

Testimony of Paul Orum

**Consultant
Coalition to Prevent Chemical Disasters**

Before the

Senate Environment and Public Works Committee

Oversight of Federal Risk Management and Emergency Planning Programs to Prevent and Address Chemical Threats, Including the Events Leading Up to the Explosions in West, TX and Geismar, LA

June 27, 2013

My name is Paul Orum. I thank the committee for the opportunity to present views important to a broad coalition of environmental health, labor, and community organizations known as the Coalition to Prevent Chemical Disasters. My background for 25 years is government information policy regarding hazardous materials.

Recent deadly explosions in West, Texas and Geismar, La., among others, remind us of the need for more effective public protections from industrial chemicals in populated areas.

- These recent incidents are hardly rare. The National Response Center recorded more than 11,000 oil and chemical spills in the last year alone.¹
- The potential for large-scale incidents is ever present. A Congressional Research Service analysis indicates more than 470 facilities have vulnerability zones potentially affecting any of 100,000 or more people in the event of a worst-case toxic gas release.²
- Similar scenarios repeat. The fire and explosion at West Fertilizer is reminiscent of an event in Kansas City, Missouri, at which a construction facility storing ammonium nitrate first caught fire and then exploded killing six firefighters after they had responded to the fire. That was November 29, 1988.

¹ On-line search of National Response Center conducted June 20, 2013. NRC is the national point of contact for reporting oil and chemical spills.

² Congressional Research Service memorandum to Senator Frank R. Lautenberg, *RMP Facilities in the United States*, November 16, 2012.

In general, the chemical safety landscape includes a lot of neglect, missed communication, static regulations, voluntary standards, and prosecution afterwards. There is not enough on prevention, technically competent inspections, community-wide awareness, producer responsibility, and safer alternatives. Regulations should not only control problems but also generate safer solutions. Accident prevention is ultimately more effective than response.

Risk management and emergency planning should be revised and updated in light of ongoing and recent plant explosions.

1] Risk management planning should include reactive chemicals like the ammonium nitrate that detonated at West Fertilizer. Where there is serious potential harm to the public, reactive chemical hazards should be included in Risk Management Plans (RMP) under the Clean Air Act, section 112(r). The Chemical Safety and Hazard Investigation Board has an open recommendation to EPA to this end:

Revise the Accidental Release Prevention Requirements, 40 CFR 68, to explicitly cover catastrophic reactive hazards that have the potential to seriously impact the public, including those resulting from self-reactive chemicals and combinations of chemicals and process-specific conditions. (Recommendation No. 2001-1-I-H-R3)

While the general duty clause of the clean air act presumably covers all facilities that hold extremely hazardous substances – including reactive substances that pose catastrophic hazards – the general duty does not explicitly cover important *proactive* elements of RMPs, such as the requirement to assess and communicate chemical hazards. Adding ammonium nitrate to the RMP program could have informed the owner of West Fertilizer, first responders, and the public about the magnitude of the danger, including off-site consequences, and might have prevented or reduced the tragic consequences of the explosion.

2] Management systems and controls do fail. Chemical facility owners and operators have a responsibility not only to understand their own chemical hazards, but also to understand less hazardous alternatives that are commercially available in their industry. EPA should require chemical facilities to review and include in RMPs available methods that prevent potential consequences of a worst-case incident. Such methods are often the most effective measures to protect workers at the site, emergency responders, and nearby populations.

Surveys show that the RMP process has prompted some companies to reduce or remove chemical hazards, one of the objectives of the program. The RMP process facilitates changes that companies may be considering for a variety of reasons, including safety, security, and other regulatory requirements.

- More than 554 drinking water and wastewater facilities converted from toxic inhalation hazard chemicals, removing dangers to more than 40 million Americans. (The 554 facilities are examples among other facilities that have converted to less hazardous operations.)³
- Facilities across some 20 industries already use options that do not pose the danger of a major toxic gas release, including bleach producers, water utilities, power plants, refineries, aluminum smelters, and many types of manufacturers.⁴
- Facilities that convert to safer operations may save money when all factors are considered, such as avoided costs of release control devices, liability insurance, regulatory compliance, personal protective equipment, site security, and emergency planning.⁵

These facilities typically substituted a less hazardous replacement chemical or process; used a chemical in a less hazardous form (such as less concentrated, or aqueous instead of gaseous); or adjusted the process design to minimize use or storage (such as generating the chemical on site as-needed without storage). These strategies are distinct from conventional risk management approaches such as containment, control, mitigation, or recovery of substances.

