American Petroleum Institute

AFPM

April 7, 2025

To:

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Submitted via email to: Zeldin.Lee@epa.gov; Beck.Nancy@epa.gov; Dekleva.Lynn@epa.gov; Reaves.Elissa@epa.gov

Re: Petition to Prohibit the Use of Hydrogen Fluoride in Domestic Oil Refining Under Sections 21 and 6(a) of the Toxic Substances Control Act

On February 11, 2025, Clean Air Council, Communities for a Better Environment, and the Natural Resources Defense Council (collectively, "Petitioners") submitted a document titled "Petition To Prohibit The Use Of Hydrogen Fluoride In Domestic Oil Refining Under Sections 21 And 6(A) Of The Toxic Substances Control Act" ("the Petition"). As discussed in our submission dated March 17, 2025, American Fuel & Petrochemical Manufacturers and American Petroleum Institute (collectively "AFPM/API") oppose the Petition, which is legally and factually flawed. Therefore, EPA must deny it. AFPM/API submit the following comments as a supplement to our prior submission in opposition to the Petition.

Please contact us if you have any questions or require additional information.

Respectfully submitted,

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Sierra Club FOIA Request:
2025-EPA-04193

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American Petroleum Institute

AFPM

Supplemental Comments of American Fuel & Petrochemical Manufacturers (AFPM) and American Petroleum Institute (API) on Petition to Prohibit the Use of Hydrogen Fluoride in Domestic Oil Refining Under Sections 21 and 6(a) of the Toxic Substances Control Act

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I. Introduction

As discussed in our March 17, 2025, comments (hereafter referred to as our "initial comments"), AFPM/API oppose the Petition as factually and legally flawed. The Petition does not provide a basis for the Environmental Protection Agency (EPA) to promulgate the requested "Section 6(a) rule prohibiting the use of HF [hydrogen fluoride/hydrofluoric acid] in domestic oil refining," which the Petition defines to include transport of HF to refineries. This supplement presents additional information that further supports the conclusion that the Petition must be denied because it fails to demonstrate that releases of the type described in the Petition are reasonably foreseen and are part of a "condition of use" or that the use of HF poses an unreasonable risk. Furthermore, the information presented herein and in our initial comments affirmatively establishes that HF alkylation does not present an unreasonable risk due to the low likelihood of a release that results in exposure and the even lower likelihood of injury from such a release.

First, it is worth reiterating that **in the nearly 80-year history of HF alkylation use at petroleum refineries, there has never been a fatality or life-threatening injury caused by HF in the communities surrounding AFPM/API member refineries.**[1] Such a history is in stark contrast to the picture painted by the Petition.

Next, to reiterate a key point that must factor into EPA's evaluation of the Petition: Numerous federal requirements that are in place to minimize risks associated with HF alkylation (discussed in AFPM/API's initial submission) work together to prevent accidental releases and establish rapid response protocols and emergency mobilization plans to reduce or eliminate injury in the rare event of a release. In addition to these existing regulatory requirements, there is also a consensus industry standard, API Recommended Practice, *Safe Operation of Hydrofluoric Acid Alkylation Units*, (API RP-751), which supplements these existing legal requirements with additional safety and management practices and provides guidance on how refiners may mitigate risks. This safety regime, combined with a robust, industry-driven

[1] https://www.afpm.org/sites/default/files/issue_resources/Alkylation_SafetyRiskMitigation.pdf

information sharing program[2], has resulted in the petrochemical manufacturing and fuel refining industry ranking among the safest U.S. manufacturing industries, according to injury and illness rates maintained by U.S. Occupational Safety and Health Administration (OSHA) and the U.S. Bureau of Labor Statistics covering all the major U.S. manufacturing sectors.[3] Nationally, there have never been any fatalities or life-threatening injuries in neighboring communities as a result of an HF-related incident at an oil refinery.[4] Accidental catastrophic HF releases from alkylation units, such as those posited by the Petitioners, are speculative, highly unlikely and cannot qualify as part of any reasonably foreseen condition of use for purposes of TSCA Section 6. Moreover, if such improbable and unpredictable releases *were* considered part of a condition of use, the low likelihood of such events together with more realistic consideration of the likelihood of injury from such a release affirmatively establish that use of HF in alkylation does not pose an unreasonable risk. Finally, but importantly, the Petitioners' speculative scenarios do not satisfy the EPA's risk evaluation criteria under 40 C.F.R. Part 702, which require credible evidence of significant risk. For these reasons, in addition to the legal defects discussed in AFPM/API's prior comments, the Petition should be denied.

II. The Petition Vastly Overstates the Likelihood of Significant HF Releases.

Contrary to the unsupported assertions in the Petition, the likelihood of a catastrophic release of the type described in the Petition is infinitesimally small. The low likelihood of such an event precludes its consideration as a condition of use under TSCA.

A. The Petition Vastly Overstates the Likelihood of a Catastrophic Release from a Refinery.

[2] Robust industry information sharing programs include an annual industry forum, several additional industry conferences, mechanisms to share lessons learned and good practices, and a regional group that engages site operations personnel all specific to safe operations of HF Alkylation process units. See also, March 17, 2025, comments submitted by AFPM/API to the U.S. EPA (Lee Zeldin, Nancy Beck, Lynn Dekleva, and Elissa Reaves) in response to Petition to Prohibit the use of Hydrogen Fluoride in Domestic Oil Refining Under Sections 21 and 6(a) of the Toxic Substances Control Act.

[3] See Bureau of Labor Statistics (BLS) data on "incidence rates of nonfatal occupational injuries and illnesses by industry," available at https://www.bls.gov/charts/injuries-and-illnesses/number-and-rate-of-nonfatal-work-injuries-by-industry-subsector.htm

[4] Attachment 1 (Alkylation Safety & Risk Mitigation in the Production of Cleaner Fuels. https://www.afpm.org/sites/default/files/issue_resources/Alkylation_SafetyRiskMitigation.pdf).

At the outset it must be emphasized that refineries account for a tiny fraction of the HF used nationally in the US.[5] Despite this small footprint in terms of HF usage, refineries are subject to some of the most comprehensive regulatory regimes to prevent releases and, in the extremely unlikely event of a release, ensure swift and effective containment and mitigation responses.

Consistent with the requirements of OSHA's process safety management (PSM) standard and EPA's Risk Management Program (RMP), refineries using HF are required to conduct multiple risk studies, facility siting studies, and audits on a periodic basis to minimize risks. These include, but are not limited to, Process Hazards Analysis (PHA), Layers of Protection Analysis (LOPA), Quantitative Risk Assessment (QRA) studies, Qualitative Risk Assessments, audits for consensus standards like API RP-751, OSHA PSM audits, internal company or corporate safety audits, job safety analyses (JSA), and OSHA Management of Change assessment. These efforts identify the probability of various release scenarios and the optimal measures to minimize the risks of releases. Each facility then implements the appropriate mitigations necessary to prevent those releases.

