



U.S. Environmental Protection Agency

**Public Listening Session on Review of EPA Risk Management Program (RMP)
Regulation Revisions Completed Since 2017**

Docket ID No. EPA-HQ-OLEM-2021-0312

July 8, 2021

**Testimony of Laura Mirman-Heslin
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Office of the New York State Attorney General
Letitia James**

Testimony of New York State Office of the Attorney General
Regarding Improvements to the EPA Risk Management Program Regulations¹

I. Introduction

Last year, the New York State Office of Attorney General Letitia James partnered with 13 other states, the District of Columbia, the City of Philadelphia, and Harris County (TX) in filing a petition for review challenging the Environmental Protection Agency's rollback of its 2017 Accident Prevention Amendments. The 2017 rule amended the Risk Management Program (RMP) to improve safeguards to avoid and mitigate chemical accidents. Our office also has extensive experience in enforcing state and federal environmental laws to protect New Yorkers and their health, safety, and natural resources.

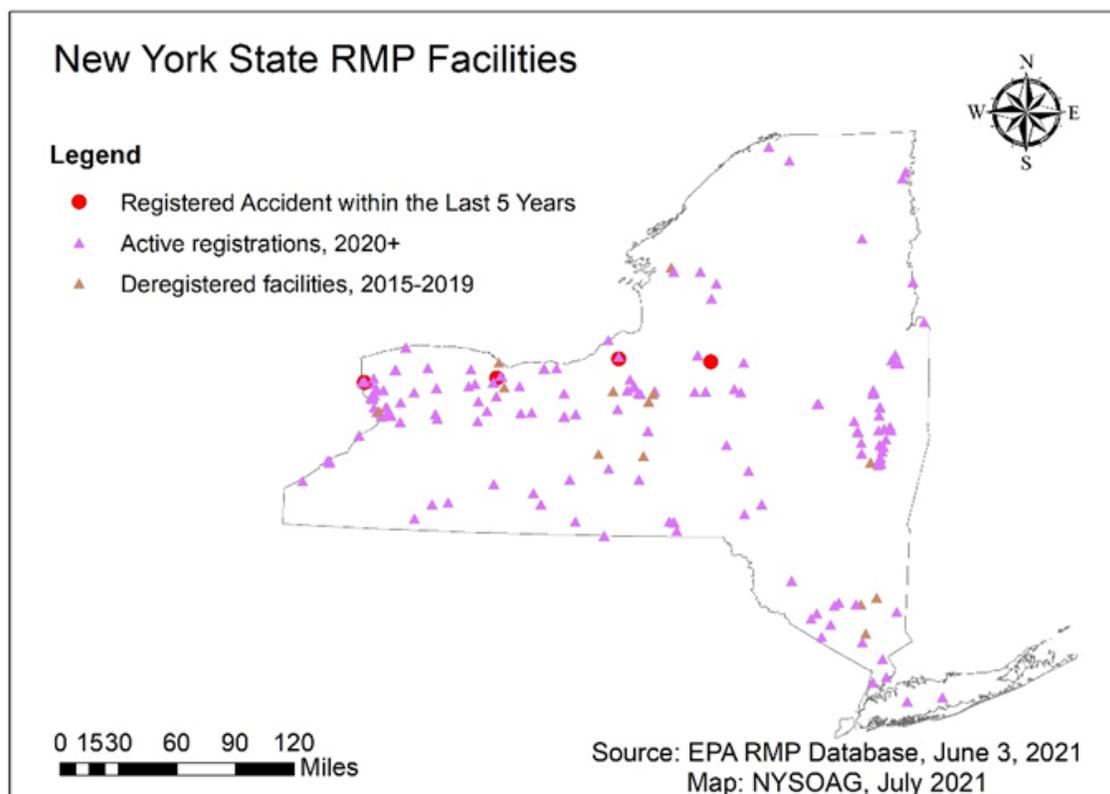
Attorney General James was very concerned about the direction of the agency's Risk Management Program under the previous Administration. The 2019 rollback rule eviscerated the 2017 rule's improvements to the accident prevention requirements and delayed the provisions of that rule that EPA did not cut. Attorney General James strongly opposed the rollback and is encouraged that EPA is now addressing both restoring the 2017 rule and improving it, particularly with respect to better responding to the increasing impacts of climate change on facility safety and the substantial risk that RMP facilities pose to environmental justice communities.

These written comments will focus on two areas in which the 2017 rule should be improved. First, EPA should amend the RMP regulations to mandate risk analysis and mitigation of hazards posed by natural hazards for RMP facilities. Second, EPA should address environmental justice by taking steps to better protect host and surrounding communities by reducing risks and improving communication.

¹ This document, along with accompanying exhibits, is a longer version of the testimony I presented orally at the EPA listening session on July 8, 2021.

II. New Yorkers are at Risk from Chemical Plant Accidents

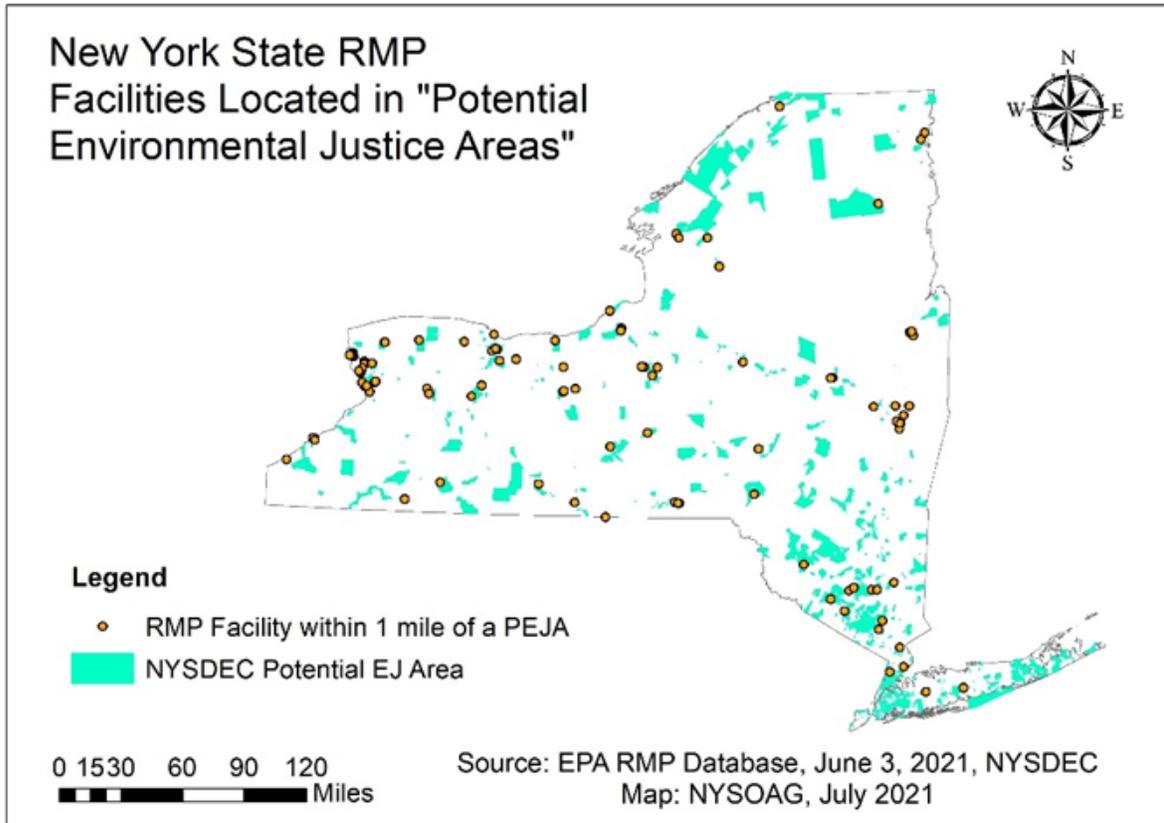
As of June 2021, New York is home to 182 facilities regulated under the Risk Management Program. There are approximately 601,000 people that live within one mile of an RMP facility in New York.²



Between 2015 and 2019, there were eight reported accidents in New York, releasing 786 pounds of chemicals into the surrounding communities. These accidents resulted in seven injuries, one hospitalization, and property damage totaling \$9,600,000.

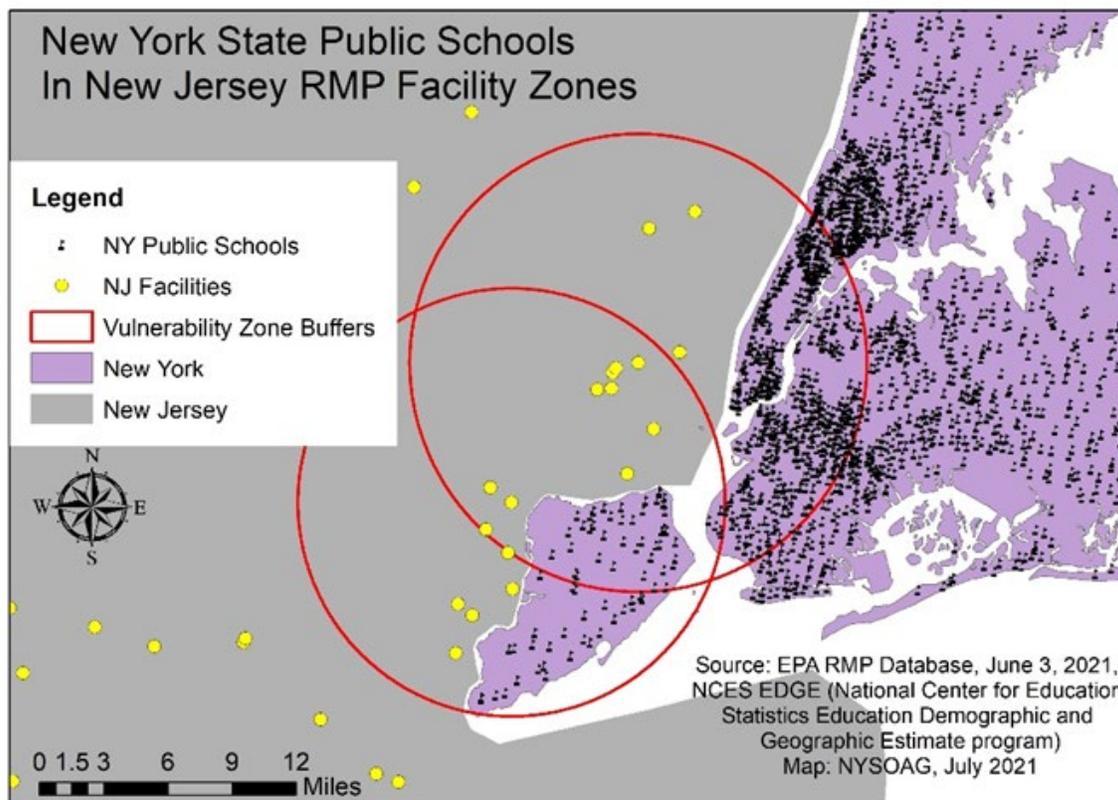
² This number was obtained using EPA EJSCREEN 2020 (ACS 2014-2018), Census Block Group, <https://gaftp.epa.gov/EJSCREEN/2020/>.

RMP facilities pose a direct and substantial risk to New York’s environmental justice communities. In New York, 104 RMP facilities are located within one mile of a potential environmental justice area designated by the New York State Department of Environmental Conservation.³



³ Data came from KMZ file from NYS DEC; available from NYS GIS Clearinghouse, <https://gis.ny.gov/gisdata/inventories/details.cfm?DSID=1273>.

In addition, there are a number of other chemical facilities located across the border in Northern New Jersey, in close proximity to New York City. Between 2018 and 2019, there were approximately 467,000 children within New York K-12 public schools that are located within the vulnerability zone for RMP facilities in New Jersey. Of these children, 67.7% receive free or reduced lunch and 61.3% are students of color.⁴



III. EPA Should Amend the RMP Regulations to Mandate Risk Analysis and Mitigation of Natural Hazards for RMP Facilities

RMP facilities are becoming increasingly vulnerable to “natech incidents,” in which technological failures or accidents are caused or worsened by natural hazards such as extreme weather. A recent example of a natech incident is the August 2017 disaster at the Arkema Crosby chemical facility in Texas. After the facility was flooded during Hurricane Harvey, its refrigeration of organic peroxide, an unstable chemical produced onsite, failed. As the temperature rose, the organic peroxide decomposed and ignited, causing large fires and releases of the chemical.

