September 20, 2022

PREVENTING DISASTER:
Three chemical incidents within two weeks show urgent need for stronger federal safety requirements

INCIDENT CASE STUDIES OF:

Winston Weaver Fertilizer Plant fire, Winston-Salem, North Carolina, *January 31, 2022*

Westlake Chemical explosion, Westlake, Louisiana, *January 26th, 2022*

Majestic Industries / Qualco Inc. chemical fire, Passaic, New Jersey, *January 14, 2022*

coming clean

Environmental Justice Health Alliance for Chemical Policy Reform

CASE STUDIES BY:

COMING CLEAN: a national collaborative of environmental health and environmental justice organizations and experts working to reform the chemical and energy industries so they are no longer a source of harm. We coordinate hundreds of organizations and issue experts—including grassroots organizers, community leaders, scientists and researchers, business leaders, lawyers, and advocates working to reform the chemical and energy industries. We envision a future where no one's health is sacrificed by toxic chemical use or energy generation, and we are winning campaigns for a healthy, just, and sustainable society by growing a stronger and more connected movement. Visit our website.

EJHA: The Environmental Justice Health Alliance for Chemical Policy Reform is a national network of grassroots Environmental and Economic Justice organizations and advocates in communities that are disproportionately impacted by toxic chemicals from legacy contamination, ongoing exposure to polluting facilities and health-harming chemicals in household products. EJHA supports a just transition towards safer chemicals and a pollution-free economy that leaves no community or worker behind. The EJHA network model features leadership of, by, and for Environmental Justice groups with support from additional allied groups and individual experts. Visit our website.

RESEARCH CONTRIBUTED BY:

MATERIAL RESEARCH: An L3C that works in collaboration with non-profit organizations, communities, policymakers, and journalists to better understand and solve critical environmental, public health, and social justice issues. Visit our website.

INTRODUCTION

TOXIC CHEMICAL LEAKS, FIRES, AND EXPLOSIONS are shockingly common in the U.S. More than 140 harmful incidents occur every year, on average. Nationally, the costs and consequences of these often preventable incidents are dramatic: in just one decade, incidents at facilities that use or store hazardous chemicals caused over $2 billion in property damage, as well as the injury, death, shelter in place, or evacuation of half a million people.

Over 12,000 high-risk chemical facilities put an estimated 124 million people (39% of the U.S. population) who live within three miles of these facilities at constant risk of toxic exposure, injury, or death. The full worst-case chemical release "vulnerability zones" for these facilities can extend up to twenty-five miles in radius. And like many other health and environmental hazards, these facilities disproportionately impact communities of color and low-income communities.

The U.S. Environmental Protection Agency (EPA) regulates these facilities under the Risk Management Plan (RMP) rule, which is intended to prevent chemical disasters. The RMP rule requires facilities that use or store certain toxic or flammable substances, above threshold amounts, to develop a risk management plan and submit a summary of the plan to EPA. These plans must assess a worst-case chemical release scenario, develop an emergency response plan, and consider safety and prevention measures.

Unfortunately, the current RMP rule has failed to prevent frequent fires, explosions and harmful chemical releases from RMP facilities, and exempts many highly hazardous chemicals and facilities from regulation altogether. The EPA is currently revising the rule, and published proposed revisions on August 31, 2022.

Here, we explore three serious incidents that occurred at chemical facilities within a mere two weeks, in January 2022. These incidents caused significant harm to workers and communities. And, as we outline, each incident could have developed into an even greater chemical disaster. Taken together, these incidents demonstrate the urgent need for common sense reforms to the RMP rule, which is not currently doing enough to reduce hazards and prevent chemical fires, explosions and releases.

We also analyze whether EPA's newly proposed revisions to the RMP rule achieve the agency's stated aim of protecting communities and advancing environmental justice. We raise concerns that the EPA's proposed revisions to the RMP rule are not sufficiently preventative, and rely too heavily on voluntary commitments. Specifically:

- **The proposed rule does not expand to cover ammonium nitrate,** and therefore does nothing to prevent future incidents like the Winston Weaver fertilizer plant fire in January 2022, that caused 6,500 to evacuate due to the risk of a deadly explosion.

- **The proposed rule does not require any RMP facilities to install standby or emergency power for production processes or chemical storage safety,** despite the fact that 31% of RMP facilities are located in areas with natural hazards such as hurricanes that often cause power loss. Further, the proposed rule does not require RMP facilities to use inherently safer chemicals, processes, or technologies, even when such alternatives are available and feasible. We argue that without clear requirements, facilities like the Westlake Chemical South plant, which has reported at least 14 chemical incidents to the EPA since 2004, will decline to take preventive measures voluntarily. In January 2022, the facility reported yet another explosion, forcing thousands of students in the Lake Charles, LA area to shelter in place.