Under API RP-751, refineries conduct a specific risk analysis of their HF unit, and that analysis informs their determination of appropriate mitigation measures, given their location, configuration, amount of HF on site, and other factors. These risk assessments review a list of realistic scenarios that the refineries mitigate against. Importantly, while RMP and PSM provide the framework to continuously improve safety performance, prevent accidental releases, and reduce risk, API RP-751 provides the recommendations for specific ways a facility might do that —i.e. practices to manage HF safely, including the conducting of a unit-specific risk assessment to identify the appropriate mitigation methodology. After implementing measures in accordance with their risk assessment conducted as part of API RP-751, refineries are audited for compliance with API RP –751 every three years.

Because every refinery is unique, with different engineering configurations and physical footprints, different types and quantities of crude oil being processed, and petroleum products

[5] Globally, refineries use only 2% of the total amount of HF consumed. There are many other uses of HF that are not addressed in the Petition.
https://www.afpm.org/sites/default/files/issue_resources/Alkylation_SafetyRiskMitigation.pdf.

being manufactured, the specific risk mitigation measures implemented vary from refinery to refinery. However, all facilities are subject to federal OSHA PSM and EPA RMP programs and feature technical mitigation tools to help prevent releases, and ensure the earliest possible detection of, and fastest possible response to, any potential release.

API RP-751 provides refineries with a list of "menu options" for multiple layers of protection that HF alkylation operators consider to minimize risk, based on the facility's configuration. At a minimum, API RP-751 requires each site to maintain an HF chemical detection system, an HF water mitigation system, an HF leak monitoring system, and HF release detection/release isolation systems. The way these systems are deployed by a refinery is based upon the specific risks presented by the facility and the community's proximity – making a boilerplate, "cookie cutter" system unrealistic and inappropriate.

Additionally, API RP-751 requires multiple levels of mitigation technologies and emergency procedures that help keep HF contained and prevent exposure to people and the environment.[6] These measures may include the following in an appropriate combination as determined by the facility:

- Acid-detecting paint
- Multiple individual point sensors and perimeter laser monitors
- Multiple targeted, continuously monitored live camera feeds
- Integrated unit and facility alarms that cannot be overridden short of incident resolution
- Rapid acid transfer and remote isolation systems (RATS)
- Remotely activated block valves for HF isolation
- Water mitigation systems: water cannons; water walls; water curtains; equipment deluges

[6] AFPM and API RMP Presentation on HF, available at https://www.reginfo.gov/public/do/viewEO12866Meeting?viewRule=true&rin=2050-%20AH22&meetingId=225223&acronym=2050-EPA/OLEM%20AFPM%20and%20API

- Modified HF, a vapor suppression additive
- External flange and equipment barriers
- Extensive training and specialized PPE for HF unit Operators and Emergency Responders
- Double-sealed pumps
- 24-hour unit monitoring through video, operator rounds and live-unit diagnostics
- Inspection and mechanical integrity programs

Of note, API RP-751 was developed after, and as a result of, the 1987 Texas City HF release cited by Petitioners. The goal and effect of API RP-751 was to prevent such a release in the future, which the record shows have occurred. Thus, it is inappropriate for Petitioners to cite or EPA to consider this almost-40-year-old incident when evaluating the likelihood of a release in the future, now that systematic mitigation measures are in place. Similarly, following the 2019 PES incident near Philadelphia, API RP-751 was amended, and edition 5, issued in 2021, included a new, mandatory special emphasis program, requiring thickness testing of all carbon steel in HF service pipe and pipe components. As such, refineries addressed the root cause of the 2019 PES incident and, therefore, this singular occurrence should not be used to predict future incidents.

For the purpose of responding to Petitioners' erroneous allegations, certain of our member companies have provided information regarding mitigation measures already in place at their refineries to prevent a release. One company confirmed that mitigation systems in place at its refineries include dual seal pumps in acid service, water cannons, water deluge, HF detectors, hydrocarbon detectors, cameras, and RATS systems. Another member reported that its refinery HF unit mitigation systems include a water curtain, numerous remote-controlled elevated fire monitors, pump/equipment remote isolation valve, remote shutdown of pumps, pump deluge spray, HF and hydrocarbon fixed gas detectors, HF lasers on the perimeter of the unit, numerous cameras for remote surveillance of the unit, tandem seals on pumps that contain HF, acid-detecting paint on flanges and threaded piping, baffle on acid settler to limit the amount of acid that could potentially be exposed to a leak, and a RADI system (RATS). Notably, none of these stacked risk mitigation measures are factored into the RMP worst-case scenario circles relied on by the Petitioners to assert unreasonable risk, nor are these measures otherwise discussed by Petitioners. Yet, the reality is these risk mitigation measures all work together to minimize the likelihood of an HF release and, in the unlikely event that a release occurs, minimize the amount of HF released and mitigate against any potential adverse effects.

B. The Petition Vastly Overstates the Likelihood Of a Catastrophic Release From Transport.

The rarity and remarkably small scale of releases from truck transit of HF are due to existing risk mitigation measures in statutes, regulations, and industry use of best practices. The Pipeline and Hazardous Materials Safety Administration (PHMSA) within the Department of Transportation (DOT) comprehensively regulates HF in transportation. For example, as noted in our initial comments, PHMSA specifies permissible containers and truck types for HF and imposes additional transport requirements on the basis of HF being classified as both a corrosive material and a poisonous hazardous material, including more frequent inspection of specification cylinders and specification cargo tank motor vehicles, loading and unloading requirements, safety and security plans, specific marking and labeling requirements, among others.[7]

In addition, there have been significant changes over the years to truck loading/unloading practices to reduce the likelihood of HF releases during transport. For example, when feasible, emergency stop systems that shut off truck and refinery valves simultaneously in the event of a leak dramatically reduce the possibility of leaks during off-loading and have increasingly become an industry-wide practice in recent years. Additionally, many HF deliveries are coordinated as "hot shots," where the truck will not stop during transport to reduce potential incidents or exposures. Once on site at a refinery, trucks are placed within the mitigation systems of the refinery, such as the water curtain system, until the unloading procedure is complete, to ensure that the refinery's protections minimize the likelihood of a release during the transfer.

III. The Petition Vastly Overstates the Risk of Injury Associated With a Hypothetical HF Release and, in Fact, There Is No Unreasonable Risk.