⁴ This data came from: (1) National Center for Education Statistics Education Demographic and Geographic Estimate Program, Public School Characteristics, 2018-2019 shapefile, <https://data-nces.opendata.arcgis.com/search?groupIds=455147561fd3416daa180395fb4e9237>; and (2) Center for Effective Government, *America’s Five Largest Cities and Their Vulnerability Zones* (Sept. 2014), <https://www.foreffectivegov.org/kids-in-danger-zones-largest-cities>.

Approximately a dozen first responders on the scene became sick and were treated at a nearby hospital.

In its report on the Arkema fire, the U.S. Chemical Safety and Hazard Investigation Board, or CSB, noted the increasing risk severe weather poses for chemical facilities. The CSB found that the Arkema personnel that performed the process hazard analysis for the low temperature warehouses did not document any flooding risk. CSB noted that in recent years, flooding from extreme rainfall events has increased, and that a 2015 EPA report found that this trend is projected to continue as a result of climate change, increasing the flood risk in many parts of the country.⁵ CSB recommended that chemical manufacturing, handling or storage facilities perform analyses to determine their susceptibility to these extreme weather events and evaluate the adequacy of relevant safeguards.

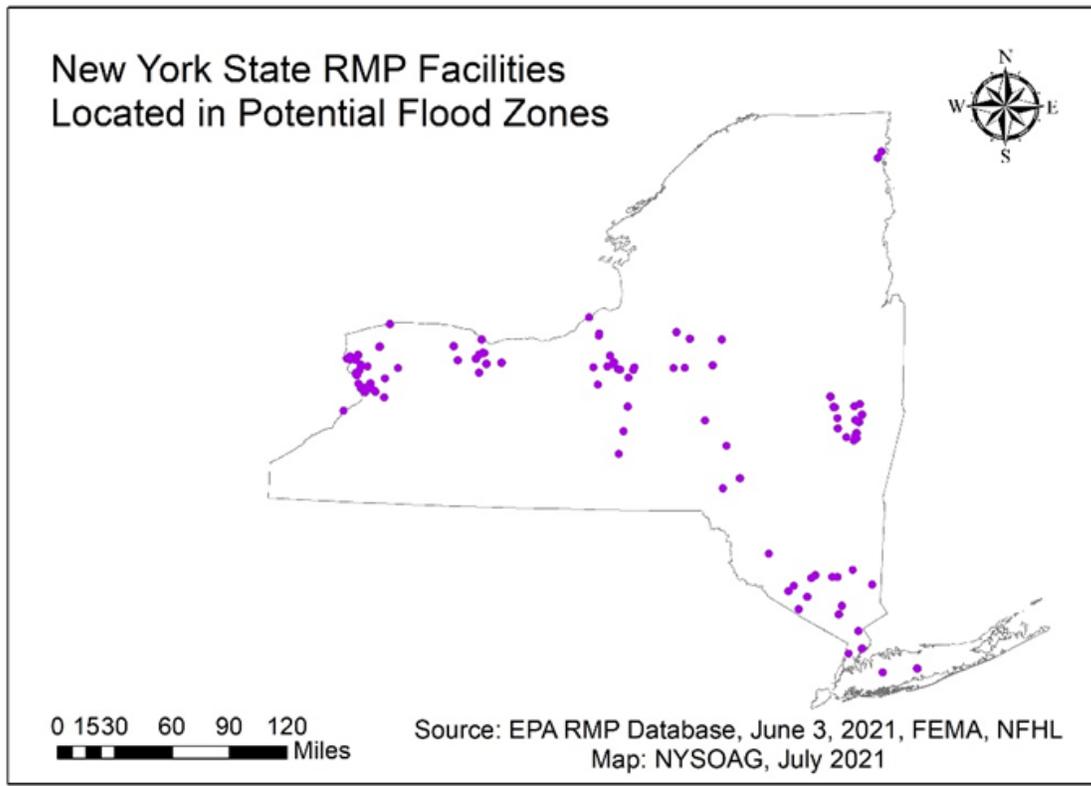
This issue is especially important to New York as it is experiencing threats from flooding worsened by sea level rise and from more extreme storms. For example, the twelve inches of sea level rise New York City has experienced in the past century exacerbated the flooding caused by Hurricane Sandy by about twenty-five square miles.⁶ That flooding led to numerous oil spills in New York and New Jersey, and devastated areas of New York City, which in some areas lost power and other critical services for extended periods of time. New York State has also experienced dramatic increases in the frequency and intensity of extreme rain storms, consistent with scientists' predictions of the alteration of historical weather patterns resulting from climate change.⁷ In New York, 112 RMP facilities are located in potential flood zones, which includes Federal Emergency Management Agency (FEMA) Special Flood Hazard Areas and Moderate Flood Areas.⁸

⁵ U.S. EPA, *Climate Action Benefits Report* (2015), <https://www.epa.gov/cira/climate-action-benefits-inland-flooding>.

⁶ New York City Panel on Climate Change, *2015 Report, Chapter 2: Sea Level Rise and Coastal Storms* (Feb. 16, 2015), Ann. N.Y. Acad. Sci. ISSN 0077-8923, <http://onlinelibrary.wiley.com/doi/10.1111/nyas.12593/full>.

⁷ New York State Office of the Attorney General, *Current & Future Trends in Extreme Rainfall Across New York State, A Report from the Environmental Protection Bureau of New York State Attorney General Eric T. Schneiderman* (Sept. 2014) (based on data from the 2014 National Climate Assessment and the National Oceanographic and Atmospheric Administration's Northeast Regional Climate Center), https://ag.ny.gov/pdfs/Extreme_Precipitation_Report%209%202%2014.pdf.

⁸ FEMA, Flood Zones, <https://www.fema.gov/glossary/flood-zones>.



Consideration of the resiliency of RMP facilities to extreme weather events is further warranted because of the direct and substantial risk these facilities pose to environmental justice communities. For example, low-income and communities of color are more likely to be located in areas susceptible to flooding.⁹

New York and other states have taken steps to require facilities to consider threats from extreme weather. New York’s Climate Leadership and Community Protection Act, enacted in 2019, requires applicants for major permits issued by the Department of Environmental Conservation “to demonstrate that future physical climate risk has been considered.”¹⁰ The Department “may require the applicant to mitigate significant risks to public infrastructure and/or services, private property not owned by the applicant, adverse impacts on disadvantaged

⁹ Brie Sherwin, *After the Storm: The Importance of Acknowledging Environmental Justice in Sustainable Development and Disaster Preparedness* (Spring 2019), <https://scholarship.law.duke.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1362&context=delpf>.

¹⁰ S. 6599, Section 17-b (New York 2019), <https://www.nysenate.gov/legislation/bills/2019/s6599>.

communities, and/or natural resources in the vicinity of the project.”¹¹ Other states have enacted similar laws or regulations. A summary of those state laws and regulations concerning assessment of natural hazards is attached to this testimony as *Exhibit A*.

Similarly, EPA should require RMP facilities to evaluate risks from extreme weather and natech incidents, and implement measures as necessary to mitigate those risks. At a minimum, EPA should revise 40 C.F.R. §§ 68.50 and 68.67 to require that natural hazards such as severe weather and flooding be considered and mitigated as part of the process hazard analysis applicable to Program 2 and 3 facilities. Mitigation measures could include backup power supply, leak detection systems, and storm hardening.

IV. EPA Should Take Steps to Better Protect Fenceline Communities by Reducing Risks and Improving Communication

In New York State, approximately 601,000 people live within one mile of an RMP facility. According to a report by the Center for Effective Government: “People of color and people living in poverty, especially poor children of color, are significantly more likely to live in these fenceline zones than whites and people with incomes above the poverty line.”¹² EPA’s announcement of the recent RMP listening sessions acknowledges that RMP “facilities are often located in communities that have historically borne a disproportionate burden from pollution.”¹³ Low-income communities and communities of color, which often have the least amount of political and economic power, are the most at risk in the event of an accidental chemical release. Therefore, it is imperative that EPA take further steps to protect fenceline environmental justice communities by reducing risks and improving communication. Two specific steps are particularly warranted.

First, EPA can reduce risks for fenceline communities by restoring and improving the provisions of the 2017 rule that EPA eliminated in 2019. For example, EPA should restore the Safer Technology and Alternatives Analysis requirement and consider expanding it to all Program 2 and 3 facilities. Similar inherently safer technology programs have been successfully implemented in several states including California, Massachusetts, and New Jersey. A summary of these programs and their safety achievements is attached as *Exhibit B* to this testimony.

In this regard, EPA should require RMP facilities that utilize hydrogen fluoride or hydrofluoric acid to consider safer alternatives to those chemicals. Recent accidents involving these chemicals at the Philadelphia Energy Solutions refinery, the Husky Energy refinery in Wisconsin, and the Torrance Refinery in California demonstrate the urgent need to address the

¹¹ *Id.*

¹² Center for Effective Government, *Living in the Shadow of Danger; Poverty, Race, and Unequal Chemical Facility Hazards* (Jan. 2016), at 4, <https://www.foreffectivegov.org/shadow-of-danger>.

¹³ EPA, *EPA Announces Public Listening Sessions of the Risk Management Plan Rule* (May 26, 2021) <https://www.epa.gov/newsreleases/epa-announces-public-listening-sessions-risk-management-plan-rule-0>.

risks posed by these specific chemicals. EPA should require refineries to evaluate the replacement of these chemicals and report their findings to EPA within a year. If refineries or other facilities contend it is infeasible to replace these chemicals, EPA should mandate enhanced monitoring and inspection.

Second, EPA should better communicate with fence-line communities on risks and emergency preparedness. Currently, it is too difficult for members of the public that live near RMP facilities to get information about those facilities. EPA should increase information availability by requiring RMP facilities to create or fund community alert systems that provide text alerts in multiple languages to the cell phones of individuals who live in the vulnerability zones of those facilities. The systems could send out text alerts when there are incidents at facilities, to make the public aware and let them know what steps to take, such as sheltering in place. The alert systems could also send an annual notification to such individuals, letting them know that they live near an RMP facility and where they can obtain information about it.

Currently, to obtain information on an RMP facility, an individual must either go to a federal reading room or make a request from a local emergency planning committee. Reading rooms may be located far away, require appointments, or have limited hours. Individuals may not know how to get in touch with local emergency planning committees to obtain information. Rather than relying on this inefficient and antiquated system, EPA should consider creating an online database containing a summary of pertinent information from facilities' Risk Management Plans. This would include the facilities' list of chemicals used, hazard analyses, and emergency response plans. By summarizing the Risk Management Plans, EPA can avoid releasing sensitive information.

Finally, air monitoring can provide fence-line communities with the information they need to better understand the health risks from air toxics in their communities. The current monitoring of air toxics is inadequate and can readily be improved as recognized in a 2020 Government Accountability Office report.¹⁴ Significantly, air monitoring is even worse during natural disasters and a 2019 EPA Office of Inspector General report called for EPA to improve its natural disaster air monitoring.¹⁵ EPA should consider requiring real-time fence-line air monitoring for air toxics at the most dangerous RMP facilities. EPA has the authority to require such monitoring pursuant to Clean Air Act section 112(r)(7)(A) and (B), and section 112(d).

In conclusion, we urge EPA to restore and improve the 2017 Accident Prevention Amendments by mandating risk analysis and mitigation of extreme weather hazards for RMP

¹⁴ Government Accountability Office, *Air Pollution: Opportunities to Better Sustain and Modernize the National Air Quality Monitoring System* (Nov. 12, 2020), <https://www.gao.gov/products/gao-21-38>.

¹⁵ EPA Office of Inspector General, *EPA Needs to Improve Its Emergency Planning to Better Address Air Quality Concerns During Future Disasters* (Dec. 16, 2019), <https://www.epa.gov/office-inspector-general/report-epa-needs-improve-its-emergency-planning-better-address-air-quality>.

facilities, and by taking steps to better protect environmental justice communities by reducing risks and improving communication. Thank you for considering this testimony and the accompanying materials in the agency's development of a robust proposed rule to improve the RMP regulations to address these critical hazards.

