



October 7, 2020

Mariama Ouedraogo
Virginia Department of Environmental Quality
Tidewater Regional Office
5636 Southern Boulevard, Virginia Beach, VA 23462
mariama.ouedraogo@deq.virginia.gov

Via Electronic Mail Only

Re: Comment Letter on Proposed Draft Prevention of Significant Deterioration Permit/Stationary Source Permit to U.S. Navy - Norfolk Naval Shipyard to Construct and Operate a Combined Heat and Power Plant at the Norfolk Naval Shipyard, Portsmouth, Virginia 23709 (Registration Number 60326)

Mariama Ouedraogo:

Thank you for the opportunity to comment on the proposed draft Prevention of Significant Deterioration Permit/Stationary Source Permit to the U.S. Navy - Norfolk Naval Shipyard for construction and operation of a combined heat and power plant (CHP) at the Norfolk Naval Shipyard (NNSY), 2600-2700 Effingham Street, Portsmouth, Virginia 23709 (Registration Number 60326). This comment letter is submitted by Darya Minovi and David Flores, Center for Progressive Reform, 2021 L St NW, #101-330, Washington, DC. 20036, (202) 747 - 0698.

The draft permit for the proposed facility is deficient because it does not adequately consider and address whether accidental emissions and chemical disaster, especially incidents induced, in part, by extreme weather and flooding, pose unreasonable risks of harm to the health and safety of the public and residents of neighboring communities. We, therefore, respectfully request a hearing and further consideration of the permit by the Virginia Air Pollution Control Board (“Board”).¹ The Board and the Department of Environmental Quality (“Department”) should consider the specific probabilities of extreme weather and flooding impacts to the proposed site and the risk of harm posed by potential uncontrolled releases, spills, upsets, and other deleterious emissions to the health and safety of the public and to the quality of the environment. Any analysis of the specific risks of accidental emissions or other chemical releases should also take into account the circumstances and characteristics of workers and members of adjoining communities that make these populations particularly vulnerable to harm from exposure to these incidents. These threats to public health and safety are significant and warrant both further consideration and revision of this draft permit by the Department and the consideration of and a public hearing by the Board.

¹ Code of Virginia, Title 10.1., Chapter 13 § 10.1-1307.

I. The Board Should Consider the Threat of Harm to Public Health and Safety due to the Particular Risks of Accidental Emissions and Chemical Spills at the Proposed Facility.

The Board and the Department should consider the reasonableness and suitability of siting a new hazardous chemical facility at the NNSY given the present-day and future risk of exposure to extreme weather and flooding and the particular risk of harm that an accidental release or other chemical disaster would pose to the health and safety of workers and visitors at the NNSY and members of the communities that adjoin the NNSY. Addressing the risk of extreme weather and flood-induced accidental releases and chemical disasters is increasingly important given the observed and projected increase in the frequency and intensity of tropical storms, precipitation, and flooding, especially for facilities and communities located within climate-vulnerable coastal areas.²

The proposed location for the NNSY CHP facility is vulnerable to both present-day and future risk of flooding. Indeed, a 2019 U.S. Environmental Protection Agency report examined the probability and impact of flooding at the Wheelabrator Waste-to-Energy facility at the NNSY installation.³ The proposed location of the CHP is adjacent to the existing Wheelabrator facility and at least 1,000 feet closer to and within 1,000 feet of the Elizabeth River. According to the findings of the report, the proposed location of the CHP facility may be vulnerable to present-day risk of flooding due to Category 1 and/or 2 hurricane storm surge. A 2018 joint investigation by NBC News and InsideClimate News found that facilities at the NNSY have already experienced major flooding and flood-related damage at least nine times over a ten year period of time.⁴ The report also documents concerns about the potential for catastrophic damage at the NNSY were the region to be affected by a major hurricane.