[7] https://www.ecfr.gov/current/title-49/subtitle-B/chapter-I/subchapter-C

A. The Petition Overstates the Risks of HF Exposure to Humans.

The Petition overstates the risks of HF exposure to humans and misrepresents the significance of different AEGL values. First, Petitioners' argument that "HF exposure can be difficult to recognize and treat" is incorrect. HF has a sharp, penetrating odor that humans can detect at a concentration of 0.04 ppm[8], well below the 1.0 ppm AEGL (Acute Exposure Guideline Level)-1 level[9] that corresponds to temporary, reversible effects.[10] Importantly, refinery personnel who "smell" an HF leak, have been trained to leave the area to avoid being exposed to HF. In this way, contrary to Petitioners' assertions that "HF exposure can be difficult to recognize," (Petition at 8) any potential, meaningful exposure to HF would be readily detected, preventing prolonged, unknown exposure to HF, plus medical attention would be available as a precautionary measure.

Additionally, Petitioners misrepresent the significance of AEGL values and, in so doing, overstate the potential risks associated with hypothetical releases of HF from refineries. This is especially true with respect to the Petitioners' discussion of RMP worst-case scenario planning circles and the suggestion that exposures to concentrations of up to the AEGL-1 (1 ppm) within the planning circle represents an unreasonable risk. AEGL-1 corresponds to effects that "are transient and reversible upon cessation of exposure."[11] Such fleeting and inconsequential effects, by their nature, are incapable of supporting a finding of "unreasonable risk."

Petitioners also suggest that AEGLs may not be sufficiently protective because they do not account for potentially susceptible sub-populations. This is incorrect. As EPA explains, AEGLs "are designed to protect the elderly and children, and other individuals who may be susceptible."[12] Thus, the AEGLs are designed to include and be protective of susceptible sub-populations without further reductions or changes.

B. In the Unlikely Event of a Release at a Refinery, Injury to Humans and the Environment is Likely to be Minimal.

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[8] https://ehs.wisc.edu/wp-content/uploads/sites/1408/2020/08/SafeHandlingOfHydrogenFluorideAndHydrofluoricAcid.pdf
[9] https://19january2021snapshot.epa.gov/sites/static/files/2018-08/documents/compiled_aegls_update_27jul2018.pdf
[10] https://cameochemicals.noaa.gov/chemical/2013
[11] https://www.epa.gov/aegl/about-acute-exposure-guideline-levels-aegls
[12] https://www.epa.gov/aegl/about-acute-exposure-guideline-levels-aegls

Petitioners have failed to demonstrate that alkylation using HF or transportation of HF to refineries present an unreasonable risk. Instead, Petitioners attempt to conjure up unreasonable risk by coupling the presentation of toxicity data with intentionally exaggerated figures, assumptions, and projections regarding exposure, including, most importantly, the assumption that unrealistic catastrophic accidental releases will occur and will result in unrealistic exposures. Crucially, Petitioners both provide no statistical analysis of exposure levels or injury rates from their cited "incidents"[13] -- rendering their risk claims unsubstantiated -- and ignore the exceedingly low likelihood of a release as well as the robust, redundant regulatory requirements and risk mitigation measures already in place, as discussed above in Section II and in our initial comments. Moreover, the best available data indicate that if a release were to occur, it would not result in the level of exposure and type of injury hypothesized by Petitioners. The risk of an HF release from a facility is extremely low; however, the likelihood of a release impacting humans or the environment is even lower.

In the nearly 80-year history of HF alkylation use at petroleum refineries, there has never been a fatality or life-threatening injury caused by HF in the communities surrounding AFPM/API member refineries.[14] Comparing data from the National Safety Council, actual incident reports and risk assessments with statistics provided by the National Safety Council, the theoretical lifetime odds of sustaining a life-threatening injury from HF alkylation in the United States are roughly 1 in 52 million.[15] More granularly, for those living in close proximity to refinery HF units, the odds of life-threatening injury from HF are just 1 in 144,000.[16] By comparison, the lifetime odds of dying from a bee sting are nearly 2.5 times greater (1 in 59,000), and the chance of being struck by lightning, the quintessential low-probability occurrence, is also more likely to occur than someone living in close proximity to the refinery sustaining life-threatening injuries from HF (1 in 138,000).[17] Similarly, risks to on-site workers are extremely low, as reflected in the Bureau of Labor Statistics data discussed in Section I above and in our initial comments.

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[13] The industry has documented 0.0001 ppm as the off-site HF threshold (Lemont data),
[14] https://www.afpm.org/sites/default/files/issue_resources/Alkylation_SafetyRiskMitigation.pdf
[15] *Id.*
[16] *Id.*
[17] *See* Attachment 1.

To bolster their assertion that catastrophic releases are likely to occur and result in substantial injury to human health and the environment, Petitioners point to previous incidents that have occurred at refineries. In fact, many incidents cited in the Petition were very minor due to the prevention, detection, and mitigation systems working as designed and therefore none of these events came close to being the type of catastrophic release hypothesized by Petitioners, further evidence their petition is so speculative it rises to the level of misleading. Nearly all incidents were contained within the refinery and adequately mitigated. Moreover, in the very few instances when injuries occurred, most were minor and most occurred on-site at the facility. Most also occurred prior to the most recent revisions to API RP-751, and some occurred many years ago, before the development of API RP-751 or when it was a less mature program. A more detailed analysis of these past incidents is provided in Appendix A to these comments.

In addition to the attached analysis and more broadly, statistics reflecting the number of people seeking medical evaluation or first aid indicate that precautions were followed, rather than reflecting significant adverse effects from HF, since they capture individuals that merely smelled HF or another sharp, unpleasant odor and sought medical attention. Odor is a subjective criterion for seeking medical attention. As discussed above, humans can smell the displeasing odor of HF at levels that are unlikely to require medical intervention for most of the population and are associated with transient, reversible effects. Thus, is ability to smell small amounts of HF has likely led to precautionary first aid treatment for people who were not adversely impacted.

To sidestep the fact that the Petition seeks to conjure unreasonable risk from catastrophic releases that are hypothesized rather than having occurred at US refineries, Petitioners point to a 2012 HF release at a chemical plant in South Korea that manufactures HF for sale rather than a US refinery.[18] Therefore, the facility was not subject to the relevant US regulations or API RP-751 guidelines. As such, referring to an incident involving loading HF into an open rail car in South Korea is irrelevant to the likelihood of an incident at a U.S. refinery, and the incident does not contradict the fact that HF releases from a refinery are rare and largely inconsequential and

[18] https://cen.acs.org/articles/90/i42/South-Korea-Battles-Plant-Leak.html

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completely unlike the unrealistic releases and potential exposures posited in the Petition as the basis for an unreasonable risk finding.

Petitioners have similarly overstated the likely injury from an HF release. First, API RP-751 includes emergency response measures in the rare case of an HF release, including HF-specific training for emergency response teams and plans covering protocols for coordinating with local first responders, internal and external communications systems, decision criteria to issue evacuation or shelter-in-place instructions, medical responses to potential and actual HF exposure, strategies for managing potential mitigation water runoff, and mechanisms for decontaminating both the built and natural environments (e.g. equipment, buildings, soil and water). In addition to their own personnel, refineries train local emergency responders and hospitals on the hazards of HF and proper treatment of HF injuries to avoid the hypothetical injuries Petitioners allege.