- **The proposed rule also does not expand the program to cover any new chemicals, or lower the threshold for hazardous chemicals that would trigger coverage under the program.** This will continue to exempt large chemical stockpiles like that at the Qualco, Inc. facility from the RMP program. This does nothing to prevent incidents like the massive fire that spread to the Qualco chemical plant in January 2022, and came dangerously close to igniting the estimated 3 million pounds of hazardous chemicals stored there.

Overall, we conclude that EPA's draft rule, rather than adopting common-sense prevention requirements, continues to rely on voluntary actions by high-risk facilities. This approach has failed to prevent many chemical disasters over the last 25 years. If the draft rule is not strengthened, facility workers and neighbors across the country will continue to bear the human, environmental, and financial costs of more preventable disasters.

Who's in Danger from High-Risk Chemical Facilities?

Industrial and commercial facilities that use or store the highly hazardous chemicals regulated under the EPA Risk Management Plan rule disproportionately endanger communities of color and low-income communities. These communities also often experience disproportionate levels of toxic air pollution and other health and environmental hazards.

A study of 3,433 RMP facilities found that the percentage of Blacks in the "fenceline zones" closest to these facilities is 75% greater than for the U.S. as a whole; the percentage of Latinos is 60% greater, and the poverty rate in these areas is 50% higher.

Another study of nine communities with clusters of RMP facilities found that fenceline zones around these facilities are disproportionately Black, Latino, and impoverished, and that most schools and medical institutions are located in these zones, at much greater rates than nationally. The study also found that people living in hazardous facility fenceline zones face multiple health hazards and risks, including higher risk of cancer from toxic air pollution than the entire area (and often much higher than for the US as a whole).

Winston Weaver Fertilizer Plant fire

Photo credit: EPA On-Scene Coordinator

Winston-Salem, North Carolina
January 31, 2022, approximately 6:30 pm

- 6,500 people advised to evacuate

- Air pollution reached unsafe levels

- Nearly triggered catastrophic ammonium nitrate explosion

KEY LESSONS:

Many dangerous chemicals and facilities are currently exempt from disaster prevention requirements. EPA must expand the RMP program to cover ammonium nitrate production and storage facilities, as well as other highly hazardous chemicals.

What Happened

At approximately 6:30 pm, a fire broke out at the Winston Weaver Fertilizer plant, which had 600 tons (over 1 million pounds) of ammonium nitrate stored on site. The fire was not fully extinguished until at least February 6. Firefighters initially had to pull back a mile from the facility due to the possibility of explosion, but were later able to return to the scene. They used over 4 million gallons of water to control the fire.

At 9:00 pm, 6,500 people within a one-mile radius of the plant were advised to evacuate over fears of a massive explosion. Reports describe "acrid smoke" billowing from the plant, and note that "the air downwind of the fire was barely breathable." Thirty-six hours after the fire started, fine particulate matter (PM) in neighborhoods surrounding the plant reached levels considered hazardous to public health based on EPA guidelines; at these levels, the EPA recommends closing schools, canceling outdoor events, closing workplaces and evacuating affected neighborhoods.

Minor Barnette, director of the Forsyth County Office of Environmental Assistance and Protection, told reporters: "I had a panic attack. I had never seen numbers like that."[1] Exposure to high PM levels can affect lung function and worsen medical conditions such as asthma and heart disease.

In their efforts to manage the fire, firefighters poured hundreds of thousands of gallons of water onto the site, creating toxic runoff that entered the nearby Monarcas Creek. "Fish were dying in the streams," Barnette said. State environmental testing of nearby creeks and the Yadkin River after the fire found elevated levels of chemical fertilizer ingredients. Water testing and investigation found that prior to the fire, the plant owners had been storing chemicals in an open-sided shed, which had been leaching ammonia and phosphorus into the creek.

Residents who worked within a one-mile radius of the plant told reporters that they lost out on wages for a full week because they were not allowed to return to work. Restaurants and grocers disposed of all of their food items because they feared they

Photo Credit: Chemical Safety Board "Dangerously Close: Explosion in West, Texas"

were chemically contaminated. Many evacuees paid out of pocket to stay at hotels, a steep burden for low-income residents. The total financial cost to the community and local economy is not yet known.

The population within one mile of the facility is 80% people of color (compared to only 55% for the city of Winston-Salem) and 71% low income (compared to only 19% for the city as a whole).[2] The U.S. Centers for Disease Control and Prevention's Social Vulnerability Index for the area is 0.9787, indicating a high level of vulnerability based on factors like race and income.

The Potential for Even Greater Disaster

"At the beginning of this incident there was enough ammonium nitrate on hand for this to be one of the worst explosions in U.S. history."
- Winston-Salem fire chief, William "Trey" Mayo

Recent ammonium nitrate explosions have killed hundreds. In August 2020, an ammonium nitrate explosion in Beirut, Lebanon killed over 200 people, injured 7,000, left 300,000 homeless, and caused $15 billion in property damage by destroying a heavily trafficked ocean port.