Therefore, the Board and the Department should examine the risk that hurricanes and storm surge will strike this region over the expected lifetime of this facility in its consideration of the reasonableness and suitability of siting a hazardous chemical facility that would regularly store and combust highly flammable and explosive chemicals at this location. Additionally, the Board and the Department should examine and consider the probabilities and risks of flooding and other impacts due to projected sea level rise, including flooding impacts at the NNSY installation projected to occur during fair weather with as few as 1 to 2 feet of sea level rise, as well as wet-weather flooding, in general, due to the increasing intensity of precipitation within the region. As part of this analysis, the Board and the Department should determine whether the

² *E.g.*, U.S. Chemical Safety and Hazard Investigation Board, Investigation Report: Organic Peroxide Decomposition, Release, and Fire at Arkema Crosby Following Hurricane Harvey Flooding, May, 2018. Available at <https://www.csb.gov/csb-releases-arkema-final-report/>; also Ari Phillips, Preparing for the Next Storm: Learning from the Man-Made Environmental Disasters that Followed Hurricane Harvey, August, 2018. Available at <https://environmentalintegrity.org/wp-content/uploads/2018/08/Hurricane-Harvey-Report-8.16.18-final.pdf>.

³ Kaplan, O., B. Bierwagen, S. Julius, M. Liang, S. Thorneloe, and K. Weitz. Vulnerability of Waste Infrastructure to Climate-Induced Impacts in Coastal Communities. U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-18/011, 2019. Available at https://cfpub.epa.gov/si/si_public_record_report.cfm?Lab=NRMRL&dirEntryId=345784.

⁴ Nicholas Kusnetz, Rising seas threaten Norfolk Naval Shipyard, raising fears of 'catastrophic damage,' NBCNews.com, Nov. 19, 2018. Available at <https://www.nbcnews.com/news/us-news/rising-seas-threaten-norfolk-naval-shipyard-raising-fears-catastrophic-damage-n937396>.

proposed facility is likely to store, use, transfer, or produce hazardous chemicals and substances in quantities sufficient to trigger Clean Air Act regulatory requirements, including the Risk Management Program and General Duty Clause, that address risk by requiring planning and practices to prevent and mitigate harm from accidental chemical releases.⁵

II. The Board Should Consider the Potential Cumulative and Compounding Risks of Harm to Public Health and Safety due to the Flood Vulnerability of Hazardous Chemical Facilities in the Region and the Social Vulnerability to Disaster of Communities that Adjoin the Shipyard.

The Board and Department should consider and factor into their decision-making for this draft permit and other approvals the reasonableness of potential environmental and public health hazards arising from the risks of chemical disaster or other accidental release at the proposed facility. The Board and the Department should also consider the potential for cascading or compounding industrial or chemical disaster precipitated by the proposed facility, given the high number of flood- and extreme weather-exposed hazardous chemical facilities located at the NNSY as well within and surrounding the adjoining communities. The analysis should also include consideration of the particular social vulnerability to natural disaster and industrial pollution of members of the communities surrounding the proposed CHP facility and the NNSY.

In 2019, the Center for Progressive Reform published a study of the flood-exposure of hazardous chemical facilities in Virginia and the social vulnerability to disaster of the communities in proximity to these sites.⁶ The report presents findings from a geospatial analysis of state and Federally-regulated facilities that contain hazardous chemicals (e.g., Superfund, Risk Management Program, Tier II Reports of Extremely Hazardous Substance, etc.) and the facilities' particular risk of exposure to present-day Hurricane storm surge and waterway flooding (based upon National Oceanic and Atmospheric Administration's (NOAA) Sea, Lake, and Overland Surges from Hurricanes (SLOSH) and Federal Emergency Management Administration's (FEMA) flood hazard zone designations) and future risk of exposure to sea level rise (based upon NOAA projections). The analysis also integrates geospatial data from the Social Vulnerability Index (SVI), a product of the Centers for Disease Control and Prevention's Agency for Toxic Substances and Disease Registry (CDC) that measures potential negative effects on communities caused by external stresses on human health, including natural or human-caused disasters.⁷ SVI incorporates metrics relevant to risk of harm from chemical disasters, such as poverty, health insurance, minority status and language, transportation, age, and disability.