Exhibits

A – Assessing and Mitigating Risks from “Natech” Incidents

B – State and Local Inherently Safer Technology Regulations

Exhibit A

Exhibit A to Testimony of AAG Laura Mirman-Heslin –
Assessing and Mitigating Risks from “Natech” Incidents

1. Background: “Natech” Incidents Are Becoming Increasingly Prevalent Due to Climate Change and Pose a Danger to Risk Management Program Facilities and Surrounding Communities.

- Due to climate change, Risk Management Program (RMP) facilities are increasingly vulnerable to “natech incidents,” in which technological failures or accidents are caused or worsened by natural hazards.
- In a recent report, the European Commission Joint Research Centre described natech incidents as “a recurring but often overlooked feature in many natural disaster situations [with] significant and long term social, environmental, and economic impacts” and noted that “extreme weather scenario planning must assume scarce emergency response personnel and associated resources because emergency responders likely would be dealing with the many effects of the extreme weather and because the releases of hazardous chemicals could endanger the emergency responders themselves as well as the completion of their important tasks.”¹
- Some examples of “natech” incidents:
 - 2011: Fukushima nuclear disaster caused by a tsunami
 - 2012: Numerous oil spills in NY and NJ due to flooding from Hurricane Sandy
 - 2017: A significant release of highly reactive chemicals from the Arkema (Harris County, TX) facility when a power outage due to flooding from Hurricane Harvey resulted in loss of refrigeration
- Given that scientists have concluded that climate change worsened Hurricanes Harvey and Sandy and is similarly expected to result in more extreme weather and sea level rise in the coming years, RMP facilities are increasingly vulnerable to these types of events.
 - A recent report found that approximately 1/3 of RMP facilities are exposed to risks of wildfire, storm surge, flooding, or sea level rise.²
 - Similarly, according to a NYOAG analysis, more than half of New York’s RMP facilities are located in potential flood zones.
- The Organization for Economic Cooperation and Development (OECD) found in 2015 that “[f]urther effort is needed to improve understanding of

¹ E. KRAUSMAN, A. M. CRUZ AND E. SALZANO, NATECH RISK ASSESSMENT AND MANAGEMENT at 1-3 (2017), available at: https://www.academia.edu/38297193/Natech_Hazard_and_Risk_Assessment.

² Center for Progressive Reform, et al., *Preventing “Double Disasters:” How the U.S. Environmental Protection Agency Can Protect the Public from Hazardous Chemical Releases Worsened by Natural Disasters* (July 2021) at 2, available at: <https://cpr-assets.s3.amazonaws.com/documents/preventing-double-disasters-final.pdf>.

natural hazards and how they may impact chemical accident prevention, preparedness, and response. It is also important to keep in mind that recent studies predict that climate change will lead to more frequent and more intense natural disasters, often in areas where there are large chemical and petro-chemical facilities. This means a greater risk of natechs, with the potential for significant harm to human health, the environment, and the economy in the area of hazardous installations.”³

- In 2020, the U.S. Chemical Safety and Hazard Investigation Board (CSB) issued a safety alert in which it stated that it was “critical” that chemical facilities understand and plan for severe weather events and underscored the hazards associated with startups of facilities following an extreme weather event.⁴ And earlier this year, the Chair of the CSB noted following the severe cold weather that hit Texas in February 2021 that startups and shut downs of facility operations—which often occur in response to natural disasters—account for a significant percentage of accidents.⁵ Similarly, an EPA 2021 enforcement alert cited several recent accidents that occurred during the startup of facilities.⁶

2. There is Widespread Recognition Among Government Agencies and Industry on the Need to Plan for Natech Incidents.

- In recognition of the natech aspect of the 2017 Arkema accident, the CSB recommended several actions be taken to prevent future such accidents:
 - Advising EPA to revise the RMP regulations to explicitly cover catastrophic reactive hazards that have the potential to seriously impact the public, including those hazards resulting from self-reactive chemicals and combinations of chemicals and process-specific conditions.

³ ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT, ADDENDUM NUMBER 2 TO THE OECD GUIDING PRINCIPLES FOR CHEMICAL ACCIDENT PREVENTION, PREPAREDNESS AND RESPONSE (2D ED.) TO ADDRESS NATURAL HAZARDS TRIGGERING TECHNOLOGICAL ACCIDENTS (NATECHS), Jan. 9, 2015, available at: [https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=env/jm/mono\(2015\)1&doclanguage=en](https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=env/jm/mono(2015)1&doclanguage=en).

⁴ *U.S. Chemical Safety and Hazard Investigation Board Safety Alert: 2020 Hurricane Season: Guidance for Chemical Plants During Extreme Weather Events* (June 23, 2020), available at: https://www.csb.gov/assets/1/6/extreme_weather_-_final_w_links.pdf.

⁵ *Statement from CSB Chairman Katherine Lemos on the Lessons of Hurricane Harvey Following Recent Extreme Weather in Houston* (Mar. 4, 2021), available at: <https://inspectioneering.com/news/2021-03-04/9560/statement-from-csb-chairman-katherine-lemos-on-the-lessons-from-hurricane-harvey>.

⁶ *EPA Enforcement Alert: Risk of Chemical Accidents During Process Startup* (Feb. 2021), available at: <https://www.epa.gov/sites/production/files/2021-02/documents/ncistartupsafety-enforcementalert.pdf>.

- Directing Arkema and its subsidiaries that manufacture organic peroxides to analyze within 18 months whether their manufacturing facilities are at risk for extreme weather events such as hurricanes and floods and to ensure that critical safeguards, such as backup power, function as intended during extreme weather events.
- Recommending that the Center for Chemical Process Safety (CCPS), an industry organization, develop guidance to help companies across the U.S. assess risks from extreme weather events, including (1) addressing common mode failures of critical safeguards or equipment that could be caused by extreme weather events, (2) evaluating facility susceptibility to extreme weather events, and (3) involving relevant professional disciplines, including engineering disciplines, to help ensure risk assessments and process hazard analyses are as robust as possible.
 - Responding to the CSB’s recommendation, CCPS issued guidance on evaluating natech incidents in 2019.⁷
- Several state agencies and local governments have enacted laws or regulations requiring the consideration of natural hazards in facility siting and permitting.
 - California requires Program 2 and 3 facilities and refineries, as part of their RMPs, to consider natural and manmade external events and hazards, such as seismic events, fires, and tsunamis.⁸
 - New Jersey is developing regulations pursuant to an executive order that will require RMP facilities (among other facilities) to prepare climate resiliency plans that evaluate mitigation measures to prevent accidents resulting from climate change.⁹

⁷ CENTER FOR CHEMICAL PROCESS SAFETY, CCPS MONOGRAPH: ASSESSMENT OF AND PLANNING FOR NATURAL HAZARDS (2019), available at: <https://www.aiche.org/sites/default/files/html/536181/files/downloads/Assessment%20of%20and%20planning%20for%20Natural%20Hazards.pdf>.

⁸ CALARP PROGRAM SEISMIC GUIDANCE COMMITTEE, GUIDANCE FOR CALIFORNIA ACCIDENTAL RELEASE PREVENTION (CALARP) PROGRAM SEISMIC ASSESSMENTS 1-2 (Jan. 2019), available at https://sbcfire.org/Portals/58/Documents/Hazardous_Materials/Policy%20and%20procedures/2019%20CalARP%20Seismic%20Guidance%20Document.docx.pdf?ver=2020-08-25-155024-723; 19 CA ADC § 2755.2(d) (“The hazard review shall include the consideration of applicable external events, including seismic events”). The California Coastal Act of 1976, requiring a form of RMP to provide siting criteria related to vulnerable resources, is sometimes the basis for natural hazard analysis in synergy with municipal codes and disaster planning elements.

⁹ See N.J. Exec. Order No. 100 (Jan. 27, 2020), ¶ 1.c, available at: <https://nj.gov/infobank/eo/056murphy/pdf/EO-100.pdf> (directing the New Jersey Department of Environmental Protection to adopt regulations protecting against climate threats, including by “integrat[ing] climate change considerations, including sea level rise, into its regulatory and permitting programs.”)

- Other states require gathering natural hazard and disaster risk information under state law for siting facilities.¹⁰
 - New York requires consideration of threats from sea-level rise, flooding,¹¹ and severe weather to facilities in its environmental permitting requirements, including chemical bulk storage facilities.¹²
 - Connecticut requires flood and disaster analysis in permitting some kinds of hazardous waste facilities.¹³
 - Texas lawmakers have also taken steps to integrate natural hazard mitigation planning into some kinds of chemical storage permitting, having twice considered legislation that would require performance standards for above-ground chemical storage tanks tailored to particular geographic risks, including flooding, storm surges, and hurricanes.¹⁴

¹⁰ See, e.g., UTAH CODE ANN. 1953 § 79-3-202(1).

¹¹ 6 N.Y. COMP. R. & REGS. tit 6, § 502.2 (2021).

¹² Section 17-b of the recently-passed Climate Leadership and Community Protection Act (CLCPA) provides that “major permits for the regulatory programs of . . . the Environmental Conservation Law shall require applicants to demonstrate that future physical climate risk has been considered. In reviewing such information, [DEC] may require the applicant to mitigate significant risks to public infrastructure and/or services, private property not owned by the applicant, adverse impacts on disadvantaged communities, and/or natural resources in the vicinity of the project.” S. 6599 (New York 2019).

¹³ Dep’t Emergency Servs. and Pub. Prot., *2019 Connecticut Natural Hazards Mitigation Plan Update*, DEP’T ENERGY AND ENV’T PROT. 429 (Jan. 2019), <https://portal.ct.gov/-/media/DEMHS/docs/Plans-and-Publications/EHSP0023--NaturalHazardMitPlan.pdf>; see *Hazardous Waste Facility*, CT.GOV (June 2017), <https://portal.ct.gov/DEMHS/Emergency-Management/Resources-For-Officials/Hazard-Mitigation>.

¹⁴ See S.B. 1446 (Texas 2019); S.B. 126 (Texas 2021); see also Katie Watkins, *Texas Lawmakers Look To Tighten Rules For Storage Tanks In Flood-Prone Areas To Prevent Chemical Spills, Fires*, HOUSTON PUBLIC MEDIA, Feb. 2, 2021, <https://www.houstonpublicmedia.org/articles/news/energy-environment/2021/02/02/390415/texas-lawmakers-look-to-tighten-rules-for-storage-tanks-in-flood-prone-areas-to-prevent-chemical-spills-fires/>; Kiah Collier, *In Wake Of Houston-Area Chemical Fires, Texas Senate Panel Weighs Input On Stronger Storage Tank Regulations*, HOUSTON PUBLIC MEDIA, Apr. 30, 2019, <https://www.houstonpublicmedia.org/articles/news/energy-environment/2019/04/30/331334/in-wake-of-houston-area-chemical-fires-texas-senate-panel-weighs-input-on-stronger-storage-tank-regulations/> (“Several high-ranking Republicans on the committee, including its chairman, Lubbock Republican Charles Perry, expressed support for strengthening oversight. . . . We do need some legitimate standards.”).

- Some municipalities have exercised land-use and zoning authority to regulate facility siting and force consideration of natural hazards.¹⁵
- Other EPA-administered environmental laws consider potential seismic and weather disasters in facility siting and permitting.¹⁶
- Several federal laws and programs already require states to collect and report information related to natural disaster vulnerabilities, including climate-related risks, that could inform facility siting. The Emergency Planning and Community Right-to-Know Act,¹⁷ for example, requires community emergency response plans and mandates compiling natural hazard information. The Disaster Mitigation Act of 2000¹⁸ and other amendments to the Stafford Act¹⁹ require states to create voluminous natural hazard analyses and response plans in order to access FEMA’s Pre-Disaster Mitigation Program funds. Additionally, FEMA provides recommendations for facility management.²⁰
- Independent of facility siting processes, several states—Connecticut, New Hampshire, and Oregon—have state-level hazard mitigation elements in state land use planning legislation.²¹ A majority of states (32 in total) have either optional or mandatory hazard-mitigation components in state or local land-use planning legislation,²² and 14 states require natural hazard planning to be integrated into local comprehensive plans (include collecting data on or mapping disaster-prone areas).²³ Because all of these hazard analyses and planning

¹⁵ Municipal hazard-assessment provisions in hazardous facility siting are generally more limited—considering, for example, floods or seismic activity, but rarely both. *See, e.g.*, MISSION VIEJO MUN. CODE ch. 9.21; SALT LAKE CNTY. MUN. CODE. 19.75.080; PLACIENTA MUN. CODE ch. 8.38.110; BAY MUN. CODE ch. 17.347.180 (2016); NEWPORT, OR. ORDINANCE no. 2166, Newport File No. 1-CP-18 / 3-2-20 (Aug. 4, 2020); RICHMOND, VA. MUN. CODE 8.16.035(2).