API RP-751 also covers the frequency and methodology for testing all communication systems and the scope and frequency of emergency response drills. Testing of mitigation systems such as RATS, Emergency Isolation Valves, and water mitigation, also takes place with regular frequency to ensure readiness in case of an incident. This, coupled with extensive operator training and Recognized and Generally Accepted Good Engineering Practices, ensures that both the equipment and the personnel are prepared in the rare instance of a release to activate the mitigation measures and respond to an incident.

Ignoring the precautionary measures in the RMP, Petitioners, instead, misuse the RMP data by only referring to portions they allege identify the geographic areas that would be exposed to a release. These areas and resulting estimates of impacted people are misleading; the RMP worst-case scenario planning circles rely upon worst-case hypotheticals that assume refinery personnel do not act to mitigate an incident, and they have never been replicated in the real world. As such, these circles are exaggerated and intended solely for emergency response planning purposes. The Petitioners are purposefully misinterpreting or misrepresenting these worst-case scenarios as predictors of actual risk. As EPA stated when discussing RMP data, "the results you obtain from modeling your worst-case or alternative scenarios should not be considered to predict the likely results of an accidental release. The worst-case assumptions are very conservative, and, regardless of the model used, you can expect very conservative results."

Moreover, the modeling used for RMP plans "should be viewed as providing a basis for discussion among the regulated community, emergency planners and responders, and the public, rather than predictions."[19] Thus, by positioning RMP data as "predictions" for outcomes of actual releases, the Petitioners fail to heed, or mention, these EPA disclaimers, instead basing their entire exposure claims (and thus their risk hypothesis) on information the EPA considers unrealistic and invalid for establishing actual consequences for these scenarios.

These "planning circles" are not predictors of actual exposure or risk; they are designed to identify the largest possible area that could be impacted by a hypothetical worst-case scenario, without any mitigation or response. As addressed in our initial comments, EPA has baked multiple unrealistic assumptions into these hypothetical scenarios.

First, every RMP worst-case scenario for HF presumes there are zero active mitigation technologies or human responses that can or will be deployed in response to an incident.[20] This means that the scenarios exclude consideration of "automatic shutoff valves, rapid transfer systems such as emergency drainage, and water/chemical sprays," which "have the effect of reducing either the release rate or the duration of the release, or both."[21] A release without such mitigation measures will simply never be the case in the United States, because every refinery with an HF alkylation unit is equipped with multiple forms of mitigation, none of which is "single point-of-failure," or the only line of defense for a facility or community. Second, to arrive at a hypothetical worst-case scenario, facilities are required to factor in the worst plausible external conditions for an incident and to proceed as though all those conditions will exist simultaneously during an incident. Such a scenario is unlikely and physically impossible.

For example, the RMP worst-case-scenario uses both nighttime wind stability and highest-observed ambient temperature, a daytime reading. These nighttime and daytime

[19] General Guidance on Risk Management Programs for Chemical Accident Prevention (40 CFR Part 68) - CHAPTER 4: OFFSITE CONSEQUENCE ANALYSIS (April 2004) at 4-4
[20] 40 CFR 68.165(b)(14).
[21] https://www.epa.gov/sites/default/files/2013-11/documents/chap-04-final.pdf.

assumptions can never happen simultaneously in the real world, so the worst possible real-world release scenario would still never match the RMP worst-case scenario.

Third, the RMP plan shows what would happen if an incident occurred while wind was blowing steadily in all directions, an assumption that would effectively mean wind can steadily emanate from the refinery in all directions at the same time. This assumption is the basis for the neat "planning circles," rather than much smaller, and realistic, pie-shaped wedges or plumes. In reality, if a release were to occur at a facility, the majority of that circle would not be impacted, and the affected area would depend on ambient wind speed and direction, humidity, and turbulence.

RMP plans are also based on other unrealistic assumptions, such as that all of a facility's HF is immediately released at once. Specifically, the rule states that RMP plans must be based on a release of all the material in a single vessel, which has been interpreted to include the rapid acid transfer drum during an outage or immediately after a transfer, when all of the facility's HF acid is stored in this vessel. However, this is a rare condition, occurring less than 10% of the time, so the other 90% of the time, the facility's HF is split between multiple vessels, a compartmentalized vessel, or piping.

As such, an incident capable of releasing all of a refinery's HF at one time, as the RMP assumes, is improbable. Such an assumption is even more unrealistic because the rapid acid transfer drum is kept at atmospheric pressure, and a leak from an atmospheric storage tank of HF will not result in a high-pressure release of HF out of the vessel. Instead, any releases would be slow, over time, which would allow for mitigation responses.

Because all of Petitioners' calculations and assertions regarding exposure and, therefore, risk are based on the RMP worst-case-scenarios, they are, ultimately, exaggerated and unrealistic. The faults in these calculations are illustrated by the disparity between the few release incidents that have occurred and the dire, hyped predictions by Petitioners.

For example, the 2019 Philadelphia incident described by the Petitioners does not appear to have resulted in any injury from HF exposure. Relatedly, modeling by the Federal Emergency Management Agency "concluded that 'significant HF was *unlikely to have crossed the facility* *perimeter* [as a result of the incident]'" and "'HF concentrations outside the facility perimeter [as a result of the incident] were low, on the order of a few parts per billion (ppb) or below ..... These levels are considerably *below generally accepted health hazards for HF*.'" In fact, the Chemical Safety Board (CSB) "is unaware of any off-site impacts from the HF release" in Philadelphia.[22] Yet, when Petitioners calculate the area and number of people that could be impacted by a release from the nearby Trainer Refinery, they argue that the HF could travel 17 miles, exposing 1,900,000 people. This is an impossible result, as such figures are simply unrepresentative of real-world exposure, atmospheric conditions, and potential injury. Similarly, Petitioners did not provide the equivalent calculation for the Texas City facility, but the 1987 incident at that plant, nearly 40 years ago, resulted in the hospitalization of 95 people and alleged wildlife impacts for three miles, a far cry from the calculations provided in the Petition, which alleges impacts for a minimum of 6.2 miles and a minimum of 400,000 people in the area. Petition at 20. Thus, the rare instances of HF releases have been nothing like the scope and magnitude of releases predicted in RMPs and in the Petition. In the eight decades refineries have used HF alkylation in the U.S., there has simply never been an HF alkylation release at a U.S. refinery of the scope and scale described by the Petition.