Our analysis identifies those hazardous chemical facilities that are most exposed to present- and future flood risks and that are located within communities that are among the most-socially vulnerable to disaster within Virginia and nationwide. Many of the facilities and communities identified within our report are concentrated in the Hampton Roads region, and, especially,

⁵ Clean Air Act Section 112(r); 40 CFR Part 68.

⁶ Noah Sachs and David Flores. Toxic Floodwaters: The Threat of Climate-Driven Chemical Disaster in the James River Watershed. Center for Progressive Reform, 2019. Available at <http://progressivereform.org/our-work/energy-environment/virginia-toxic-floodwaters/>.

⁷ Agency for Toxic Substances and Disease Registry. CDC Social Vulnerability Index. Available at <https://www.atsdr.cdc.gov/placeandhealth/svi/index.html>.

within the portions of the cities of Norfolk, Portsmouth, and Chesapeake located along the Elizabeth River. The NNSY is located within Census Tract 9801 (“NNSY Tract”), which is not assigned a SVI score by the CDC because of insufficient data.⁸

Seven different census tracts adjoin the NNSY Tract.⁹ Three of these adjoining tracts are among the top ten highest scoring tracts in our Toxic Floodwaters analysis, meaning that the tracts have high SVI scores and numerous hazardous chemical facilities exposed to a high degree of flood risks. Two tracts adjoining the NNSY Tract are the top two highest scoring tracts in our analysis, between them containing 295 hazardous chemical facilities exposed to varying degrees of flood risk. These flood-exposed facilities include at least four Superfund/National Priority List sites and 11 petroleum storage and distribution terminals, as well as two Risk Management Program facilities exposed to present-day risk of flooding from hurricane storm surge and future-risk due to sea level rise. Further, many of these facilities are located within the 100-year floodplain, meaning FEMA projects a 1% probability of eight-foot flood occurring in these areas in any given year. However, those projections are likely too conservative. As climate change alters weather patterns and causes sea level rise, floods will increase in frequency and intensity. The Hampton Roads region is already experiencing the highest rate of sea level rise on the Atlantic Seaboard.

III. The Cumulative Burden of Adverse Health Outcomes, Existing Pollution Emissions, and Worsening Climate Impacts May Unnecessarily Harm Nearby Communities

In addition to experiencing various social stressors, such as higher rates of unemployment and a larger proportion of sensitive sub-populations (such as children under five or adults over sixty-five years of age), the communities adjacent to the NNSY Tract are already exposed to fugitive pollution emissions from existing hazardous facilities, which may contribute to chronic health issues. The City of Portsmouth, the location of the proposed facility, has reported higher rates of mortality and morbidity compared to the state.¹⁰ Further, the four census tracts in the city adjoining the NNSY Tract rank significantly lower on the Virginia Department of Health’s Health Opportunity Index compared to the city overall, meaning that communities in these tracts have a lower opportunity for good health.

Additional pollution emissions from the proposed facility may exacerbate these effects. The permit states that the facility will release sulfur dioxide, particulate matter, nitrogen oxides, volatile organic compounds, carbon monoxide, and carbon dioxide. Exposure to sulfur dioxide, particulate matter, and nitrogen oxides is associated with respiratory health issues, especially

⁸ See <https://svi.cdc.gov/map.html>.

⁹ Census Tract 50, Norfolk city, Virginia with 2016 Overall SVI Score: 0.8039; Census Tract 205, Chesapeake city, Virginia, with 2016 Overall SVI Score: 0.6679; Census Tract 214.03, Chesapeake city, Virginia with 2016 Overall SVI Score: 0.8484; Census Tract 2123, Portsmouth city, Virginia with 2016 Overall SVI Score: 0.852; Census Tract 2119, Portsmouth city, Virginia with 2016 Overall SVI Score: 0.9404; Census Tract 2120, Portsmouth city, Virginia with 2016 Overall SVI Score: 0.8649; and Census Tract 2121, Portsmouth city, Virginia with 2016 Overall SVI Score: 0.9839.