¹⁶ *See* 40 C.F.R. §§ 264.18, 257.3-1, 270.14(b)(11)(iv) (requiring consideration of seismic and flooding-related risk in RCRA-regulated facility siting); E.P.A., NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) MULTI-SECTOR GENERAL PERMIT (MSGP) FOR STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY, pt. 2.1.1.8, at 17-19 (2021) (requiring consideration of extreme weather in NPDES permitting under the Clean Water Act).

¹⁷ 42 U.S.C. § 11021(a).

¹⁸ Disaster Mitigation Act of 2000, Pub. L. No. 106-390, 114 Stat. 1552 (2000).

¹⁹ 42 U.S.C.A. § 5121 et seq.

²⁰ CCPS, *supra* note 4, at 4.

²¹ Am. Plan. Ass’n, *Survey of State Land Use and Natural Hazards Laws* 7 (2017), available at https://planning-org-uploaded-media.s3.amazonaws.com/publication/download_pdf/Survey-of-State-Land-Use-and-Natural-Hazards-Planning-Laws.pdf.

²² *Id.*

²³ *See, e.g.*, OR. REV. STAT. § 197.230(c)(H), *Id.* §§ 455.447(1)(a)-(e), 455.447(4) & OR. ADMIN. R. 660-015-0000(7) (requiring natural hazard analysis (considering floods (both coastal

processes are conducted at varying levels—federal, state, and local—by uncoordinated bodies and because there is no uniform requirement to feed critical risk information into facility permitting, their significant informational potential remains untapped. This leads to states recognizing and detailing potential natural hazards in general land use plans or hazard mitigation plans (for example, under the Stafford Act) without integrating these risks into the permitting process.

- Massachusetts’ Office of Technical Assistance and Technology (OTA) provides training to businesses and municipalities on how to incorporate toxics use reduction into climate change preparedness.²⁴ OTA’s “Map of Massachusetts Toxics Users and Climate Vulnerability Factors”²⁵ uses GIS mapping tools to provide geographic information on facilities with chemicals in relation to climate change threats, environmental justice communities, and other factors relevant to planning. The map informs companies and municipalities alike of the hazards surrounding facilities, such as risk of flooding and proximity to other facilities.
- Outside the U.S., the OECD in 2015 made a number of recommendations to facilitate consideration of natech incidents in government and company planning:
 - Public authorities should develop natural hazard maps to help facilities to prepare.
 - Adequate training should be provided to those responsible for preparing and using natural hazard maps in the context of siting hazardous facilities, land-use planning, designing and operating hazardous facilities, and emergency response planning.
 - When undertaking risk assessments associated with hazardous facilities, management should take into account natech risks.

and riverine), landslides, earthquakes and related hazards, tsunamis, coastal erosion, and wildfires and recommending local governments identify and plan for other natural hazards when siting facilities storing hazardous materials); CAL. GOV’T CODE § 65302(g)(1) (explicitly contemplating risks from climate change in land use planning); Hawai’i HAW. REV. STAT. § 226-13(b)(5) (same); WASH. REV. CODE ANN. §§ 36.70.330, 36.70A.070(1), (5)(c)(iv), 365-196-445 (recommending counties and cities “give strong consideration” to including several additional elements, including “natural hazard reduction,” in their plans); UTAH CODE ANN. § 79-3-202(1); IDAHO CODE ANN. § 67-6508 (g); ARIZ. REV. STAT. ANN. § 9-461.05 (E)(8); VT. STAT. ANN., tit. 24, § 4382(a)(12)(A) (considering risks stemming from flooding); MD. CODE ANN., LAND USE §§ 3-102(a)(1)(vi) a, § 3-102(b)(iii); VA. CODE ANN. §§ 15.2-2223.2, 15.2-2223.3, 15.2-2223.2 (requiring local consideration of sea level rise and flooding in coastal areas); CONN. GEN. STAT. ANN. § 8-23(d) (same); N.C. GEN. STAT. ANN. § 113A-110 (same); and S.C. CODE ANN. § 163.3178 (same).

²⁴ See <https://www.mass.gov/chemical-safety-and-climate-change-preparedness>.

²⁵ Available at: <https://www.mass.gov/service-details/mapping-toxics-in-communities-and-assessing-climate-vulnerability>.

- Management should be aware of, and take account, of the fact that climate change may increase natural hazards. For example, climate change might affect the intensity, frequency, and geography of natural hazards.
- Management should develop appropriate measures to address natural hazards. For example, special procedures may be needed for extreme meteorological conditions such as heavy precipitation, high winds, and low or high temperatures.
- In developing and reviewing regulations and guidance concerning chemical accident prevention, preparedness, and response, public agencies should take into account risks associated with natechs.
- Existing emergency plans should be reviewed to be sure they address the possible consequences of earthquakes, floods, extreme temperatures, and other natural hazards that might trigger natechs. The planning should take into account of worst case and likely case scenarios, as well as possible impacts from climate change on natural hazards.²⁶

3. EPA should require RMP facilities in their risk management plans to evaluate and mitigate risks from natural hazards, including those caused or exacerbated by climate change.

- In light of the increasing vulnerabilities of RMP facilities to natech incidents and the resulting danger to fenceline communities from climate change, EPA should require facilities to evaluate risks from natural hazards and implement measures as necessary to mitigate those risks (e.g., have backup power supply in event of power outage caused by severe weather).
- EPA should consider requiring all RMP facilities to assess and mitigate risks from natural hazards as part of their Risk Management Plans.
- At a minimum, EPA should revise 40 C.F.R. 68.50 and 68.67 to require that natural hazards, such as severe weather, be considered and mitigated as part of process hazard analysis applicable to Program 2 and 3 facilities.
- In light of EPA's and CSB's recognition that accidents frequently occur during facility startups and shut downs (including those taken in response to natural hazards), EPA should require that facilities have in place emergency procedures that prevent or minimize pollution releases during these events.
- EPA should require improvements to fenceline monitoring and community notification (including multilingual alerts) so that residents who live near RMP facilities are better aware and informed of potential harms resulting from RMP facility accidents, including natech incidents.

²⁶ OECD, *supra* note 2, at 32-36.

Exhibit B

Exhibit B to Testimony of AAG Laura Mirman-Heslin -- State and Local Inherently Safer Technology Regulations

I. Introduction

This paper provides an overview of inherently safer technology (IST) regulations at the state and local levels. New Jersey, Massachusetts, California, Contra Costa County (CA), and the City of Richmond (CA) have all adopted various regulations to improve safety at chemical facilities by considering and implementing safer technology. In addition, Washington State is in the process of adopting its own IST regulations. Also, in April 2021, Jefferson County (KY), which has delegated authority to administer the federal RMP Program, adopted regulations requiring IST for certain industrial sectors. In improving the federal Risk Management Program (RMP), EPA should consider these laws and the safety improvements they have brought to the applicable facilities.

This paper presents New York's summary of the state and local requirements based on its review of those regulations and discussions with state officials. Those states and municipalities reserve the right to correct or update this information as necessary.

II. New Jersey's Inherently Safer Technology Program

New Jersey is a delegated state for the RMP and administers its program pursuant to its Toxic Catastrophe Prevention Act (TCPA), which was enacted in 1986. The goal of the TCPA is to protect the public from catastrophic releases of extraordinarily hazardous substances (EHS) into the environment.¹ As of 2021, there are 92 facilities subject to the TCPA Program rules.²

In 2005, the New Jersey Domestic Security Preparedness Task Force adopted the Best Practices Standards Act for chemical sector facilities. The Task Force acted under authority of the Domestic Security Preparedness Act,³ enacted in October 2001. Among other things, the Task Force was directed to provide statewide coordination and supervision of all activities related to domestic preparedness for a terrorist attack, to identify and assess potential risks to domestic security and to the public well-being, and to adopt domestic security and preparedness standards. The Task Force determined that the Best Practices Standards were needed to ensure that proper prevention and response measures were implemented by the chemical sector to address emerging domestic security threats. The Best Practices Standards required TCPA chemical facilities to conduct a one-time IST review.⁴

¹ N.J.S.A. 13:1K-19 to -31.

² Toxic Catastrophe Prevention Act (TCPA) Program, Annual TCPA Fee Schedule Report for Fiscal Year (FY) 2020, <https://www.nj.gov/dep/enforcement/tcpa/downloads/tcpa-fee-report-fy2020.pdf>.

³ N.J.S.A. App. A:9-64 to -74.

⁴ Best Practices Standards at TCPA/DPC Chemical Sector Facilities (Nov. 21, 2005), <https://www.nj.gov/dep/enforcement/security/downloads/ChemSectBPStand.pdf>; Inherently Safer Technology (IST) Implementation Summary (Jan. 15, 2010), EPA-HQ-OEM-2015-0725-0412.

Building on the Best Practices Standards, in 2008, New Jersey's Department of Environmental Protection (NJDEP) adopted regulations that require all facilities regulated under the TCPA to conduct IST reviews. The regulations required owners or operators to conduct an initial IST review for each covered process at a facility and submit a report to NJDEP by September 2008.⁵ IST reviews must then be updated on the same schedule as the process hazard analysis.⁶

An IST review must be "conducted by a team of qualified experts convened by the owner or operator, whose members shall have expertise in environmental health and safety, chemistry, design and engineering, process controls and instrumentation, maintenance, production and operations, and chemical process safety."⁷ Each review must identify IST alternatives that minimize or eliminate the potential for an EHS release. At a minimum, the review must analyze the following principles and techniques: (1) reducing the amount of EHS material that potentially may be released; (2) substituting less hazardous materials; (3) using EHSs in the least hazardous process conditions or form; and (4) designing equipment and processes to minimize the potential for equipment failure and human error.⁸ Each review must include a determination of whether each of the ISTs identified are feasible. Finally, the regulations require the owner or operator to submit a report that includes, among other things, the covered process that is the subject of the review, a list of ISTs identified, a list of ISTs selected to be implemented and a schedule for implementation, and a list of ISTs determined to be infeasible.⁹ The owner or operator must "substantiate the infeasibility determination using a qualitative and quantitative evaluation of environmental, public health and safety, legal, technological, and economic factors."¹⁰

New Jersey's regulations also contain risk reduction provisions. The owner or operator must perform a process hazard analysis with risk assessment that includes identifying all release scenarios that have an offsite impact for hazards with a specified toxicity. If the likelihood of release occurrence is greater than a certain specified amount, the owner or operator must perform an evaluation of risk reduction measures that would reduce the likelihood or consequences of an EHS release.¹¹ It must also provide "[d]ocumentation to justify the determination of why risk reduction measures are not feasible."¹²

When New Jersey adopted the IST program as part of its TCPA rules, the State found that performing an IST review would not be financially burdensome, and that the cost was further justified by the potential to identify additional risk reduction measures to protect the public and the environment. The IST program received wide support from industry, environmental groups, worker unions, and environmental justice groups. The New Jersey Petroleum Council, the State Chamber of Commerce, the Business and Industry Association, and the Chemistry Council of New

⁵ N.J.A.C. 7:31-4.12(a), available at https://www.nj.gov/dep/rules/rules/njac7_31.pdf.

⁶ N.J.A.C. 7:31-4.12(b).

⁷ N.J.A.C. 7:31-4.12(c).

⁸ N.J.A.C. 7:31-4.12(d).

⁹ N.J.A.C. 7:31-4.12(f).

¹⁰ N.J.A.C. 7:31-4.12(f)(7).

¹¹ N.J.A.C. 7:31-4.2.