Thus, Petitioners' reliance on RMP models to predict exposures is misplaced and inappropriate for TSCA purposes, in terms of whether the prediction is reasonably foreseen or likely, and, therefore, the RMP models cannot be used to support a conclusion of "unreasonable risk." As EPA has explained, the RMP analysis "does not require you to assess the likelihood, type, or severity of potential impacts on either public or environmental receptors. Identifying them as within the circle simply indicates that they could be adversely affected by the release."[23] The RMP worst-case scenario planning circles thus explicitly do not indicate a likelihood of any impact, nor the severity of any potential impact. Reliance on planning circles for a risk analysis is misguided.

[22] https://www.csb.gov/assets/1/6/pes_final_report_published_october_2022.pdf at 24.
[23] Risk Management Program Guidance for Offsite Consequence Analysis (March 2009)

C. In the Unlikely Event of a Release During Transport, Injury to Humans and the Environment is Likely to be Minimal.

HF transportation to refineries does not pose an unreasonable risk. The likelihood of such a release is incredibly small, particularly given safety mitigations and other precautions already in effect, but any injuries from such a release would likely be minimal.

As discussed in AFPM/API's initial submission, HF is transported to refineries via trucks, not rail, so only transportation via truck can be considered relevant to this Petition. Although, the Petition identifies two incidents involving trucks carrying HF, it is unclear whether these were trucks heading to refineries or destined for other industries using HF that are not subject to this Petition. The Petition also references many other, unrelated incidents since 2021 involving trucks carrying chemicals,[24] but the source for Petitioners' statement makes clear these incidents exclude HF, as there have not been any identifiable HF transportation incidents during that timeframe.[25]

Moreover, the two releases from trucks the Petitioners reference did not result in the types of impacts Petitioners assume in their hypothetical scenarios regarding mass exposure. No one in the surrounding communities was injured or even exposed to the relatively small releases of HF from those trucks, and there were no environmental injuries.

These two minimal incidents do not show potential catastrophic releases, and, in fact, show that there is not an unreasonable risk from the transportation of HF. Existing mitigation measures, imposed both because of the PHMSA regulations discussed in AFPM/API's prior submission as well as API RP-751, have resulted in very low risks from the transportation of HF.

IV. The Petition Ignores the Impact of its Proposed Ban.

Catastrophic, improbable releases such as those imagined by the Petitioners are unprecedented, not reasonably foreseen, and for these reasons cannot be considered part of any TSCA "condition of use" for HF alkylation at domestic refineries. Furthermore, the Petition fails to establish that HF alkylation presents an unreasonable risk for purposes of TSCA Section 6.

[24] Petition at 48.
[25] https://preventchemicaldisasters.org/chemical-incident-tracker/incidents/#searchform (not identifying any road incidents for the keyword "hydrofluoric").

To the contrary, the best available data affirmatively demonstrate that HF alkylation does **not** present an unreasonable risk. On these bases alone, EPA should deny the Petition.

Before EPA could pursue a ban, the agency would have to consider whether a ban is appropriate, considering factors such as "the benefits of the chemical substance or mixture for various uses," the economic consequences of the rule, including "the likely effect of the rule on the national economy," and "the costs and benefits of the" rule.[26] All of these factors weigh decisively against the Petitioners' proposed ban.[27] Alkylate, the product produced in alkylation units, is the high-octane ingredient in gasoline blends, and required in all blends of gasoline sold in California. HF alkylation accounts for almost half of all alkylation units; therefore, based on that alone, a reasonable person would conclude that a ban would result in significant adverse impacts to the nation's fuel supply and economy.

A. A Switch From HF To Alternative Technologies Would Not Reduce Risks to Public Health or the Environment.

A ban on HF would not reduce risks to public health or the environment. Sulfuric acid is the only proven, scalable HF alternative currently available. However, as discussed in more detail below, sulfuric acid alkylation could present its own environmental and personnel risks. Petitioners ignore that each alkylation technology presents a different set of risks, and the Petition fails to analyze the severity of those risks.

There are three hypothetical alternative alkylation technologies, but "only one has undergone sufficient commercial testing and broad scale adoption."[28] The alternatives to HF alkylation are sulfuric acid alkylation (which accounts for about 50% of US alkylate production), ionic liquids alkylation technology, and solid catalyst alkylation technology. Ionic liquids alkylation technology is undergoing commercial testing on a small scale at one US refinery and is used in less than 10 units worldwide, mostly in China.[29] Solid catalyst alkylation technology

[26] 15 USC 2605(c)(2)(A), including clause (iii) and subclauses (iv)(I) and (iv)(II), thereof.
[27] Additionally, as discussed in AFPM/API's prior comments, EPA would need to undertake the full risk evaluation and risk mitigation process; the agency could not simply skip such steps in response to the Petition.
[28] Critical Considerations and Factors for US Refiners to Address as Part of an HF Alkylation Technology Conversion, Becht, available at https://www.reginfo.gov/public/do/viewEO12866Meeting?viewRule=true&rin=2050-%20AH22&meetingId=225223&acronym=2050-EPA/OLEM%20AFPM%20and%20API
[29] Id.

is undergoing commercial testing in just two units outside the US and has not been tested or adopted by any US refinery.[30]

Despite the claims about alternatives to HF, only sulfuric acid alkylation technology has been commercially proven and adopted to any significant degree. Based on the short history and limited use of ionic liquids and solid catalyst alkylation technologies, "[t]here simply isn't enough commercial history or completed testing at this point to recommend" them "for broader adoption."

Additionally, the large footprint required for ionic liquids alkylation technology and sulfuric acid alkylation technology would make it impossible for many HF units to convert at their present sites, so replacement with ionic liquids alkylation technology or sulfuric acid technology is particularly unlikely for refineries with limited space.

There are also technical reasons that inform the choice of alkylation catalysts.

1) Square footage and feedstock volume. Sulfuric units require more energy and space than HF units. Sulfuric alkylation requires more acid catalyst, which means there must be additional feedstock deliveries and a larger overall reactor. Additionally, sulfuric acid units require a refrigeration system and access to acid regeneration units either onsite or nearby. These are not considerations for facilities with HF units. In most cases, a sulfuric acid alkylation unit will have much larger plot space requirements than an HF alkylation unit.

2) Location and waste reduction. Alkylation technology is often a reflection of other feedstocks produced onsite. That means other refinery processes and proximity to petrochemical plants factor into the decision around alkylation catalysts.

   Refineries do not waste products, and complex refineries with fluid catalytic cracking units (FCC units) need to have a system in place to utilize propylene and butylene byproducts.

[30] *Id.*

Refineries that are close to chemical facilities may have the option of selling their propylene and butylene as feedstocks to manufacture plastics. For refineries without this option, HF alkylation technology provides an answer where sulfuric acid technology does not. HF units can co-process both propylene and butylene to make alkylate.