If the more than 1 million pounds of ammonium nitrate stored on site at Weaver – or even a significant portion of it – had exploded, the damage would have been catastrophic.

As a point of comparison, the ammonium nitrate explosion in West, Texas, in 2013 killed fifteen people, including twelve first responders, and leveled an entire city block. It devastated the surrounding community. Over 250 people were injured, and more than 150 off-site buildings were damaged or destroyed, including two schools and a nursing home. The incident caused at least $100 million in damages and losses to the town's economy. That disaster involved only 40-60 tons of ammonium nitrate on site, of which only about 30 tons detonated, plus an additional 100 tons stored in a railcar, which did not explode.

In comparison to these recent disasters, the Weaver Fertilizer facility stored more than 600 tons of ammonium nitrate on site. It stored fertilizer in wooden structures that lacked sprinkler systems, increasing the risk of fire. Damage from an explosion to even a portion of this stockpile could have caused "one of the worst explosions in U.S. history," according to the Winston-Salem fire chief.

Weaver also stored 4.5 million pounds of 26 other chemicals on site, many of which were reactive. Had the fire reached other chemical storage locations, it could have caused a chemical fire, explosion, or release with a much larger radius and several immediate health hazards. For example, when burned, urea – of which Weaver stored an average of 276,000 pounds on site year round – generates toxic ammonia gas.

A Stronger RMP Rule Could Prevent Future Disasters

"This type of incident is preventable."
- former CSB Chairwoman Catherine Lemos

Ammonium nitrate and other reactive chemicals, more highly hazardous chemicals not currently included, and additional hazardous facilities should be covered under the RMP rule, as recommended by the Chemical Safety Board and the National Fire Protection Association. Threshold quantities of chemicals that trigger coverage should also be lowered.

Following the massive 2020 ammonium nitrate explosion in Beirut, U.S. Chemical Safety and Hazard Investigation Board (CSB) Chairwoman Catherine Lemos said: "This type of incident is preventable. It is time to make changes to prevent catastrophic explosions like the ones that have caused so much devastation in West, Texas, and most recently in Beirut." She also noted specifically that the CSB's investigation of the West, TX disaster "found that ammonium nitrate fertilizer storage falls under a patchwork of federal safety standards and guidance – a patchwork with many gaps that is still in existence today. Such gaps include allowing the use of combustible wooden buildings and wooden bins to store ammonium nitrate, not requiring the use of sprinklers in storage buildings, and failing to restrict the storage of large amounts of ammonium nitrate near homes, schools and hospitals." The CSB recommended that the EPA revise its Risk Management Program rule to include fertilizer grade ammonium nitrate (FGAN) at an appropriate threshold quantity on the List of Regulated Substances, in its 2016 investigation of the West, Texas fire and explosion. The conditions found at the West, TX facility by the CSB are extremely similar to those present at the Winston Weaver facility almost a decade later, but have yet to be addressed in the EPA's chemical disaster prevention rule.

Many other serious incidents have involved highly hazardous chemicals not currently covered under the RMP rule. Threshold quantities (TQ) of chemicals that trigger requirements under the RMP program are also unreasonably high, exempting many facilities from these requirements that could help prevent disasters. More chemicals need to be covered under the rule, and threshold quantities should be lowered to be more protective.

At least 90 chemical incidents in 2020, and at least 40 in the first half of 2021, appear to have occurred at facilities that are not covered by the RMP rule, like Weaver Fertilizer, or are only covered for some processes or chemicals despite the presence of other hazards in the same facility. These include a "mass casualty" incident in July 2021 that left two dead and thirty hospitalized. The West, TX, explosion, and the 2017 Arkema Inc. chemical disaster in Crosby, TX, are also examples of facilities only partially covered. The assumption that a potential fire, explosion, or other major incident will only involve one chemical, or one part of the facility, is absurd. The RMP rule should ensure that any facility that stores or uses a chemical regulated under the rule must follow RMP requirements for all processes and all equipment, and must ensure that all chemicals posing a threat to human health and the environment at the site are accounted for in prevention and response plans.

Key Lessons: Deadly chemicals and dangerous facilities are exempt from disaster prevention requirements; proposed rule fails to take action, keeping communities in danger.

Many high-risk facilities and chemicals, including ammonium nitrate, are not covered by chemical disaster planning or prevention requirements under the current RMP rule. The rule should be updated immediately to cover ammonium nitrate production and storage facilities; to include additional highly hazardous chemicals and facilities; to lower threshold quantities that trigger RMP coverage; and to require that coverage of any chemical or process under the RMP rule triggers coverage for the whole facility (including any chemicals that could cause risk, fire, explosion, or release of the RMP covered chemicals).

Unfortunately, proposed revisions to the RMP rule, published on August 31, 2022, do not expand the program to cover ammonium nitrate or other reactive substances. Ammonium nitrate is only identified as a "priority chemical for EPA's upcoming review," with no timeline noted, despite the agency's acknowledgement that "incidents involving AN [ammonium nitrate] may be among the most severe and highest-profile accidental releases both in the United States and around the world."