¹² *Id.*

Jersey all supported the rule, recognizing that performing IST reviews is crucial to the chemical industry's sustainability and growth and inherent to the business.¹³

The experience of the State of New Jersey shows that IST regulations are effective. Although New Jersey's rules do not mandate the implementation of any IST measures identified as a result of the IST review, New Jersey's review of the 85 initial IST reports showed that 45 facilities (53 percent) chose to implement a total of 205 IST measures.¹⁴ For example, two water treatment facilities replaced chlorine with sodium hypochlorite. Chemical facilities also reported significant IST measures resulting from the IST reviews. One facility has replaced bulk storage of acetylene with onsite generation. Another facility greatly reduced its chlorine inventory with an onsite generation process. Other significant examples of IST measures at chemical facilities include redesign of a relief system, changes in equipment and vessel configuration, safer EHS storage location, addition of remotely activated valves and automatic shutdown systems with interlocks, protection of storage vessels from weather conditions, changes to truck traffic patterns, improved types and materials of construction of piping, installation of power backup systems for controls and equipment, improved computer control systems, addition of EHS leak detectors, and a closed circuit television system.¹⁵

III. Massachusetts' Toxics Use Reduction Act

Massachusetts' experience with its Toxics Use Reduction Act (TURA) confirms that analyzing safer alternatives can have verifiable benefits. TURA, which took effect in 1990, requires companies that use large quantities of certain toxic chemicals to document their good-faith efforts to consider technically feasible, safer alternatives.¹⁶ Companies subject to TURA must biennially prepare a Toxic Use Reduction (TUR) Plan, or update an existing plan. TUR Plans compare current practices with feasible alternatives to reduce toxics use and waste, considering the full costs of their current use of toxic chemicals, including production costs, compliance costs, and costs in the event of an accidental release. TUR plans must be reviewed and approved by a state-certified TUR Planner. "The plans are a powerful tool for promoting toxics use reduction: The data show that typically in each planning cycle over 70% of the companies completing a TUR Plan find at least one toxics use reduction technique they choose to implement."¹⁷ In addition, companies subject to TURA must annually track and report the amount of toxic chemicals used and generated as waste. These reports provide the public with valuable information on toxic chemical use in the Commonwealth.¹⁸

¹³ 40 N.J.R. 2254(a) (May 5, 2008).

¹⁴ NJDEP comments dated June 28, 2018, EPA-HQ-OEM-2015-0725-0973; *see also* Inherently Safer Technology (IST) Implementation Summary (Jan. 15, 2010), EPA-HQ-OEM-2015-0725-0412.

¹⁵ NJDEP, Inherently Safer Technology Implementation Summary (Jan. 15, 2010), https://www.nj.gov/dep/enforcement/tcpa/downloads/IST_SUMWEB.pdf.

¹⁶ *See* Mass Gen. Laws ch. 21I, § 11(A); 310 Mass. Code Regs. 50.46, 50.46A.

¹⁷ *Annual Report: Massachusetts Toxics Use Reduction Program, Fiscal Year 2019*, at 15 (Oct. 2020), <https://www.mass.gov/doc/fiscal-year-2019-progress-report-on-the-massachusetts-toxics-use-reduction-program/download>.

¹⁸ Data is available at: <https://www.mass.gov/lists/massdep-toxics-use-reduction-act-tura-data-results>.

In the first decade of TURA (from 1990 to 2000), taking into account a 45% increase in production, Massachusetts facilities reduced: toxic chemical use by 40%; toxic byproducts by 58%; toxics shipped in product by 47%; and on-site releases of toxics to the environment by 90%.¹⁹ Between 2007 and 2017, those facilities that reported in 2007 and were still manufacturing in Massachusetts in 2017 reduced: toxic chemical use by 41%; toxic byproducts (waste) by 3%; toxics shipped in product by 10%; and on-site releases of toxics to the environment by 51%.²⁰ Data collected from 464 facilities in 2016 indicate that over three-quarters of the facilities subject to TURA had adopted measures that reduced the use and waste of their chemicals, and more than half had eliminated reportable uses of one or more chemicals.²¹

In Massachusetts' experience, requiring companies to consider safer alternatives has generated real benefits for both the companies and the public. The full accounting of alternatives required by TURA often reveals sensible cost-saving opportunities that companies otherwise would have failed to recognize. This has led companies to implement voluntary changes that save money while reducing the risk of accidents. For instance, as documented in a 2009 assessment of the TURA program by the Massachusetts Toxics Use Reduction Institute, surveyed companies described many benefits associated with the identification and implementation of safer alternatives, including improved worker health and safety, reduced risk of accidents, financial savings, production efficiency improvements, improved product quality, and improved community relations.²² In short, safer alternatives can be smart business choices.

TURA Program implementation includes assistance and trainings from the Massachusetts Office of Technical Assistance and Technology (OTA). OTA is a non-regulatory agency that provides free, confidential, on-site technical and compliance consultations to Massachusetts companies subject to TURA. OTA consultations reduce toxics use and waste while helping companies save money and improving public and worker health.²³ As a result of OTA consultations in Fiscal Year 2019, companies eliminated more than 48,300 pounds of toxics and saved over \$57,500 in energy costs.²⁴ Forty-four percent of the facilities that worked with OTA in Fiscal Year 2019 were located in, or within one-half mile of, an environmental justice community.²⁵

¹⁹ *Annual Report, Massachusetts Toxics Use Reduction Program, Fiscal Year 2018*, at 6, <https://www.mass.gov/doc/fiscal-year-2018-progress-report-on-the-massachusetts-toxics-use-reduction-program-0/download>.

²⁰ *Annual Report: Massachusetts Toxics Use Reduction Program, Fiscal Year 2019*, at 7.

²¹ *Annual Report, Massachusetts Toxics Use Reduction Program, Fiscal Year 2018*, at 14.

²² Rachel Massesy, *Program assessment at the 20 year mark: experiences of Massachusetts companies and communities with the Toxics Use Reduction Act (TURA) program*, 19 *J. Cleaner Production* 505 (2011).

²³ *Annual Report: Massachusetts Toxics Use Reduction Program, Fiscal Year 2019*, at 12.

²⁴ *Id.*

²⁵ *Id.*

IV. EPA's Analysis of Accident Frequency at RMP Facilities in New Jersey and Massachusetts

In the 2019 RMP rule, EPA asserted that it was justified in eliminating the STAA requirement because it “conducted a detailed analysis of RMP-facility accident rates in New Jersey and Massachusetts—two states with long-established state-level regulations comparable to the Amendments rule STAA provision—and found that accident rates in these states have not improved more than accident rates at RMP facilities nationwide under the pre-Amendments rule.”²⁶

EPA's elimination of the STAA requirement based on its analysis of accident rates in New Jersey and Massachusetts is problematic for several reasons. As to the problems with EPA's analysis regarding New Jersey's program, we direct the agency to a letter sent by Catherine McCabe, Commissioner of the New Jersey Department of Environmental Protection, to EPA Administrator Andrew Wheeler on December 17, 2019 (a copy of the letter is attached to this exhibit).

We further note several deficiencies that Earthjustice raised in its petition for reconsideration of the 2019 rule.²⁷ First, EPA failed to use the most recent 2019 accident database, which includes many more accidents than the 2015 or 2017 databases EPA examined. Second, accident rates are low in New Jersey and Massachusetts, but since the states also have low numbers of facilities, even one accident makes the accident rate look a lot higher than any nationally reported numbers. Third, EPA compared national RMP facility accidents with impacts to Massachusetts RMP facility accidents both with and without impacts. If accidents without impacts are removed, Massachusetts' accident rate is lower than the national average. Fourth, while the STAA requirement was limited to three industrial sectors, EPA failed to examine the impact of New Jersey and Massachusetts' rules on those sectors.

In response to Earthjustice's petition, EPA stated: “Regarding errors in EPA's analysis, EPA agrees with petitioners that the Agency erred in comparing accident rates in New Jersey and Massachusetts with the nationwide trend without first removing the no-impact accidents from the New Jersey and Massachusetts datasets.”²⁸ It also acknowledged that “comparisons to states with relatively few facilities should be done cautiously.”²⁹ Nonetheless, EPA concluded that this information would not have materially impacted its decision to eliminate the STAA provision because even after accounting for EPA's error, Massachusetts has a comparable accident rate to

²⁶ 84 Fed. Reg. 69,852.

²⁷ Earthjustice, *Petition for Reconsideration of Final Rule Entitled “Accidental Release Preventions Requirements: Risk Management Programs Under the Clean Air Act,”* 84 Fed. Reg. 69,834 (Dec. 19, 2019), EPA-HQ-OEM-2015-0725, (Feb. 18, 2020), at 41-45, https://www.epa.gov/sites/production/files/2020-04/documents/cmt_y_petr_s_recon_petition_02-18-2020_508_version.pdf.

²⁸ EPA, Response to Earthjustice Petition for Reconsideration (Aug. 21, 2020), at 21, https://www.epa.gov/sites/production/files/2020-08/documents/earthjustice_response_081920.sommers.signed_0.pdf.

²⁹ *Id.* at 23.

other states without state STAA-analogous provisions and New Jersey's accident rate is still higher than the national average.

EPA's response to Earthjustice's arguments is flawed for several reasons. First, EPA did not establish that the Massachusetts RMP facilities where accidents occurred were also subject to TURA. TURA is not focused on reducing accidents at RMP facilities, but rather at reducing toxic chemical use at large toxic chemical facilities, only some of which are also RMP facilities.

Second, EPA states that "the rate of accidents at RMP facilities in Massachusetts is similar to the RMP facility accident rate in other states that, like Massachusetts, have few RMP facilities overall and no or relatively few RMP facilities in the chemical, paper and petroleum refining industries."³⁰ But the states that EPA compared Massachusetts to have fewer chemical, paper or petroleum facilities. Massachusetts has 15 facilities in the chemical manufacturing sector (NAICS 325), yet EPA compared it to Connecticut (5 chemical facilities), Maryland (6 chemical facilities and 1 paper facility), Arizona (8 chemical facilities) and New Hampshire (0 facilities). This is significant because, as EPA has stated, these are the types of facilities that have "a high per facility incidence of reportable accidental releases."³¹ Massachusetts has many more chemical facilities than these states, yet its accident rate is comparable.

Third, even if the implementation of IST measures did not result in a decrease in the *frequency* of releases of hazardous substances, IST could still yield benefits by reducing the *impact* of releases that do occur. Examining accident rates over a short timescale is an improper metric to evaluate the RMP, given that the program is designed to prevent *and* mitigate high-impact, low probability catastrophic chemical accidents. As EPA noted in its proposed rule to require STAA, the four major inherently safer strategies are: reducing the amount of extraordinarily hazardous substances that potentially may be released; substituting less hazardous materials; using extraordinarily hazardous substances in the least hazardous process conditions or form; and designing equipment and processes to minimize the potential for equipment failure and human error.³² Thus, IST may reduce the amount of hazardous substances released or otherwise lessen the severity of accidents, even if accident frequency remains the same.

V. California's Accidental Release Prevention Program

The California Accidental Release Prevention Program (CalARP) was implemented in 1997.³³ The purposes of CalARP are to prevent accidental releases of substances that can cause serious harm to the public and the environment, to minimize the damage if releases do occur, and to satisfy community right-to-know laws.³⁴ The program incorporates federal RMP requirements

³⁰ *Id.* at 21.

³¹ 82 Fed. Reg. 4,630.

³² 81 Fed. Reg. at 13,663.

³³ CalOES, *California Accidental Release Prevention*, <https://www.caloes.ca.gov/cal-oes-divisions/fire-rescue/hazardous-materials/california-accidental-release-prevention>. The CalARP replaced the California Risk Management and Prevention Program (RMPP).

³⁴ 19 CCR § 2735.1; *see also* CalOES, *California Accidental Release Prevention*, <https://www.caloes.ca.gov/cal-oes-divisions/fire-rescue/hazardous-materials/california-accidental-release-prevention>.

and also includes state-specific additions from Article 2, Chapter 6.95, of the California Health and Safety Code.³⁵

CalARP differs from the federal RMP regulations in the following ways:

- The list of toxic chemicals is larger under CalARP (e.g., 276 vs. 77);
- The threshold quantities of chemicals listed under both programs are lower under CalARP (e.g., the chlorine federal threshold quantity is 2500 pounds versus the CalARP threshold quantity of 100 pounds);
- CalARP requires an external events analysis be performed, including a seismic analysis;
- CalARP requires an emergency drill with response agencies be performed; and
- CalARP requires more interaction with the public and agencies, including development and submittal of a Risk Management Plan that summarizes the prevention programs beyond that contained within the covered process data sheets.³⁶ The Risk Management Plan is subject to a public review process.