Such a switch also comes with its own risks. "Sulfuric acid alkylation uses approximately 200 times more acid than HF alkylation and requires storage tanks for both fresh and spent acid."[31] "The shuttering of HF alkylation technology and replacement with sulfuric acid alkylation simply shifts the risk profile, by introducing new risks at refineries and other points along the supply chain."[32]

In summary, banning HF and replacing alkylation with an alternative catalyst technology would not guarantee any benefit to public health or the environment while causing major disruptions to gasoline supply across America.

B. A Ban on HF Would Have Far-Reaching, Adverse Impacts.

The proposed ban on the use of HF in refineries would have significant adverse impacts that EPA would be required to consider before adopting such a proposal. A ban on HF would impose exorbitant costs on refineries that currently use HF, likely resulting in some closures based on each refinery's individual business decisions. This, in turn could result in significant upward pressure on the costs of producing gasoline for American consumers, which could lead to potential shortages of gasoline, and increased reliance on imports.

Such a result is imprudent given that the President has declared that we face a national energy emergency because the "refining, and [energy] generation capacity of the United States [is already] far too inadequate to meet our Nation's needs," resulting in an "active threat to the American people from high energy prices" as well as an energy security concern from our

[31] Critical Considerations and Factors for US Refiners to Address as Part of an HF Alkylation Technology Conversion, Becht, available at https://www.reginfo.gov/public/do/viewEO12866Meeting?viewRule=true&rin=2050-%20AH22&meetingId=225223&acronym=2050-EPA/OLEM%20AFPM%20and%20API

[32] *Id.*

Nation's diminished capacity to insulate itself from hostile foreign actors."[33] An HF ban risks closing American refineries, reducing domestic refining capacity, which can impact our national energy security, and potentially adversely impact gasoline production costs at a time when America cannot afford such impacts.

An alkylation unit uses the light olefins (propylene and butylene) as well as isobutane produced by the fluid catalytic cracking ("FCC") unit of the refinery to make a high-octane gasoline blending component called alkylate. If EPA were to agree with the Petitioners and ban HF as an alkylation catalyst, refineries would be left with three options:

(1) Construct a new alkylation unit utilizing an alternate technology to process the light olefins and isobutane from the FCC;
(2) shut down the alkylation and FCC units and sell the feedstocks that are routinely processed in the Alkylation unit; or
(3) shut down the entire refinery.

Options 2 and 3 would have dramatic impacts on the supply of gasoline in the United States. As to Option 2, shutting down the alkylation unit would result in less gasoline production and less capacity to make certain high value blends of gasoline (e.g., high-octane gasoline blends).[34]

"For refineries with both alkylation and FCC units, the total of FCC gasoline plus alkylate makes up approximately 60 vol% of the gasoline pool."[35] Additionally, it is unlikely that the FCC unit feed could simply be sold to another US refiner that uses an alternative technology for alkylation. Only certain parts of the US (primarily those with heavy petrochemical industry presence) have a market for FCC feed, and the local open market would likely only be able to absorb a portion of that excess feed generated by refineries without alkylation units, making this

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[33] Declaring a National Energy Emergency – The White House
[34] Critical Considerations and Factors for US Refiners to Address as Part of an HF Alkylation Technology Conversion, Becht, available at https://www.reginfo.gov/public/do/viewEO12866Meeting?viewRule=true&rin=2050-%20AI122&meetingId=225223&acronym=2050-EPA/OLEM%20AFPM%20and%20API
[35] *Id.*

option marginal at best. As a result, shutting down both the FCC and HF alkylation units would reduce the US gasoline pool.[36]

Option #3 is even worse. Refinery shutdowns would drive the biggest reduction to total US gasoline supplies, at a time when there is little available capacity for other refiners to make up for any potential lost capacity from shutdowns.[37]

Importantly, this would increase U.S. reliance on importing fuels, sold to the highest bidder in global markets, raising the costs of producing gasoline for consumers, and severely restricting the average American's mobility.

Unfortunately, a unilateral ban on HF use in refineries would likely cause many refineries to resort to Option 2 or Option 3, because Option 1, switching to an alternative alkylation technology presents financial risks for refiners due to escalating costs, unpredictable returns on investment, and excessively prolonged permit, design, and build processes. Given the technology differences between HF and sulfuric acid alkylation units, replacing one catalyst with the other would require the complete removal of the existing HF alkylation unit and the construction of a completely new sulfuric acid alkylation unit.

Experts have estimated that replacing an HF alkylation unit with sulfuric acid technology would cost between $200 million to $850 million per facility, depending on unit throughput and location, which totals $15 billion to $41 billion nationwide.[38] The refineries would also have to pay "to decontaminate, deconstruct and decommission existing HF units" and "manage spent sulfuric acid."[39] Many refineries could not or would not undertake such large expenses. As shown below, replacing HF alkylation units with sulfuric acid alkylation units at a refinery would cost between 30 and 110% of each refinery's value. The higher the percentage, the greater the likelihood of a refinery making the individual business decision to shut down if HF is banned.[40]

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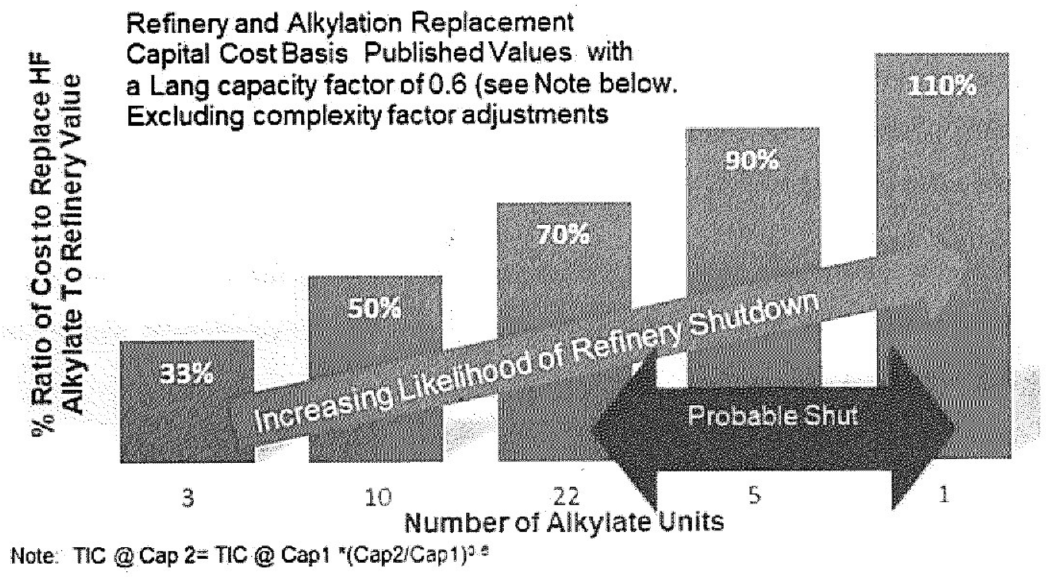
[36] *Id.*
[37] *Id.*
[38] *Id.*
[39] *Id.*
[40] *Id.*

Figure 1: Cost to Adopt Sulfuric Acid Alkylation Compared to Refinery Value



As this study shows, the cost of replacing an HF alkylation unit with a sulfuric acid alkylation unit would, in many cases, come close to the entirety of a refinery's value. Thus, multiple refineries would likely make individual business decisions to close as a result of the proposed ban. According to Becht, "It is estimated that four to nine refineries would shut down rather than either build a new alkylation unit or attempt to operate with both their HF alkylation and FCC units shut down."[41] Such shutdowns would increase US reliance on imported fuels and gasoline blending components and would put significant upward pressure on the cost of producing gasoline.

