary_findings.pdf .

strike.”¹³ Merritt illustrated the consequences of such situations with a compelling real-life example:

When a small chemical firm in northwest Georgia experienced a reactive chemical accident that released toxic vapor into the community, firefighters and police lacked the planning, equipment, and training to respond effectively, and the city lacked an emergency notification system for residents. More than 200 families had to be evacuated, and 154 people had to be decontaminated and treated at the hospital. The most seriously impacted were police officers, who were instructed to conduct the community evacuation without protective gear.¹⁴

The current lack of public disclosure and engagement on chemical safety and security is troubling and dangerous. Agencies may be under the mistaken impression that hiding the information is safer, but in reality they are leaving communities more vulnerable and less prepared for the chemical accidents that are certain to occur. Each of these programs should seek to maximize disclosure and outreach to the public on these issues and seek to regularly use the information to prepare for emergencies.

At a minimum:

- Emergency management and response plans must be publicly accessible online and easily searchable. EPA and other regulatory agencies must ensure that regional offices and state agencies and Local Emergency Planning Committees (LEPCs) provide consistent disclosure practices.¹⁵
- Emergency response plans must include procedures for rapidly notifying the public in the event of emergencies. Facilities should use multiple and redundant means of communication and seek to reach as many potentially impacted community members as possible.
- There should be full disclosure regarding the toxicity of dispersants and all chemical and biological agents used in responding to emergencies to prevent uncertainty and to ensure full information to impacted communities.
- Working with public stakeholders, including impacted people, community and labor groups, and environmental and public health advocates, agencies should review existing procedures and develop strong standards that ensure emergency management and response plans:
 - identify and model the potential offsite consequences of releases of harmful substances from covered facilities, including worst-case scenarios, using readily available emergency management software and mapping tools;
 - develop realistic procedures for assuring the safety and survival of facility workers and the public;

¹³ Prepared Statement of Carolyn W. Merritt, Chairman U.S. Chemical Safety Board before the Committee on Environment and Public Works’ Subcommittee on Transportation, Safety, Infrastructure Security, and Water Quality, U.S. Senate, July 10, 2007, p. 8.

¹⁴ Ibid, p. 9.

¹⁵ LEPCs must develop emergency response plans and provide information about chemicals in the community to citizens. See <http://yosemite.epa.gov/oswer/lepddb.nsf/HomePage>.

- maintain appropriate, effective measures for notification of response agencies and the public; and
- provide the means for disseminating the types of data needed by emergency responders, such as floor and roof plans and locations of chemical hazards.

Conclusion

We appreciate the opportunity to comment on Executive Order 13650 Section 6(a). If you have questions about our comments or want to discuss the issues further, please feel free to contact us at 202-234-8494 or smoulton@foreffectivegov.org.

Sincerely,



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