Under the proposed rule, most RMP facilities will have to conduct a root-cause analysis within 12 months of a chemical incident with significant impacts, such as on-site or off-site deaths, injuries, or property damage. But as long as the Weaver fertilizer plant, other ammonium nitrate facilities, and facilities that use or store other unregulated highly hazardous substances are exempt from the RMP program, they will not have to conduct this analysis.

Westlake Chemical South Plant explosion

Photo credit: Jerid Frudge

Westlake, Louisiana
January 26th, 2022, approximately 11:00 am

- 6 workers injured

- 7,000 students ordered to shelter in place

- The facility has the potential to release 660,000 pounds of highly toxic gas across a 25 miles radius, covering all of Lake Charles and more than a dozen smaller towns.

KEY LESSONS:

Right now, high-risk facilities are not explicitly required to consider natural hazards or climate change as part of their risk management program, or to install standby or emergency power for their production processes or chemical storage. This is a serious problem, because many RMP facilities are densely clustered in the path of hurricanes and other natural hazards. EPA should require RMP facilities to implement safer chemicals and processes whenever they are available; it should also require the use of backup power for production processes and chemical storage.

What Happened

Westlake Chemical South/Eagle US 2 LLC is the second largest chlorine factory in the Western Hemisphere. The plant manufactures vinyl chloride monomer, which is used to produce PVC (polyvinyl chloride). Located across the Calcasieu River from Lake Charles, a city of over 70,000 residents, the Westlake Chemical South plant is one of 37 RMP facilities in the area.[3]

At 11:00 am, residents of the area living within two miles of the Westlake Chemical South facility heard a loud boom and could see black smoke forming into a "mushroom-shaped cloud" above the chemical complex. An empty ethylene dichloride storage tank had exploded, sending smoke high in the air. Five employees were hospitalized, with at least one reporting injuries to his lungs, head, neck, shoulders and back.

More than 7,000 students in a dozen schools had to shelter in place, and teachers at nearby Westlake and Sulphur schools told reporters that their school buildings shook during the explosion.

One community member reported that they could see the giant plume from their house, and could smell harsh chemicals even after the shelter in place order had been lifted, despite company reassurances that all toxic vapors had dissipated.

Cumulative Health and Environmental Hazards

Ethylene dichloride is a flammable carcinogen, and one of many toxic chemicals stored or manufactured in the Westlake South complex which, when released into the community, contribute to increased cancer risk. Propublica has reported that the Westlake area has a cancer risk from air toxics of 8.5 times the EPA's "acceptable" risk level.

The Lake Charles area has 37 facilities covered by the RMP program that use or store extremely hazardous chemicals above threshold amounts (in addition to many other facilities with hazardous chemicals that are not covered by the program). Many of these facilities have overlapping chemical release vulnerability zones extending up to 25 miles in radius. And they all exist in an area frequently hit by hurricanes, which are becoming increasingly severe due to climate change.

The Westlake/Sulphur area, and many other communities around the country, host concentrations of many polluting and hazardous facilities, along with contaminated "legacy" sites. In addition to the daily risk of a chemical disaster, these areas experience high levels of toxic emissions from multiple sources.

According to the EPA's Toxic Release Inventory, 31 facilities within ten miles of the Westlake South plant reported toxic chemical releases in 2021. They reported a combined 10,088,754 pounds of toxic releases to air and water (including 95 different chemicals). These releases include:

- 717,713 pounds of carcinogens (41 different chemicals); and
- 921,980 pounds of 22 other chemicals that are reproductive or developmental toxicants, neurotoxicants, or endocrine (hormone) disruptors.

The Westlake Chemical South facility sits less than 3 miles from the historic Black community of Mossville, which was founded in 1790 by formerly enslaved people. Mossville is now surrounded by over 15 plastics and petrochemical manufacturing and refining facilities. A number of current and former Mossville residents suffer from cancer, respiratory issues and other health problems which can be caused by, and are undoubtedly exacerbated by, elevated levels of pollution in the air and water. Blood levels of dioxin in Mossville residents were found to be three times that of the general population. From 2004-2013, just five of the many facilities adjacent to the Mossville community (including the Westlake Chemical South/Eagle US 2 complex) released 2-4 million pounds of toxic emissions every year (a total of almost 29 million pounds over the ten-year period). Total toxic releases for the greater Westlake area over the same period were over 73 million pounds.

Around 2013, SASOL, a South African-owned petrochemical company, announced plans to build the world's largest ethane cracker in the community and offered a buyout to some residents of Mossville and the nearby town of Brentwood. There is strong evidence to suggest that the handling of the voluntary buyout programs in the two towns was racially discriminatory against the Black residents of Mossville. The company, as well as local, state and federal authorities, have all failed to act in good faith or to enact a just and equitable transition and relocation for the residents of Mossville. Mossville is one example of a community left behind by past and current government policies, which have exposed the residents to not only the risk of chemical disasters but also to daily cumulative toxic exposures from multiple facilities. Unfortunately, there are many other communities facing similar disproportionate hazards and cumulative impacts around the country.