The facts show the Petition does not justify the proposed ban on HF use. The alleged risks to which Petitioners point are based on highly improbable scenarios, distorted facts, and assumptions that fail to constitute an "unreasonable risk." Regardless, to justify whether a ban under TSCA section 6(a) is the appropriate risk management action, EPA would need to first thoroughly evaluate available mitigation options and the impacts of banning HF. Because the proposed ban would not meaningfully reduce risks and fails to analyze the risks of alternative technologies, it would not be justified.

[41] *Id.*

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V. Conclusion

For all the reasons set forth above the EPA must deny this Petition to uphold TSCA's science-based risk evaluation standard and prevent catastrophic economic disruption unsupported by high quality, relevant evidence.

Pursuant to numerous federal regulations as well as API RP-751, refineries and trucks carrying HF to refineries already work to protect against HF releases. The numerous measures that are already in place make releases highly unlikely, such that they cannot be considered part of a condition of use. The Petition's attempt to characterize releases as likely is based on mischaracterizations of and willful disregard for the facts.

Even the far-fetched release events alleged by the Petition would be unlikely to result in the type of injuries Petitioners allege. There simply is no unreasonable risk from HF alkylation in refineries. EPA may only issue a TSCA regulation if the unreasonable risk of injury is present, which is not the case here. Finally, a ban on the use of HF in refineries would come with significant potential societal and economic risks and without any human health or environmental benefit, so it would not be justified. Accordingly, AFPM/API request that EPA deny the Petition.

APPENDIX A

Detailed Analysis of Past Incidents

Petitioners cite to 79 "documented HF leaks" where HF was allegedly released from a refinery, to support their assertion that HF alkylation presents an unreasonable risk. However, Petitioners overstate the severity and significance of these incidents.[42] In fact, none of the incidents cited in the Petition come close to being the type of catastrophic release alleged by Petitioners. Nearly all incidents were contained within the refinery and adequately mitigated. Moreover, in the very few instances when injuries occurred, most were minor.

For example, Petitioners cite to a release of 100 pounds of HF at the Ferndale Refinery in Ferndale, Washington, in 2023. This "release" was contained to the refinery and adequately mitigated, with no injuries reported and no threat to the public identified. Similarly, at the Mandan Refinery in North Dakota, in 2022, 3 pounds of HF were released within the refinery, which was successfully evacuated. Contrary to the catastrophic effects portrayed in the Petition, the release at the Mandan facility was stopped quickly, and no threat to the public was reported.[43] Petitioners also cite to a 2021 release at the Galveston Bay Refinery in Texas City, Texas, resulting from a pipe failure. This release, like most others, was contained to the unit. In addition, subsequent testing of wastewater in the vicinity showed no detectable levels of acid, and air monitoring confirmed there was no exposure to the surrounding community.[44] Similarly, at the Torrance refinery in 2019, an employee was exposed to modified hydrofluoric acid while replacing a pressurized pipe. Sensor alarms went off and emergency services quickly responded to the incident. The incident was contained to the refinery and caused no threat to the public. The exposed employee was treated for non-life-threatening injuries.[45]

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[42] *See* Petr's Appx. B at 3-6.

[43] *See* "Hydrofluoric acid release at Mandan Refinery quickly contained, officials say no threat to public," KFYR TV, April 4, 2022: https://www.kfyrtv.com/2022/04/04/hydrofluoric-acid-release-mandan-refinery-quickly-contained-officials-say-no-threat-public/.

[44] *See* "Hydrogen fluoride leak at Marathon's Galveston Bay refinery came from piping -CSB," Reuters, May 5, 2021: https://www.reuters.com/business/energy/hydrogen-fluoride-leak-marathons-galveston-bay-refinery-came-piping-csb-2021-05-05/.

[45] *See* OSHA, "Inspection: 1375314.015 - Schultz Industrial Services, Inc:" https://www.osha.gov/ords/imis/establishment.inspection_detail?id=1375314.015. Another leak at the Torrance facility in 2018 was so small that the fire department did not see cause to report it. *See* "AQMD reviewing new toxic chemical leak at Torrance Refinery," LAist, Dec. 27, 2018: https://laist.com/news/kpcc-archive/aqmd-reviewing-new-toxic-chemical-leak-at-torrance.

The misleading nature of the Petitioners' narrative is also illustrated by multiple releases cited by Petitioners at the Wilmington refinery. For example, a 2018 leak did not leave the facility, and injuries cited by petitioners were unrelated to HF exposure. A 2017 leak from an alkylation unit that uses HF was also contained to the refinery and did not involve a release of HF to the public.[46] A similar incident at the Navajo refinery in Artesia, New Mexico, involved a "small amount and low concentration" of HF. All cited incidents, including this one, were reported to the appropriate local, state, and federal authorities in compliance with applicable law. Some of the "incidents" cited by the Petitioners did not even involve reportable releases but merely indicate that "sensors detected leaking," which merely indicates that sensor alarm systems were working properly. In the 2017 and 2018 Wilmington incidents, for example, sensors were set at 5 ppm and workers were able to immediately stop the leaks when sensors went off. A release of 5 ppm, as detected on the unit, does not constitute a risk to the community, and sensors set at that low level of detection are an additional layer of protection that helps to minimize the possibility of off-site impacts.

Importantly, when incidents have occurred, they have been analyzed to identify root causes and, when appropriate, those lessons learned are shared and may be incorporated into revisions to the consensus standards in APR RP-751. There are examples of this starting with the 1987 Marathon Texas City incident that initiated the development of API RP 751 and more recently the 2019 Philadelphia Energy Solutions incident where API RP 751 adopted the practice of 100% component checks on welded piping.

Petitioners also allege that "[m]itigation systems ... failed during the 2009 Corpus Christi release"[47] and argue that "the mitigation spray system ran out of water."[48] In fact, the mitigation spray system did not fail, and the refinery utilized water from the nearby ship channel to maintain the on-site backup supply of water.[49] Moreover, this event occurred before the refinery

[46] By contrast, a 2013 incident at the Wilmington Refinery did cause minor injuries, where one employee received first aid for skin contact with MHF when a drip contacted his neck from activity above. Clinic personnel determined that there was no serious impact on the affected area and the employee was released back to work with no restrictions. In a similarly minor incident at the same facility in 2014, a worker was exposed to HF vapor from a small leak in a case drain. There, the employee received a nebulizer with calcium gluconate which was ruled to be "treatment beyond first aid," and thus reportable. The employee was released back to work with no restrictions.