The House and Senate reports on the Clean Air Act Amendments of 1990 show that Congress viewed measures to remove avoidable chemical hazards as integral to the statutory goal of preventing accidental releases:

*Measures which entirely eliminate the presence of potential hazards (through substitution of less harmful substances or by minimizing the quantity of an extremely hazardous substances present at any one time), as opposed to those which merely provide additional containment, are the most preferred.*⁶

*Hazard assessments...include a review of the efficacy of various release prevention and control measures, including process changes or substitution of materials.*⁷

³ Center for American Progress, *Leading Water Utilities Secure Their Chemicals*, March 2010.

⁴ Center for American Progress, *Chemical Security 101: What You Don't Have Can't Leak, or Be Blown Up by Terrorists*, November 2008.

⁵ Center for American Progress, *Preventing Toxic Terrorism: How Some Chemical Facilities Are Removing Danger to American Communities*, April 2006.

⁶ Senate Report on the Clean Air Act Amendments of 1990 Report # 101-228 (S-1630), page 209.

⁷ House of Representatives, Clean Air Act of 1990: Conference Report to Accompany S-1630. Report #101-952 (October 26, 1990), page 349.

EPA took public comment on inherently safer approaches for facility design and operations when first implementing the RMP program.⁸ Unfortunately the agency did not develop the approach at the time. As a result, covered facilities are not required to evaluate feasible chemical hazard reduction alternatives that may be the most effective safety measures. Basic prevention analysis elements such as the avoided costs and liabilities associated with alternate technologies are not standard elements of RMPs. Such elements are foundational to developing knowledge of solutions. They are among the elements that help make organizations intelligent about the advantages, costs, and feasibility of technology options.

In March 2012, EPA's National Environmental Justice Advisory Council urged the agency to prevent chemical disasters by more fully using its authorities to advance safer chemical processes under the Clean Air Act.⁹ In July 2012, more than 50 organizations petitioned EPA to commence rulemaking under the Clean Air Act and to revise agency guidance for enforcement of the general duty clause.¹⁰

The EPA Administrator has authority under the Clean Air Act, section 112(r), to incorporate methods that prevent potential consequences into RMPs and should do so.

3] The explosion at West Fertilizer illustrates the importance of the Clean Air Act's general duty to operate safely. West Fertilizer was subject to an incomplete patchwork of chemical safety regulations regarding ammonium nitrate. The general duty clause holds firms responsible for understanding and managing their chemical hazards regardless of the completeness of government actions to regulate those hazards. For example, the ammonium nitrate at West Fertilizer was not on the RMP list of substances and thresholds. The general duty is an important tool for not only enforcement but also prevention. EPA's implementation guidance for the general duty clause recognizes that removing chemical hazards can be an effective safety measure, but EPA should further develop the concept in this guidance. We strongly oppose restricting the general duty clause in ways that could hamper enforcement or prevention. We also oppose arbitrarily fragmenting federal authorities between safety and security. By Presidential directive, the U.S. EPA is the lead agency to oversee security at drinking water and wastewater facilities.¹¹

4] EPCRA emergency planning notification is incomplete. The ammonium nitrate that exploded at West Fertilizer was not on the EPCRA section 302 list of substances that require emergency planning notification. EPCRA section 302 requires facilities that hold threshold amounts of listed chemicals to notify their State Emergency Response Commission (SERC)

⁸ 60 Federal Register 13526, March 13, 1995.

⁹ National Environmental Justice Advisory Council letter to EPA Administrator Lisa P. Jackson, March 14, 2012.

¹⁰ Petition to the Environmental Protection Agency to Exercise Authority Under Section 112(r) of the Clean Air Act to Prevent Chemical Facility Disasters Through the Use of Safer Chemical Processes, July 25, 2012.