CalARP is implemented and enforced by Unified Program Agencies (UPAs), which are local government agencies.³⁷ Facilities are required to work closely with the UPA for guidance to implement CalARP and create a Risk Management Plan.³⁸ The California Environmental Protection Agency (CalEPA) oversees the UPAs.³⁹

Following a serious chemical release and fire at Chevron's Richmond oil refinery in 2012, California recognized the need to improve process safety at the state's refineries.⁴⁰ With that objective in mind, Governor Jerry Brown convened a multi-agency working group to study and improve refinery process safety, in order to better protect refinery workers and nearby communities, while also protecting the state's fuel supply along with its industrial infrastructure and economy.⁴¹ The multi-year study resulted in a set of recommendations "that safety experts and

³⁵ 19 CCR § 2735.1; *see also* CalOES, *California Accidental Release Prevention (CalARP) Program Guidance* (May 2020), <https://www.caloes.ca.gov/FireRescueSite/Documents/CalARP%20Guidance.pdf>.

³⁶ *See* Contra Costa Health Services, *Risk Management Program, CalARP & ISO Differences*, <https://cchealth.org/hazmat/differences-rmp-calarp-iso.php>.

³⁷ *See* CalOES, *California Accidental Release Prevention (CalARP) Program Guidance*, at 7 (May 2020), <https://www.caloes.ca.gov/FireRescueSite/Documents/CalARP%20Guidance.pdf>; CalOES, Governor's Office of Emergency Services, *California Accidental Release Prevention*, <https://www.caloes.ca.gov/caloes-divisions/fire-rescue/hazardous-materials/california-accidental-release-prevention>.

³⁸ *See* CalOES, *California Accidental Release Prevention (CalARP) Program Guidance*, at 7 (May 2020), <https://www.caloes.ca.gov/FireRescueSite/Documents/CalARP%20Guidance.pdf>.

³⁹ NES, Inc., *California CUPA Overview: Enforcing the CalEPA Unified Program* (June 20, 2019), <https://www.nesglobal.net/california-cupa-overview-enforcing-the-calepa-unified-program/>.

⁴⁰ *See id.* (citing Cal. EPA, News Release No. 2016-72 (July 14, 2016), <https://calepa.ca.gov/2016/07/14/oilrefineries/>).

⁴¹ *See id.*

the industry itself have learned over the past two decades are essential to safe operation of a refinery.”⁴² The report recommended significant updates to CalARP and to the California Division of Occupational Safety and Health’s (referred to as Cal/OSHA) existing Process Safety Management (“Cal. PSM”) requirements, applicable to petroleum refineries.⁴³

In response to the report and with pre-regulatory input from refinery representatives, labor unions, refineries leadership, non-governmental organizations, academic experts, federal, state, and local agencies, and the public, California agencies implemented regulatory updates for refineries in October 2017. California’s new requirements are contained in CalARP Program 4 and Cal/OSHA’s PSM for Refineries regulations (CCR § 5189.1) and require several important process safety improvements at California refineries, including:⁴⁴

- Employee participation: Requiring refiners to build a team-based approach to process safety by involving frontline refinery workers “throughout all phases” of process safety decision-making with managers, and allowing frontline workers to select their representatives who participate in these decision-making processes; giving frontline operators the authority to shut-down an unsafe process based on a process safety hazard.
- Inherent safety: Requiring refiners to develop more robust corrective actions by applying the hierarchy of hazard controls “in sequence and priority order” when addressing process safety hazards. In the hierarchy, the regulation requires consideration and implementation of first- and second-order inherent safety measures “to the greatest extent feasible,” but allows consideration and implementation of passive, active or procedural safeguards with written justification. It is not permissible for refiners to reject inherent safety measures or other higher-order corrective actions “on the basis of cost alone.”⁴⁵ Owners or operators must perform a hazard control analysis for fifty-percent of existing processes within three years of the rule’s effective date (the deadline was October 1, 2020) and for the remaining processes within five years of the effective date (the deadline is October 1, 2022).⁴⁶
- Transparency and accountability: Requiring refiners to track and document all changes to process safety program elements; effectively communicate process safety issues to stakeholders; to “designate the refinery manager as the person with authority and responsibility for compliance” with the plant’s process safety program; and to publicly report major incident investigations and specific process safety indicators annually.
- Process Hazard Assessments (PHA): Requiring refiners to conduct more rigorous PHAs in identifying and evaluating process safety hazards by incorporating damage

⁴² *See id.*

⁴³ *See id.*

⁴⁴ *See* 19 CCR § 2762.13.

⁴⁵ 19 CCR § 2762.13;

<https://www.caloes.ca.gov/FireRescueSite/Documents/CalARP%20Regs%20Title%2019%20Division%2002%20Chapter%204.5.pdf>.

⁴⁶ 19 CCR § 2762.13(a).

mechanism reviews, human factors studies, hierarchy of hazard controls analysis, incident investigations history, and by performing safeguard protection analyses to ensure robustness and independence of safeguards.

- Damage mechanisms: Requiring refiners to conduct rigorous Damage Mechanism Reviews of process equipment and process conditions that includes “identification of all potential damage mechanisms,” “methods to prevent or mitigate damage,” and “a review of industry-wide experience with the process.”⁴⁷
- Safety culture: Requiring refiners to perform periodic Process Safety Culture Assessments with the involvement of frontline workers and to report the results and improvement plan of the assessments to all employees and contractor employees.
- Human factors: Requiring refiners to integrate human factors into their process safety programs, including in operating and maintenance procedures, PHAs, Management of Change, incident investigations and other decision-making processes.
- Implementation: Requiring refiners to implement corrective actions to process safety hazards on a designated timeline and to document all deviations from the timeline or from proposed corrective actions.
- Contractors: Requiring refiners to improve protections for, and involvement of, employees of contractors in process safety.
- RAGAGEP: Requiring refiners to adhere to “recognized and generally accepted good engineering practices” that are based on industry-wide safety standards, or on standards developed internally by the individual refiner that are more protective.
- Management of Organizational Change: Requiring refiners to use teams including employee participation to evaluate changes in personnel and organizational structure that exceed 90 days in duration.

The success of Cal. PSM and CalARP in implementing substantial, well-recognized measures to improve process safety demonstrates that stronger protections are not only feasible within the industry, but they have the effect of improving process safety across the refining sector by creating new types of incentives for improving process safety, including, for example:

- Best practices: The CalARP and Cal. PSM regulations reflect industry’s own best practices, as described by the Center for Chemical Process Safety, into regulation.
- A common framework: The regulations provide a common framework for refinery managers to invest in process safety and continue building their process safety management program over time. Because all California refineries are required to implement the same regulations, process safety is no longer an area to potentially cut

⁴⁷ 19 CCR § 2762.5(e)(6).

costs—and gain competitive advantage—by some refineries that might otherwise have considered doing so.

- Continuous improvement: The regulation provides a focus for learning and continuous improvement by worker PSM representatives and refinery managers, as well corporate leadership.
- Agency coordination: The regulations have improved agency coordination among Cal/OES, Cal/OSHA, county CUPAs and U.S. EPA in training, inspections and enforcement through the Interagency Refinery Task Force, which improves effectiveness.

According to economic modeling, the California programs also succeed in reducing costs for industry, as the cost avoidance due to reduced likelihood and severity of a major incident far outweighs the expense of complying with the regulations, as the RAND Corporation highlighted.⁴⁸ Based on the 10-year record in California, preventing a single major incident can save a refinery an average of \$220 million, not including the costs of lost productivity and the unquantifiable costs associated with harm to workers, first responders, community members, and governmental parties who have to provide support during and after the incident.⁴⁹

In the 2019 RMP rule, EPA acknowledged that CalARP now requires additional process safety measures at California refineries, including requirements to apply a hierarchy of hazard control analysis to assess process for safer alternatives to the greatest extent feasible.⁵⁰ EPA noted that many of the new requirements went beyond what was required by the 2017 Chemical Disaster Rule.⁵¹ EPA said that it will consider the CalARP and the companion Cal/OSHA programs moving forward and evaluate whether the accident data produced has any useful relevance to the RMP program.⁵²

The CalARP and Cal/PSM regulations have covered 14 refineries since October 2017, during which time three major refinery incidents have occurred in Southern California: one each at the Marathon refineries in Wilmington and Carson, and one at Kern Oil in Bakersfield. These incidents occurred in process units that are covered by the PSM and CalARP regulations. Cal/OSHA applied its new authorities under the 2017 refinery PSM regulations to conduct an extensive investigation of each incident, which included obtaining detailed information from each facility on their compliance with new damage mechanism review (DMR) and mechanical integrity requirements.

⁴⁸ RAND Corp., Cost-Benefit Analysis of Proposed California Oil and Gas Regulations, xiii-xvi (2016), https://www.rand.org/pubs/research_reports/RR1421.html; see also Cal. OSHA, Notice of Proposed Rulemaking at 4-5 (July 15, 2016), <https://www.dir.ca.gov/oshsb/documents/noticeSep2016-Process-Safety-Management-for-Petroleum-Refineriess.pdf>.

⁴⁹ RAND Corp, Cost-Benefit Analysis, at xiv.

⁵⁰ 84 Fed. Reg. at 69,857.

⁵¹ *Id.*

⁵² *Id.*

Where the previous PSM regulation allowed facilities to withhold all but basic inspection and testing records from Cal/OSHA, the information Cal/OSHA was able to obtain under the revised PSM regulation allowed the agency to: (1) prevent the facilities from promptly restarting the damaged process units until refinery managers could demonstrate that the hazards had been thoroughly investigated and mitigated; (2) issue both willful and serious citations to the facilities, with monetary penalties and requirements to satisfactorily abate the hazards that caused the incidents; and (3) to demonstrate to California refiners that Cal/OSHA will have a substantial role in investigating major incidents, and that all applicable elements of the PSM regulation will be applied in holding refiners responsible. This has a prevention, or deterrent, effect across the refining sector.

California's regulations enabled it to respond effectively to investigate the causes of the three incidents and take actions that protected workers and nearby communities from further harm. In this way, the 2017 regulations provide an important framework for state and federal agencies to both prevent and respond to major incidents. EPA should seek further information from California on the success of its IST requirements, since fifty-percent of existing processes had to undergo a hazard of control analysis by October 1, 2020.

VI. Contra Costa County and the City of Richmond's Industrial Safety Ordinances

In 1998, in response to incidents at chemical and oil facilities, Contra Costa County passed an Industrial Safety Ordinance ("ISO") to supplement existing federal and state safety programs.⁵³ In 2002, the City of Richmond, located within Contra Costa County in Northern California, also passed an ISO. The six facilities covered by the County's ISO are the: Phillips 66 Rodeo Refinery; Martinez Refining Company (MRC); Marathon Golden Eagle Refinery; Air Products at MRC; Air Products at Marathon Refinery; and Air Liquide - Rodeo Hydrogen Plant. The two facilities covered by Richmond's ISO are: Chevron Richmond Refinery and Chemtrade West Richmond Works.⁵⁴

The purposes of the ISO, which are identical for Contra Costa and Richmond,⁵⁵ are for facilities to implement comprehensive safety programs, instill a safety culture at the work place, and create management systems that prevent incidents that could have detrimental impacts to surrounding communities.⁵⁶ The ISO also mandates outreach and participation from industries, agencies, elected officials and the public.⁵⁷

⁵³ See Comment Submitted by Earthjustice on Behalf of Air Alliance Houston et al., at 39 (Sept. 13, 2018), <https://www.regulations.gov/comment/EPA-HQ-OEM-2015-0725-1969> (citing Contra Costa County, Cal., Ordinances ch. 450 § 8.002(a); City of Richmond, Cal., Mun. Code ch. 6.43 § 020(a)).

⁵⁴ <https://cchealth.org/hazmat/differences-rmp-calarp-iso.php>.

⁵⁵ Contra Costa Health Services, *Industrial Safety Ordinance*, <https://cchealth.org/hazmat/iso/>.