The Potential for Even Greater Disaster

According to the Westlake Chemical South facility's most recent Risk Management Plan (RMP), accessed by the Times-Picayune and New Orleans Advocate in March 2022, a worst-case chemical incident could release up to 660,000 pounds of highly toxic gas that could travel up to 25 miles in radius, covering all of Lake Charles and more than a dozen smaller towns. This would immediately threaten more than 210,000 people with serious injury or death. According to the facility's RMP plan, the plant uses and stores 37 million pounds of chlorine, 69 million pounds of vinyl chloride, 15 million pounds of ethyl chloride, and 80,000 pounds of anhydrous ammonia - all extremely hazardous chemicals. A major incident at this or similar facilities could release millions of pounds of all of these (and other) chemicals at the same time.

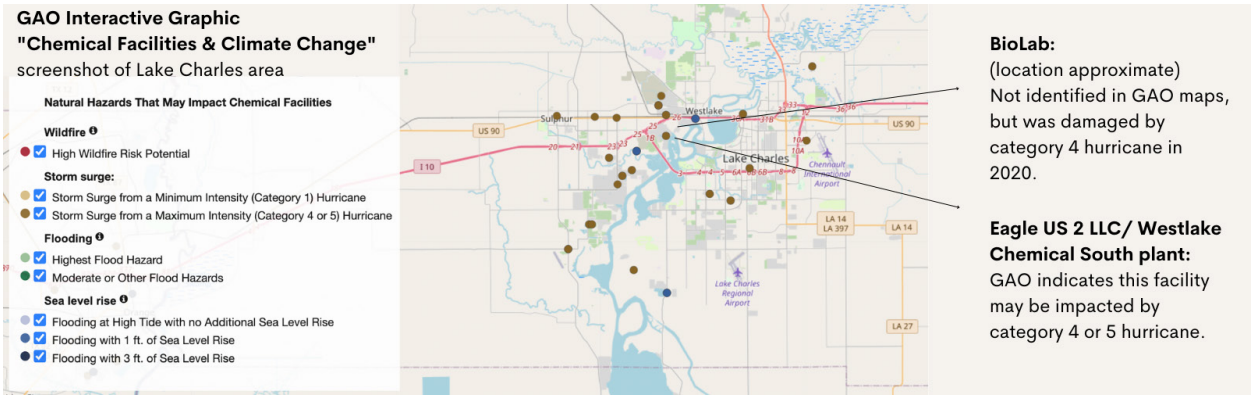
Despite the fact that the Westlake Chemical South plant contains massive amounts of several high-risk chemicals, its chemical disaster prevention and preparedness plan only has to account for a worst-case release based on one chemical at a time, rather than a release that realistically could include several chemicals in combination. And despite the fact that the facility sits within 10 miles of at least 36 other RMP facilities, its chemical disaster plan only has to account for chemicals on its own site, even if there are other large stockpiles of dangerous chemicals nearby or even adjacent.

A 2022 interactive map published by the Government Accountability Office specifically identifies the Westlake Chemical South/Eagle US 2 LLC Plant as a facility potentially impacted by storm surges from Category 4-5 hurricanes.[4]

In August 2020, Hurricane Laura helped trigger a three-day fire at the Bio-Lab Inc. facility also in Westlake, which released chlorine gas and destroyed the plant. Residents of three towns in Southern Louisiana were ordered to shelter in place, turn off their air conditioning, and close windows and doors to avoid contact with chlorine gas and other harmful emissions. Serious injuries were likely only avoided because most residents had already evacuated due to the hurricane.

Facilities like Westlake Chemical South, and thousands of other RMP facilities in natural disaster prone areas, are not currently required to explicitly address these risks in their analysis and planning, even as hurricanes and other natural hazards are increasing in number and severity as a result of climate change. Nor are RMP facilities required to take any specific actions to prepare for natural hazards, which could in turn cause dangerous chemical releases, triggering a "double disaster."

The long track record of chemical incidents, releases, and environmental and safety violations at facilities now owned by Westlake Chemical does not inspire confidence that a major disaster will be prevented.[5] Between the years 2004-2020, there were 14 chemical incidents at the Westlake Chemical South/Eagle US 2 LLC Plant, according to EPA data, which together injured 12 workers, caused 5,000 people to shelter in place and 130 people to evacuate, required 27 people to seek medical treatment, and cost nearly $12M in damages.[6]



In 2013, the Louisiana Department of Environmental Quality issued a $400,000 fine "after years of chemical spills and environmental issues" at the facility. Other issues included noncompliance with the Clean Water Act, and "significant violation" of the Clean Air Act and hazardous waste rules, all of which contribute to the cumulative health and environmental burden on the community.