[47] Pet. at 54.

[48] *See* Petr's Appx. B at 4.

[49] https://www.csb.gov/csb-deploys-to-investigate-release-of-hydrofluoric-acid-at-citgo-refinery-in-corpus-christi-texas/#:~:text=On%20July%2019%2C%202009%2C%20hydrocarbons,for%20possible%20hydrogen%2

installed the deinventory system, so it is more accurate to say that, in 2009, some mitigation systems had not yet been installed, not that they failed.

In addition to citing incidents involving a "release" of HF, petitioners list a number of "major fires and explosions that have taken place at HF-using refineries since 1987."[50] It is a stretch to assume that a fire at any location in a refinery is likely to result in or be the result of a release of HF, because only three of the cited fires occurred anywhere near HF.[51] Unrelated incidents such as a fire breaking out "a few weeks after Hurricane Harvey, leading to a shelter-in-place order for nearby residents," bear no weight on whether HF alkylation presents an "unreasonable risk" when the adverse impacts of those incidents are unrelated to an HF alkylation unit.[52] Examples cited at the Wilmington Refinery in 1995, Memphis Refinery in 2011, 2012, and 2023, and Port Arthur and Three Rivers refineries in 2017, among others, were fires unrelated to the HF alkylation unit at the refinery. Additionally, AFPM/API have confirmed that, despite Petitioners identifying multiple incidents at both the Pasadena and Ponca refineries, none of them were specific to HF. Additionally, incident 86, which Petitioners allege took place at the Lemont Refinery, in fact occurred at the Seneca Petroleum plant, which does not even handle HF.[53]

Two incidents where HF *was* involved—2001 and 2015 fires at the Three Rivers refinery—were effectively managed. The 2001 fire was caused by over-pumping a temporary leak repair in the trace acid service, and it was mitigated by both water and rapid acid transfer systems. The 2015 fire in the HF alkylation unit did not result in any release of HF. Finally, some of the incidents cited by the Petitioners are so vague as to simply list "fire" or "explosion."[54]

None of the incidents cited in the Petition even come close to the catastrophic scenarios Petitioners outline in their hypotheticals. This is due to extensive regulation and effective mitigation measures implemented across the industry, as outlined elsewhere in our comments.[55]

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[50] *See* Petr's Appx. B at 6-11.

[51] *See id.* at #6, 48, 70.

[52] *See id.* at #65.

[53] Lemont refinery explosion, fire: Andrew HS mourning wrestling coach Dru Worker, killed while working at Seneca Petroleum plant - ABC7 Chicago

[54] *See id.* at #5, 49-55, 67, 83, 85, 96.

[55] *See* Part 1, at 3.

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Petitioners' attempts to use these incidents to support an assertion of "unreasonable risk" from HF exposure to the public is misleading. Quantitative risk assessment data from the Lemont Refinery in Chicago serves as a representative example of the extremely low probability of any life-threatening offsite impacts due to HF. Lemont has many unit mitigation systems including a water curtain, remote controlled elevated fire monitors, remote shutdown of pumps, and tandem seals on pumps that contain HF, fixed gas detection systems, and a RADI (RATS) system. With mitigation measures like these in place at every refinery that uses HF, the risk to the public remains low – as evidenced by the fact that in the 80-year history of HF alkylation, there have been no reported instances of off-site fatalities from HF releases.

Importantly, Petitioners fail to address subsequent advancements in technology and safety standards that have ensured the safety of HF use. Regardless of advancements in technology since incidents over twenty years ago, though, Petitioners still mischaracterize the severity of these older HF-related incidents. For example, a 1989 incident at the Joliet Refinery in Channahon, Illinois, injured one employee who was quickly reported to be in "fair condition."[56] All other employees were able to clear the area before the HF release, thanks to adequate alert systems that were already in place 36 years ago. Another cited incident at the Memphis Refinery in 2006 was contained to the facility and reported as causing no environmental threat to the community.[57] Workers on site during this incident smelled HF and transported themselves to the hospital, but did not have any serious injuries. Note that more recent updates to API RP-751 have been made since the 2019 PES incident. The 2021 API RP-751 edition 5 included a new, required special emphasis program, where all carbon steel in HF service pipe and pipe components had to be tested for thickness. This was an enormous effort to address the root cause of the 2019 PES pipe failure incident and to prevent a repeat occurrence. No similar incident has occurred at the Trainer facility.

Petitioners further argue that because some refineries that utilize HF are old, they are inherently more dangerous. The dates Petitioners cite are the original construction dates of each refinery. These dates are misleading in that they do not reflect the age of the equipment in the HF unit, nor do they account for the numerous equipment and structural changes in the intervening

[56] *See* "CHEMICAL-PLANT BLAST INJURES WOMAN," Chicago Tribune, May 24, 1989: https://www.chicagotribune.com/1989/05/24/chemical-plant-blast-injures-woman/.

[57] *See* "Refinery employees recover from chemical leak," Action News 5, Mar. 7, 2006: https://www.actionnews5.com/story/4593858/refinery-employees-recover-from-chemical-leak/.

years, including upgrades made since 2021 in response to API RP-751. There is no evidentiary connection between the age of HF-containing refineries and their safety record or ability to respond to an HF release.

Finally, Petitioners inappropriately infer that problems at a particular facility reflect an industry-wide failure to adequately mitigate potential risks. Petitioners highlight one particular "near-miss" incident at the Torrance Refinery in Torrance, California, where an electrostatic precipitator exploded during maintenance in 2015. Significantly, the Petition misleadingly claims on Page 54 that the safeguards in the 2015 event 'were absent or nonfunctional' – referencing CSB work in this matter. CSB, though, was discussing the issues on the FCC, not the HF Alkylation unit. The safeguards on the HF Alkylation unit performed as designed. The acid evacuation system was successfully manually activated within seconds of the explosion on the FCC due to effective operator training, even though there was no HF release.

Of note, the Torrance refinery has not had an offsite HF release since its inception in 1966,[58] this incident posed no threat to the nearby community, and significant, additional mitigation devices have been installed since that event. Any potential, future failures are better addressed through EPA's inspection and enforcement program and should not be included within the "condition of use" for HF alkylation under TSCA.

[58] *See* "Setting the Record Straight The Truth About Torrance Refinery MHF," Torrance Refining Co., Jan. 16, 2018: https://torrancerefinery.com/wp-content/uploads/2018/03/MHF-MvF-TechDeck-Complete-1.16.18-FINAL.pdf at 8.