⁵⁶ Contra Costa Health Services Hazardous Materials Program, *Industrial Safety Ordinance Annual Performance Review and Evaluation Report*, at 3 (Feb. 5, 2021), <https://cchealth.org/hazmat/pdf/iso/iso-report.pdf>.

⁵⁷ *Id.*

All of the new process safety programs added under CalARP Program 4 in 2017 with the exception of DMR are essentially required under the ISO. After implementation of the Program 4 CalARP requirements, Contra Costa Health Services (CCHS), the agency that administers both the Richmond and Contra Costa County ISOs, has recognized a higher degree of employee participation within the implementation of the various prevention programs. CCHS has also observed more thorough corrective action work process tracking and documentation. Official stop work policies were developed with employee input as required since some refineries only had these as guidelines prior to the Program 4 CalARP requirements. CCHS also noted that Layers of Protection Analysis is the method of choice for conducting Safeguard Protection Analyses at all four refineries within the county.

The ISO includes the following two elements that are not required by the CalARP Program 4 or Cal/OSHA's 5189.1:⁵⁸

- A Safety Plan, which is a public document that covered facilities are required to submit to the Contra Costa Health Services Agency; and,
- Public Meetings in which Contra Costa Health Services Agency provides information on the facility Safety Plans and/or recently completed audits to members of the public.

Chemicals spills and accidents in Contra Costa County have significantly decreased over the last 20 years and CCHS has repeatedly concluded in its annual reports that the ISO has played a critical role in this reduction.⁵⁹ As designated by CCHS, a Severity Level III incident is the most serious incident and results in an at least one fatality, serious injury, or major on-site and/or offsite damage. In the 1990s, a Severity Level III accident occurred, on average, every year in Contra Costa County.⁶⁰ But once the ISO became effective in 2000 and 2003, the number of Severity Level III incidents decreased.⁶¹ In fact, from 2000–2011, no Severity Level III accidents occurred at the nine stationary sources regulated under the ISO.⁶²

When the Chevron refinery exploded in Richmond in 2012, it was the first Level III incident in the County in over 20 years. Following the Chevron incident, the Chemical Safety

⁵⁸ <https://cchealth.org/hazmat/differences-rmp-calarp-iso.php>.

⁵⁹ See Comment Submitted by Earthjustice on Behalf of Air Alliance Houston et al., at 39-42 (Sept. 13, 2018), <https://www.regulations.gov/comment/EPA-HQ-OEM-2015-0725-1969> (citing EPA-HQ-OEM-2015-0725-0888, Attachment # 139, Randall L. Sawyer, Chief Env'tl. Health and Hazardous Material Officer, Contra Costa Health Servs., Comments at 1 (Oct. 28, 2014) (“The number of serious accidents at chemical facilities and petroleum refineries has decreased significantly since the implementation of the Industrial Safety Ordinance.”)); Contra Costa Health Services Hazardous Materials Program, Industrial Safety Ordinance Annual Performance Review and Evaluation Report, at 4 (Feb. 5, 2021), <https://cchealth.org/hazmat/pdf/iso/iso-report.pdf> (“The severity of MCAR events in Contra Costa County has declined since the implementation of the ISO, with a few minor irregularities in the trend. The ISO has improved regulated facilities’ safety programs and operations.”).

⁶⁰ See *id.* at 41 (citing 2018 Contra Costa Co. Annual Report at 17).

⁶¹ See *id.* (citing 2018 Contra Costa Co. Annual Report at 4–6, 24).

⁶² See *id.* (citing 2018 Contra Costa Co. Annual Report at 18; EPA-HQ-OEM-2015-0725-0888, Attachment # 139, Randall L. Sawyer, Chief Env'tl. Health and Hazardous Material Officer, Contra Costa Health Servs., Comments at 1 (Oct. 28, 2014)).

Board (CSB) conducted an investigation concluding that the use of inherently safer technology could have prevented the explosion from occurring.⁶³ Accordingly, in 2014, in response to CSB recommendations,⁶⁴ the City of Richmond and Contra Costa County amended their ISO from requiring facilities to consider inherently safer systems (ISS) to requiring facilities to implement ISS.⁶⁵ Between 2014 and 2017, the eight sources regulated under the ISOs implemented at least 254 ISS, including 102 by the Chevron Refinery alone.⁶⁶ Since 2012, no other Level III accidents – and a total of three Level I and II incidents – have occurred in Contra Costa County.⁶⁷

In the 2019 RMP rule, EPA disagreed that the ISO provides strong evidence that IST regulations result in marked decreases in accident rates.⁶⁸ Although EPA admitted that the accident trend in Contra Costa County is downward since implementation of the ISO, EPA asserted several reasons to cautiously interpret and extrapolate the results observed under the ISO to the nationwide universe of RMP facilities.⁶⁹

First, EPA asserted that because the Contra Costa County and City of Richmond programs apply to a total of only eight facilities, no conclusions can be drawn due to its small size.⁷⁰ Although the small scale of the program may make it difficult to make quantitative judgments, that should not prevent EPA from taking a qualitative look at the program’s effectiveness.

Second, EPA asserted that because the ISO contains additional regulatory provisions beyond those required under 2017 Chemical Disaster Rule, it is not possible to disaggregate any benefits attributable to the inherently safer systems (ISS) analysis provision from the ISO’s additional requirements.⁷¹ For example, the ISO also requires submission of a safety plan, implementation of a human factors program, implementation of expanded management of change

⁶³ *See id.* (citing Chevron Final Report at 17 (“Using inherently safer design concepts to eliminate the hazard . . . will prevent future similar failures in refineries.” (emphasis added)); CSB, Interim Investigation Report: Chevron Richmond Refinery Fire at 45 (Aug. 2012), <https://www.csb.gov/chevron-refinery-fire/> (“Chevron Interim Report”) (“Chevron and other process plant’s implementation of inherently safer systems to the greatest extent feasible would provide a higher degree of protection from incidents like the one that occurred on August 6, 2012.”)).

⁶⁴ *See id.*

⁶⁵ *See id.* (citing Compare Contra Costa County, Cal., Ordinances ch. 450 § 8016(i)(3)(2014); City of Richmond, Cal., Mun. Code ch. 6.43 § 090(i)(3)(2014) (“The stationary source shall select and implement each inherently safer system identified in an ISSA report to the greatest extent feasible and as soon as administratively possible.” (emphasis added)), Costa County, Cal. Ordinance ch. 450 § 8.016(d)(3)(2013); City of Richmond, Cal., Mun. Code ch. 6.43 § 090(d)(3)(2013)), available in Chevron Interim Report at 46 (“For all covered process, the stationary source shall consider the use of inherently safer systems”); *see also* EPA-HQ-OEM-2015-0725-0860, Comment Submitted by Center for Science and Democracy (SCD) and Democracy at the Union of Concerned Scientists (May 19, 2017) (“[I]n the case of Contra Costa County, [chemical facilities] must implement safer alternatives to the maximum extent feasible and as soon as administratively possible.”)).

⁶⁶ *See id.* (citing App. D).

⁶⁷ *See id.* (citing 2018 Contra Costa Co. Annual Report at 17; App. C).

⁶⁸ 84 Fed. Reg. at 69,879.

⁶⁹ *Id.*

⁷⁰ *Id.*

⁷¹ *Id.* at 69,879-80.

provisions (to include management of organizational change), root cause analysis investigations for major chemical accidents, safety culture assessments, process safety performance indicators, safeguard protection analyses, and other requirements.⁷² As with EPA’s complete discounting of the ISO program due to its size, the fact that the program has additional requirements does not justify ignoring the likelihood that the 740 inherently safer systems incorporated at the facilities from 2006-17 played a role in contributing to the decline and severity in accidents.⁷³

Third, EPA asserted that the Contra Costa County program is unique in that it employs several full-time engineers to oversee implementation of the ISO.⁷⁴ EPA asserted that while such oversight “can prevent serious accidents,” it is “very expensive, and not feasible at facilities regulated by the RMP rule on a national basis.”⁷⁵ But while the increased staffing in the County program may be contributing to its success, it is certainly not the only factor and is less important than the ISS requirement itself, which forms the basis for the improvements.

VII. Washington’s Process Safety Management Rule

In addition to the states and localities discussed above, the State of Washington is considering adopting a refinery-specific process safety management (PSM) rule. Washington’s rules for PSM of highly hazardous chemicals currently mirror the federal Occupational Safety and Health Act (OSHA) PSM regulations.⁷⁶ The Washington Department of Labor and Industries (DLI) administers and enforces workplace safety and health rules.

In September 2015, the DLI Division of Occupational Safety and Health (DOSH) began to organize a PSM advisory committee to discuss ways to improve workplace safety and health at refineries.⁷⁷ Stakeholders have a shared goal of providing a safe and healthy work environment for employees to ensure Washington is a leader in refinery worker safety practices.⁷⁸ The efforts of the advisory committee are intended to promote safer and more productive refineries in Washington.⁷⁹

The DLI is proposing a rulemaking to amend existing sections and create several new sections in Chapter 296-67 WAC that will only apply to petrochemical refining facilities.⁸⁰ The

⁷² *Id.*

⁷³ See Comment Submitted by Earthjustice on Behalf of Air Alliance Houston et al., at 42 (Sept. 13, 2018), <https://www.regulations.gov/comment/EPA-HQ-OEM-2015-0725-1969>.

⁷⁴ *Id.* at 69,880.

⁷⁵ *Id.*

⁷⁶ WAC §§ 296-67-001 to 269-67-293.

⁷⁷ Washington State Dept. of Labor & Indus., *Process Safety Management Advisory Committee*, <https://lni.wa.gov/safety-health/grants-committees-partnerships/advisory-committees/sh-comittees-process-safety-management#drafts-and-comments>.

⁷⁸ *Id.*

⁷⁹ *Id.*

⁸⁰ Preproposal Statement of Inquiry, CR-101 (Aug. 2017), <https://lni.wa.gov/rulemaking-activity/AO17-20/1720CR101.pdf>.

DLI states that the current rules are outdated, not having been updated in over 20 years and do not reflect current industry practices.⁸¹

In January 2020, the DLI published draft rule language.⁸² DLI is in the process of building the rulemaking record, including the cost-benefit analysis.⁸³ It is also conducting a survey of economic impacts associated with the proposal.⁸⁴ The survey asks refineries to estimate the internal costs of compliance, anticipate any necessary programmatic changes, and describe current processes related to the proposed rule elements.⁸⁵

Washington is the second state to consider a refinery-specific PSM rule and draws heavily from California's rule.⁸⁶ Specifically, Washington proposes to adopt all new PSM elements implemented in California that were not required by the federal PSM or the state's non-refinery-specific PSM rules, although DLI is not proposing language identical to that in California's rule within each of these elements.⁸⁷ These elements include requiring refineries to perform damage mechanism reviews, hierarchy of hazard controls analyses, management of organizational change analyses, and process safety culture assessments.⁸⁸ As in California, Washington's proposed language would introduce several new defined terms, including definitions of "Major Change" and "Major Incident," and broaden the scope of existing terms in ways that will expand the potential applicability of the rule to those parts of refineries currently considered to be non-process areas.⁸⁹

The highlights of Washington's proposed rule, based on the January 2020 draft, include the following:

- **Goal:** for petroleum refineries to reduce the risk of process safety incidents by eliminating or minimizing process safety hazards to which employees may be exposed.
- **Process safety management program:** employers must develop, implement and maintain an effective written process safety management program, which must be reviewed and updated once every three years.

⁸¹ *Id.*

⁸² PSM Draft Proposed Language, https://lni.wa.gov/safety-health/grants-committees-partnerships/advisory-committees/_psmdocs/PSM-DraftProposedLanguageOTS-1344.6.pdf.

⁸³ Washington State Dept. of Labor & Indus., *Process Safety Management Advisory Committee*, <https://lni.wa.gov/safety-health/grants-committees-partnerships/advisory-committees/sh-comimttees-process-safety-management#drafts-and-comments>.

⁸⁴ *Id.*

⁸⁵ Survey of Economic Impact of Proposed Washington Process Safety Management Rule for Petroleum Refineries, https://lni.wa.gov/safety-health/grants-committees-partnerships/advisory-committees/_psmdocs/PSMQuestionnaire.pdf.