A Stronger RMP Rule Could Prevent Future Disasters

The current RMP rule does not explicitly require facilities like Westlake Chemical South to address natural hazards or climate change as part of their risk management program, or take any measures to prevent chemical disasters triggered by these events, as noted in a 2022 Government Accountability Office report.

The RMP rule should require facilities to consider climate change and natural disasters in every aspect of chemical risk management. The rule should specifically include requirements to assess natural hazards (including wildfire, storm surge, flooding, sea level rise, and high winds), remove chemical hazards to the greatest extent possible, implement other disaster prevention measures, modify shutdown and startup procedures to reduce releases and hazards during these periods, maintain reliable backup power, and conduct real-time fenceline monitoring and reporting during and immediately after natural disasters.

Published data shows that across all programs and industry types, environmental violation rates of 50-70% are not unusual. Poor compliance with rules necessary to prevent chemical disasters can lead to great loss of life and property. The RMP rule should be much better designed to ensure compliance. It should include sufficient reporting, monitoring, and automatic penalties to ensure full compliance, including more frequent compliance reporting, real-time fenceline air monitoring and leak detection, escalation of penalties, and stronger worker involvement. The rule should include even stronger compliance design for companies and facilities that have repeated problems, including those in the chemical, oil refining, and petrochemical sectors. When RMP facilities are also major sources of air pollution, RMP requirements should be included in facility Title V permits under the Clean Air Act, just as other similar requirements are already. This would allow inclusion of terms for RMP compliance in these permits, elevate the importance of compliance with the RMP rule, and support enforcement.

The RMP rule should account for the reality that many communities host clusters of RMP facilities, other hazardous chemical sites and facilities, and multiple, cumulative toxic emissions and exposures. As is well documented, these are disproportionately communities of color and low-income communities – the very overburdened and disproportionately impacted communities that the Biden Administration and EPA have committed to protect.

The RMP rule must address these cumulative hazards, especially in communities that are already disproportionately impacted by and overburdened with chemical hazards and exposures, through common-sense measures, including:

- Requirements that facility worst-case scenario analyses, response plans, and hazard reduction plans account for the presence of other RMP facilities in the area; and
- Requirements for certain facilities to implement stronger prevention methods, including removing hazards when possible; these should include new facilities, facilities with incidents in the last 5 years, facilities in communities with multiple pollution sources, facilities using particularly hazardous chemicals or with available safer alternative chemicals or processes; and facilities located in or near environmental justice communities.

Key Lessons: Climate hazards and cumulative impacts must be addressed in the RMP rule; proposed revisions to the rule do not go nearly far enough, and trust RMP facilities with an egregious safety record - like Westlake Chemical South - to voluntarily improve.

The second largest chlorine factory in the Western hemisphere, which uses or stores over 121 million pounds of chlorine, vinyl chloride, and ethyl chloride annually, sits directly in the path of hurricanes. But it is not clearly required to plan for extreme weather events under the current RMP rule, or remove hazards when possible. The Lake Charles area hosts a large cluster of hazardous and polluting industrial facilities, which impose multiple, cumulative health and environmental hazards that disproportionately endanger these residents.

The current RMP rule also fails to address these cumulative hazards, or implement stronger compliance and prevention measures for facilities that have poor safety records.

Proposed revisions to the RMP rule, published on August 31, 2022, address some, but not all of these issues. In its proposed rule, EPA explicitly requires RMP facilities to assess natural hazards and loss of power in their hazard reviews. This is important, because loss of power is often a contributing cause of chemical incidents triggered by natural hazards like flooding and hurricanes. However, the EPA stops short of actually requiring RMP facilities to install standby or emergency power for production processes or chemical storage in the proposed rule. This doesn't do enough to prevent chemical disasters. By the EPA's own admission, "only 63 percent (310) and 44 percent (1,971) of facilities with Program 2 and Program 3 processes, respectively, have implemented backup power at their facilities, despite identifying that the loss of cooling, heating, electricity, and instrument air is a major potential hazard to their process operations." In other words, the majority of RMP facilities who have identified power loss as a danger to chemical safety have failed to then implement backup power. EPA simply cannot rely on RMP facilities to act voluntarily to make their operations safer, such as by installing reliable backup power sources.

EPA acknowledges "the need for considering expanding fenceline monitoring for RMP-regulated facilities" but doesn't actually require additional fenceline monitoring in the proposed rule. The agency does take the small step of requiring that facilities supply backup power to any air pollution control or monitoring equipment that they may already have. But EPA also acknowledges in its proposed rule that facility owners have been intentionally turning off air monitoring and control equipment before natural disasters arrive, to "evade monitoring requirements." This, again, does not inspire confidence that RMP facilities will implement fenceline monitoring or adopt any other safety improvements voluntarily.