¹⁰ Portsmouth Health District, Virginia Department of Health. The 2017 Portsmouth Community Health Survey (CHS) using CASPER Methodology. 2018. Available at <https://www.vdh.virginia.gov/content/uploads/sites/125/2018/11/CHS-2017-Report-FINAL.pdf>.

among children and people with asthma.¹¹ Elevated levels of carbon monoxide outdoors can harm people with cardiovascular disease by preventing oxygen from reaching the heart.¹²

Communities with high SVI scores are more vulnerable to human suffering and economic loss in the face of disaster.¹³ If the region is hit with a severe storm and/or flooding that precipitates a chemical release, families in the nearby residential areas could be exposed to toxic chemicals that yield ill health effects, such as dermatitis, rashes, headaches, fatigue, abdominal pain, fever, decreased appetite, nausea, sore throat, and eye irritation.¹⁴ Some contaminants, like heavy metals, may also adsorb to sediments and redistribute throughout an area with floodwaters.¹⁵

The cumulative impacts of existing pollution emissions, social vulnerabilities and low health opportunity, and worsening climate impacts cannot be ignored. Furthermore, the proposed facility may exacerbate environmental injustices in the region, as all seven census tracts have a higher proportion of Black and low-income residents compared to the state as a whole.¹⁶

¹¹ Environmental Protection Agency. Sulfur Dioxide Basics. Available at <https://www.epa.gov/so2-pollution/sulfur-dioxide-basics#effects>; Environmental Protection Agency. Particulate Matter (PM) Basics. Available at <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics#effects>; Environmental Protection Agency. Basic Information about NO₂. Available at <https://www.epa.gov/no2-pollution/basic-information-about-no2#Effects>.

¹² Environmental Protection Agency. Basic Information about Carbon Monoxide (CO) Outdoor Air Pollution. Available at <https://www.epa.gov/co-pollution/basic-information-about-carbon-monoxide-co-outdoor-air-pollution#Effects>.

¹³ Agency for Toxic Substances and Disease Registry. CDC Social Vulnerability Index. Available at <https://www.atsdr.cdc.gov/placeandhealth/svi/index.html>.

¹⁴ Darya Minovi. Toxic Floodwaters: Public Health Risks and Vulnerability to Chemical Spills Triggered by Extreme Weather. Center for Progressive Reform, 2020. Available at <http://progressivereform.org/our-work/energy-environment/toxic-floodwaters-health-risks/>.

¹⁵ Darya Minovi. Toxic Floodwaters: Public Health Risks and Vulnerability to Chemical Spills Triggered by Extreme Weather. Center for Progressive Reform, 2020. Available at <http://progressivereform.org/our-work/energy-environment/toxic-floodwaters-health-risks/>.

¹⁶ In seven census tracts adjoining the NSYY tract: 30-97% Black, \$23,750-\$54,595 median household income, and 11-39.5% persons below the federal poverty line. In Virginia: 19% Black, \$71,564 median household income, and 11% persons below the federal poverty line. See <https://censusreporter.org/>.

Thank you for your attention and consideration of our comment. As residents of the Commonwealth and as public interest researchers and advocates who work with communities in Portsmouth, Chesapeake and Norfolk, we are deeply concerned by the threat of harm that this proposed facility poses to the health and safety of the public, many of whom already bear a disproportionate burden from industrial pollution and the impacts of climate change. We respectfully request a hearing and further consideration of the permit by the Virginia Air Pollution Control Board.

Sincerely,

Darya Minovi, MPH, Policy Analyst

David Flores, JD, Senior Policy Analyst