⁸⁶ Reed Smith, *Washington Releases Draft Refinery PSM Rule and Economic Survey* (Jan. 21, 2020), <https://www.ehslawinsights.com/2020/01/washington-releases-draft-refinery-psm-rule-and-economic-survey/>.

⁸⁷ *Id.*

⁸⁸ *Id.*

⁸⁹ *Id.*

- **Employee collaboration:** employers must develop a plan to provide for employee collaboration in all process safety management elements.
- **Process safety information:** employers must develop, implement and maintain a compilation of written process safety information before conducting any process hazard analysis, hierarchy of hazard controls analysis, safeguard protection analysis or damage mechanism review.
- **Process hazard analysis:** employers must perform and document a process hazard analysis to identify, evaluate and control hazards associated with each process. Pursuant to a corrective action program, the employer must implement the inherent safety measures and safeguards recommended.
- **Operating procedures:** employers must develop, implement and maintain effective written operating procedures.
- **Training:** employees must be trained in an overview of the process they are working on.
- **Contractors:** when selecting a contractor, employers must look at contractor's safety performance.
- **Pre-startup safety review:** employers must perform a pre-startup safety review for new processes and for some modified processes.
- **Mechanical integrity:** employers must: develop, implement and maintain effective written procedures to ensure the ongoing integrity of process equipment, train employees for process maintenance activities, and perform inspections and testing on process equipment.
- **Damage mechanism review:** employers must: complete a damage mechanism review for each existing and new process for which a damage mechanism exists and complete 50% within 3 years and remaining within 5 years of effective date. Damage mechanism is defined as the mechanical, chemical, physical, microbiological, or other mechanism that results in equipment or material degradation.
- **Hot work:** employers must issue a hot work permit prior to commencement of hot work operations within or near a covered process.
- **Management of change:** employers must develop, implement and maintain effective written management of change procedures to assess and manage changes in process chemicals, technology, procedures, process equipment and facilities.
- **Management of organizational change:** employers must develop, implement and maintain effective written procedures to manage organizational changes.

- **Incident investigation- root cause analysis:** employers must develop, implement, and maintain effective written procedures for promptly investigating and reporting any incident that results in or could reasonably have resulted in a process safety incident.
- **Emergency planning and response:** employers must: develop, implement and maintain an effective emergency response or emergency action plan for the entire plant, and include procedures for handling: large and small spills or releases; fires; explosions and any other emergency with a direct bearing on employee safety and health.
- **Compliance audits:** employers must conduct a compliance audit every three years.
- **Process safety culture assessment:** employers must develop, implement and maintain an effective process safety culture assessment program. This is defined as a combination of group values and behaviors that reflects whether there is a collective commitment by organization leadership to emphasize process safety over complete goals, in order to ensure the protection of employees.
- **Human factors:** employers must develop, implement and maintain an effective human factors program within 18 months of the regulations' effective date. This is to ensure that the design of machines, operations and work environments closely match human capabilities, limitations and needs.
- **Corrective action program:** employers must develop, implement and maintain an effective written corrective action program to prioritize and implement recommendations of process hazard analyses, safeguard protection analyses, damage mechanism reviews, hierarchy of hazard controls analyses, incident investigations and compliance audits.
- **Trade secrets:** without regard to possible trade secret status of such information, employers must make all information necessary to comply with the section available to those persons responsible for process safety information, process hazard analyses, operating procedures, incident investigation, emergency planning and response, and compliance audits.

VIII. Jefferson County's Chemical Accident Prevention Provisions

Jefferson County, Kentucky, which contains Louisville, has delegated authority to administer the federal RMP Program. The Louisville Metro area contains 19 RMP facilities, nearly half of which are chemical manufacturing facilities. Most of the RMP facilities are clustered in west Louisville, which is an environmental justice community.⁹⁰

In April 2021, Jefferson County updated its Chemical Accident Prevention Provisions. The revised regulations apply a STAA requirement to new processes in the industrial sectors numbered

⁹⁰ Louisville Air Pollution Control District, Regulation 5.15, Chemical Accident Prevention Provisions, Version 4 Fact Sheet, <https://louisvilleky.gov/air-pollution-control-district/document/20201123-515-v4-ex02-fact-sheet>.

NAICS 322 (paper manufacturing), 324 (petroleum and coal products manufacturing), and 325 (chemical manufacturing).⁹¹ The regulations state:

4.2.3.8.1 The owner or operator shall consider, in the following order of preference inherently safer technology or design, passive measures, active measures, and procedural measures. A combination of risk management measures may be used to achieve the desired risk reduction.

4.2.3.8.2 The owner or operator shall determine the practicability of the inherently safer technologies and designs considered.⁹²

The regulations define IST as:

1.1.22 Inherently safer technology or design means risk management measures that minimize the use of regulated substances, substitute less hazardous substances, moderate the use of regulated substances, or simplify covered processes in order to make accidental releases less likely, or the impacts of such releases less severe.⁹³

⁹¹ Regulation 5.15, Section 4.2.3.8, (April 21, 2021), <https://louisvilleky.gov/air-pollution-control-district/document/5-15v4>.

⁹² *Id.* at 4.2.3.8.1 and 4.2.3.8.2.

⁹³ *Id.* at 1.1.22.



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Lt. Governor

December 17, 2019

Andrew Wheeler, Administrator
United States Environmental Protection Agency
1200 Pennsylvania Ave., NW
Mail Code 5104A
Washington, DC, 20460

Re: Comments on Prepublication Copy Notice: Accidental Release Prevention Requirements: Risk Management Programs under the Clean Air Act, November 20, 2019
40 CFR Part 68
Docket No.: EPA-HQ-OEM-2015-0725

Dear Administrator Wheeler:

The New Jersey Department of Environmental Protection (NJDEP) has had the opportunity to review the U.S. Environmental Protection Agency (EPA) prepublication notice of EPA's final rule revising parts of EPA's Risk Management Program. As EPA is aware, the NJDEP has opposed this EPA regulatory rollback, which rescinds requirements related to safer technology and alternatives analyses, among other things. The purpose of this letter, however, is to address EPA's comments concerning the Inherently Safer Technology provisions of New Jersey's Toxic Catastrophe Prevention Act Program rules as it relates to EPA's justification for rescinding the Safer Technology and Alternatives Analysis (STAA) provision of EPA's RMP rules.

NJDEP takes exception to EPA's simplistic analysis and disputes the statements in the prepublication notice regarding the lack of effectiveness of the Inherently Safer Technology (IST) provisions of New Jersey's rules. EPA's justification for its rescission is based on statistical data analyzing the effectiveness of NJ's Toxic Catastrophe Prevention Act (TCPA) IST regulations. Specifically, at page 160 of the prepublication, EPA states, "EPA agrees that the NJ accident rate trend does not support the effectiveness of its IST provisions." EPA has not fairly portrayed the benefits of New Jersey's IST rule provisions.

The New Jersey experience shows that IST regulations are effective. NJDEP adopted a rule in 2008 to implement the State's TCPA. The goal of the TCPA is to protect the public from catastrophic releases of extraordinarily hazardous substances into the environment. N.J.S.A. 13:1K-19 to -31. The 2008 rule implementing the TCPA required all facilities regulated under the

law to conduct IST reviews. The rule followed the 2005 Best Practices Standards for chemical sector facilities, which were adopted by the New Jersey Domestic Security Preparedness Task Force. The Task Force acted under authority of the Domestic Security Preparedness Act, N.J.S.A. App. A:9-64 to -74, enacted in October 2001. Among other things, the Task Force was directed to provide statewide coordination and supervision of all activities related to domestic preparedness for a terrorist attack; to identify and assess potential risks to domestic security and to the public well-being, and to adopt domestic security and preparedness standards. The Best Practices Standards required TCPA chemical facilities to conduct an IST review, after the Task Force determined that additional measures were appropriate to ensure accountability and implementation of proper prevention and response measures by the chemical sector to address emerging domestic security threats.¹

When New Jersey adopted the IST program as part of its TCPA rules, the State found that performing an IST review would not be financially burdensome, and that the cost was further justified by the potential to identify additional risk reduction measures to protect the public and the environment. The IST program received wide support from industry, environmental groups, labor unions, and environmental justice advocates. The New Jersey Petroleum Council, the State Chamber of Commerce, the Business and Industry Association, and the Chemistry Council of New Jersey all supported the rule, recognizing that performing IST reviews is crucial to the chemical industry's sustainability and growth and, indeed, that such a deeper look at safety is inherent to their business. 40 N.J.R. 2254(a) (May 5, 2008). New Jersey's review of the 85 initial IST reports showed that 45 facilities (53 percent) chose to implement a total of 205 IST measures.² For example, two water treatment facilities replaced chlorine with sodium hypochlorite, eliminating the potential danger of high-pressure chlorine gas on site with liquid sodium hypochlorite.

Some critics opposed to the similar STAA provision in the EPA Accident Prevention Amendments have argued that, because the number of reportable incidents in New Jersey has not decreased in the five years after adoption of the IST rule, the IST program does not work.³ This argument is flawed for several reasons. As EPA noted in its proposed rule to require STAA, the four major inherently safer strategies are: reducing the amount of extraordinarily hazardous substances that potentially may be released; substituting less hazardous materials; using extraordinarily hazardous substances in the least hazardous process conditions or form; and designing equipment and processes to minimize the potential for equipment failure and human error. 81 Fed. Reg. at 13,663. IST is one tool to reduce the risk of a catastrophic release. Thus, even if the implementation of IST measures did not result in a decrease in the frequency of releases of hazardous substances, IST could still yield benefits by reducing the impact of releases that do occur. Also, as facilities have developed better accident investigation and release reporting systems in their risk management programs, it is reasonable to expect that more accidents would be reported due to the implementation of better investigating and reporting programs. Failures that occur in

¹ *Best Practices Standards at TCPA/DPCC Chemical Sector Facilities* (Nov. 21, 2005), available at <https://www.nj.gov/dep/enforcement/security/downloads/ChemSectBPStand.pdf>; *Inherently Safer Technology (IST) Implementation Summary* (Jan. 15, 2010), EPA-HQ-OEM-2015-0725-0412.

² NJDEP comments dated June 28, 2018, EPA-HQ-OEM-2015-0725-0973. *See also* *Inherently Safer Technology (IST) Implementation Summary* (Jan. 15, 2010), EPA-HQ-OEM-2015-0725-0412.

³ EPA-HQ-OEM-2015-0725-1481.

other risk management programs could also contribute to the occurrence of a reportable accident. Finally, with so few reportable accidents in New Jersey, it is not statistically accurate to make a judgment of the effectiveness of the facilities' IST Review studies based on the number of reportable accidents before and after the implementation of New Jersey's IST program.

Moreover, when originally promulgating the STAA requirement, EPA found that since 1996 there have been "advances in ISTs and safer alternatives are becoming more widely available and are being adopted by some companies." 81 Fed. Reg. 13,663. EPA noted that some companies consider safer alternatives as a matter of course and identified prior instances of voluntary adoption of ISTs. 82 Fed. Reg. 4,645. It concluded that "facilities will only incur additional costs beyond the analysis when the benefits of the change make adoption of the change reasonable for the facility." *Id.* at 4,644. In light of this, EPA believed "there is value in requiring facilities with extremely hazardous substances to evaluate whether they can improve risk management of current hazards through potential implementation of ISTs." *Id.* at 4,645. NJDEP agrees with these previous EPA statements. New Jersey's IST rules require that facilities update their IST study every five years in conjunction with their five-year process hazard analysis revalidation. As facility managers, engineers, and scientists turn over during time, new personnel can provide fresh ideas for risk reduction that are introduced in the IST study. Also, emerging technologies that develop can be identified if they are studied as part of the routine five-year update.

This final rule largely eviscerates the safeguards added by the EPA 2017 Accident Prevention Amendments, which represents a step backward on preventing and mitigating harms to public health and the environment from chemical accidents. A strong Risk Management Program is critical to protect our residents from the grave dangers posed by chemical accidents at facilities. New Jersey is proud of its efforts to ensure greater levels of safety for our communities and will continue to require a review of inherently safer strategies as a component of our TCPA program despite our federal partner's abandonment of this sound policy.

Respectfully submitted,



CATHERINE R. MCCABE
Commissioner
New Jersey Department of
Environmental Protection