Photo Credit: Ryan Abshire

The proposed revisions to the RMP rule include new requirements for a small segment of RMP facilities to "consider and document the feasibility of applying safer technologies and alternatives." However, this provision would only apply to only 5% of RMP facilities (only those with petroleum and coal products manufacturing processes, or chemical manufacturing processes, that are located within 1 mile of another RMP-regulated facility with similar processes; and to facilities with these processes using hydrofluoric acid regardless of proximity to other facilities) and would exclude thousands of RMP facilities with large potential disaster zones or that endanger hundreds of thousands of people.

According to EPA's data, the Westlake Chemical South/Eagle US 2 LLC plant does not meet these narrow criteria, so would not be required to conduct a safer alternatives assessment, despite its location in an area with high natural hazards, the fact that it stores or uses over 100 million pounds of highly hazardous chemicals, and its contribution to cumulative chemical impacts as one of 37 high-risk facilities in the area. EPA's draft rule includes only minimal improvements to support compliance with the program, especially at facilities like Westlake Chemical South that have repeated problems (over 14 incidents reported to EPA in less than ten years). In particular, the proposed revisions do not require RMP provisions to be included in Clean Air Act Title V permits, and do not include other key compliance measures (such as more frequent compliance reporting, escalation of penalties, or required real-time air monitoring) for facilities with poor safety records or in the most hazardous industries.

Majestic Industries and Qualco Inc. chemical fire

Passaic, New Jersey
January 14, 2022, approximately 8:30 pm

- 200 firefighters battled massive fire in densely populated area for three days

- the fire came dangerously close to igniting a warehouse where 3 million lbs of chemicals were stored, including chlorine pellets

KEY LESSONS:

The EPA should update the RMP to account for the fire and explosion risks of nearby chemical stockpiles, and cover additional chemicals.

What Happened

A massive fire broke out at the Majestic Industries furniture warehouse in Passaic, New Jersey, where it then spread to the adjoining Qualco Inc. chemical plant. Both were located on the same industrial lot and owned by the same family. Qualco housed large quantities of chlorine pellets and other chemicals ranging from industrial disinfectants to bleaching agents. Heavy smoke from the fire could be seen and smelled for miles, and residents were asked to shelter in place and keep their windows closed. Some amount of chlorine was released or burned, according to local news reports.

200 firefighters, mostly volunteers and many of whom traveled from neighboring counties, fought for three days to keep the fire contained. Fire officials had to shut down the sprinkler system in the Qualco building because water, when mixed with the chemicals on site, could create chlorine gas.

The fire destroyed two Majestic Industries buildings, but was prevented from reaching other areas at the Qualco plant where up to 3 million pounds of potentially hazardous chemicals - including more than 100,000 pounds of chlorine pellets - were stored. Damage to the two facilities was initially estimated at $15 million.

U.S. Representative Bill Pascrell Jr. (D-NJ 9th District) sent a letter to the U.S. Chemical Safety and Hazard Investigation Board requesting that the agency investigate the Qualco/Majestic Industries factory complex fire, but the CSB has not yet stated whether it will investigate.

Over 68,000 people live within one mile of the site. 81% are people of color, and 55% are low income. This area has a high level of social vulnerability based on factors like housing density, income and race, and is above the 86th percentile nationally for 12 different Environmental Justice indicators.

The Potential for Even Greater Disaster

Had the fire reached the chemical stockpile stored at Qualco, it could have caused "one of the most catastrophic chemical disasters in the region in recent history," according to fire officials.

According to information filed with New Jersey regulators, Qualco stored up to 3 million pounds of potentially hazardous substances. In addition to the chlorine pellets, these chemicals included at any given time 100,000 to 500,000 pounds of trichloroisocyanuric acid, a chemical frequently used in swimming pools that can combine with other chemicals to produce chlorine, and which is classified by the state as a dangerous explosion hazard. Other chemicals on site were explosive, flammable, or toxic to humans. A chemical fire or explosion involving up to 3 million pounds of mixed hazardous chemicals would have been disastrous.

Had the fire reached the chemical stockpile stored at Qualco, it could have caused "one of the most catastrophic chemical disasters in the region in recent history," according to fire officials. Passaic is a city of 70,500 people living in a 3-square mile area (one of the most densely populated cities in the U.S.). Had the fire spread, many aging factory buildings along the river, which lacked sprinkler systems and are primarily wooden structures, could have ignited as well.

"We had a plan to evacuate the Eastside if that caught fire," Passaic Fire Chief Patrick Trentacost said, referring to the chlorine plant in the main Qualco building. "And if that happened, I would have also had to withdraw firefighters from the scene."

A Stronger RMP Rule Could Prevent These Disasters

Despite its stockpile of up to 3 million pounds of toxic, flammable, and explosive chemicals, and its location in a densely populated area, the Qualco chemical plant was not covered by the RMP program. Despite their hazards, the chemicals on site at Qualco are not included under the RMP rule. The facility was therefore not required to report the hazardous chemicals on site to EPA, conduct a worst-case release scenario analysis, coordinate incident planning with local first responders, or consider measures to prevent a chemical disaster.