¹¹ Homeland Security Presidential Directive/HSPD 7, *Critical Infrastructure Identification, Prioritization, and Protection*, December 17, 2003.

and designate a point of contact at the facility to participate in emergency planning. It should be acknowledged that local emergency response capacities are often starkly overmatched by the magnitude of chemical hazards, and that activity levels of Local Emergency Planning Committees (LEPC) vary widely. Too much is left to the mostly-volunteer LEPCs – states should have fee-based programs that support hazard reduction, inspections, and regular drills. Nonetheless, EPCRA 302 notifications are a starting point for local emergency planning. The EPA Administrator has responsibility to modify the EPCRA 302 list and should do so. While lists and thresholds will inevitably fall short – hence the need for a general duty to operate safely – EPA should revise the EPCRA 302 list to include common substances that are known emergency hazards. This process should include both proactive listing criteria and a review of substances involved in serious incidents reported to the National Response Center.

5] EPCRA inventory reporting is valuable but insufficient. Owners and operators of facilities that hold large amounts of hazardous chemicals have an obligation to clearly communicate chemical hazards to those who could be affected prior to an emergency. West Fertilizer did report ammonium nitrate to the Texas SERC under EPCRA section 312 (a Tier II report). Texas apparently maintains Tier II reports in an electronic format, which is important. EPA should continue to support and promote free electronic information management tools such as Tier II Submit, RMP*Comp, and CAMEO. The EPA should also develop routine electronic access to EPCRA 312 Tier II data from each state through memoranda of understanding or other means (as should OSHA and DHS). EPA should also promote awareness of reporting and planning obligations among regulated facilities. However, simple awareness of chemicals on-site is not sufficient. Local emergency planners and responders need not only chemical inventories but also worst-case and planning-case scenarios (which are included in RMPs but not EPCRA Tier II reports). They also need regular information about the number and type of high-hazard shipments in all modes of transportation. Fee-based programs should support prevention, pre-fire planning, technically competent inspections, drills, and NFPA-compliant hazmat training – including clear reminders that evacuating may be the most prudent course of action.

6] Independent investigations are important. The Chemical Safety and Hazard Investigation Board, also established by the Clean Air Act 112(r), produces root cause investigations and safety recommendations after the most serious chemical accidents. These activities are important to the public because they provide credible information and focused recommendations for change. Barriers to effective investigations, such as site access and preservation, should be resolved.

Issues beyond EPCRA and Clean Air Act, 112(r):

7] Schools and nursing homes shouldn't be in potential blast zones. It is not an easy problem. Communities may grow up around chemical facilities or vice versa, but they are

too close together in many places. State and local planners could benefit from federal guidelines for substantial safe setback distances, based on a worst-case scenario, in order not to continue to compound the problem when siting new buildings. School buildings were badly damaged by the blast in West, Texas. School siting criteria should take into account proximity to hazardous chemical facilities. Recipients of federal construction funds for buildings that will be used by potentially vulnerable populations (such as head start schools, hospitals, or nursing homes) should be subject to oversight to prevent building in the near zone of potential harm. In addition, the agricultural chemicals security tax credit assists agricultural distributors with conventional security measures such as fences and lights; it should assist facilities that want to move locally to safer locations.

8] Hazardous chemical operations shouldn't be underinsured. West Fertilizer reportedly carried only \$1 million in liability insurance, a fraction of the estimated \$100 million in property damage alone. Companies that hold large amounts of extremely hazardous substances should be required to maintain sufficient liability insurance to cover a worst-case chemical release. Such a requirement would provide a reasonable cost incentive for companies to develop and use feasible alternatives. In addition, common carrier obligations encourage widespread overuse of railcars for shipping and storing extremely hazardous substances. Railroads have sought to have shippers share liability risks associated with extremely hazardous substances (which they are required to carry) and to have shippers develop safer substitutes.¹²

Sustained improvement in chemical hazard prevention, preparedness, and response is long term and involves a range of actions. Among the most immediate lessons from the West Fertilizer explosion are for EPA to make sure major recognized hazards are 1) included in the programs designed to address them, 2) subject to safer alternatives analysis by the companies that hold them, 3) covered by appropriate lists and thresholds, and by the general duty to operate safely.

Thank you again for the opportunity to testify. I would be glad to take any questions.

¹² Center for American Progress, *Toxic Trains and the Terrorist Threat: How Water Utilities Can Get Chlorine Gas Off the Rails and Out of American Communities*, April 2007.