The RMP rule should be expanded to include more hazardous chemicals (especially additional flammable, explosive, and reactive chemicals), lower the thresholds that trigger coverage under the program, and adopt other measures to ensure that facilities like Qualco that store large amounts of hazardous chemicals are included. There are approximately 395 chemicals regulated by California, New Jersey, or the Occupational Safety and Health Administration's Process Safety Management rule that are not covered by the RMP program.

Stronger prevention requirements and measures to ensure compliance must be designed into the RMP rule, especially for facilities that are adjacent to or near other RMP facilities, or to non-RMP facilities that use or store hazardous chemicals. Worst-case scenario analyses, coordination with local responders, and prevention requirements must account for nearby chemical stockpiles, and the potential for a combined incident.

Key Lessons: Nearby chemical stockpiles are ignored under the current RMP Rule, and in fevisions proposed by EPA; and the proposed rule fails to cover any new chemicals.

The current RMP rule exempts many hazardous chemicals, and sets thresholds for program coverage so high that many facilities with large stockpiles of dangerous chemicals, like Qualco, are not covered. It also fails to account for adjacent or co-located facilities. Worst-case scenario analyses and risk management plans are not required to account for: two or more facilities or processes that are part of the same complex but are considered separate "facilities" under the RMP rule; two or more RMP facilities that are adjacent or near each other; or non-RMP facilities with stockpiles of hazardous chemicals that are adjacent to or very near RMP facilities. These situations, which are common, create an invisible - and unregulated - risk of a much larger disaster, and require a greater focus on prevention at these locations.

Proposed revisions to the RMP rule, published on August 31, 2022, do not expand the program to cover any new chemicals, or lower the thresholds that would trigger coverage for chemicals already included, so facilities like Qualco that store millions of pounds of dangerous chemicals would continue to be exempt.

Although the draft rule does require a small segment of RMP facilities located near some other RMP facilities to consider safer alternatives, this proposed revision would only apply to 590 facilities (only 5% of RMP facilities), and would do nothing to prevent future chemical fires or explosions at facilities like Qualco, given that this and similar facilities would still not be covered by the RMP program. The proposed revision ignores all other instances of adjacent or co-located facilities, and stockpiles of hazardous chemicals at non-RMP facilities that are next to RMP facilities, which could dramatically worsen chemical incidents.

MORE RECOMMENDED RESOURCES:

Coming Clean and EJHA's Chemical Disaster Prevention Program

Public comments submitted by EJHA, Coming Clean and 57 other organizations to the EPA in July, 2021

The Coalition to Prevent Chemical Disasters

Unprepared for Disaster: Chemical Hazards in the Wake of Hurricane Ida
A 2021 report profiles three facilities in Louisiana that put communities at risk by releasing toxic chemicals into the environment after being hit with high winds and flooding from Hurricane Ida. We recommend several ways the EPA could meaningfully update its Risk Management Program to prevent chemical disasters from happening in the first place.

Life at the Fenceline: Understanding Cumulative Health Hazards in Environmental Justice Communities
Research shows that people on the fenceline live under the threat of chemical disasters, have limited access to healthy food, and experience higher rates of cancer and respiratory illness.

Who's In Danger? Race, Poverty and Chemical Disasters
Research shows that the people most at risk from chemical disasters are communities of color and low-income communities.

The Louisville Charter for Safer Chemicals
Our roadmap for transforming the chemical industry, endorsed by over 125 organizations. Safer chemicals and processes exist. We must phase out the production of chemicals that put communities in danger and contribute to climate change - and take immediate action to strengthen and restore communities that have have borne the brunt of legacy and ongoing contamination by the chemical industry.

ENDNOTES:

1. EPA Air monitoring summaries are available from the On-Scene Coordinator of the EPA at https://response.epa.gov/site/doc_list.aspx?site_id=15489&RadUrid=b9304f51-e65d-40d1-8355-081a246273e3

2. Population Data for Fenceline Community according to EPA at https://echo.epa.gov/detailed-facility-report?fid=110058124603, and U.S. Census Data for Winston-Salem at https://www.census.gov/quickfacts/winstonsalemcitynorthcarolina

3. GeoPlatform ArcGIS Online. EPA Emergency Response (ER) Risk Management Plan (RMP) Facilities in zip codes 70601 70605 70663 70665 70669.

4. The GAO's interactive tool does not include all RMP facilities in the Lake Charles area.

5. In this report we refer to the facility generally as Westlake Chemical South, or as Westlake Chemical South/Eagle US 2 LLC, for simplicity. Westlake Corporation acquired the facility in 2016 through its purchase of Axiall Corporation (and its subsidiary Eagle US 2 LLC). Before Axiall, it was owned by Conde Vista, Georgia Gulf, and PPG.

6. Appendix A, Technical Background Document RMP SCCAP.