3/13/18 AGENDA, ITEM 6A - CONSIDERATION OF THE SUBMITTAL OF A RESOLUTION OR LETTER SUPPORTING A REQUIREMENT TO IMPROVE SAFETY AT THE TORRANCE REFINERY BY THE SCAQMD THROUGH THE RULE 1410 PROCESS AND OPPOSING TO THE USE OF MODIFIED HYDROFLUORIC ACID AT THE REFINERY. SUPPLEMENTAL LETTER AND ATTACHMENT FROM AL SATTLER SUBMITTED TO THE CITY COUNCIL ON 3/10/18 AT 9:37 P.M.

From: Al Sattler [mailto:alsattler@igc.org]
Sent: Saturday, March 10, 2018 9:37 PM
To: City Council <citycouncil@hermosabch.org>
Subject: Environmental Justice: Need expeditious progress on Refinery HF Ban

Members of Hermosa Beach City Council:

Attached is a letter submitted to the Board of the South Coast Air Quality Management District (SCAQMD) on January 19, 2018, at a hearing held in Torrance by the Refinery Committee of the SCAQMD. The letter was signed by leaders of 17 environmental justice, environmental, community, and faith-based groups.

Please include this letter in your deliberations about sending a letter urging the South Coast Air Quality Management District Board and Staff to adopt a Rule replacing hydrofluoric acid (HF) and Modified HF (MHF) alkylation with a safe alternative within four years of rule adoption.

Inline below is the text of the letter, in case the attachment does not go through.

Al Sattler
Chair
Palos Verdes-South Bay Regional Group
Sierra Club

==========

January 19, 2018
Governing Boardmembers
South Coast Air Quality Management District

Re: Need expeditious progress on Refinery HF Ban--time increases catastrophic danger

Honorable Governing Boardmembers,

We are writing to urge your action to stop a disaster that could occur due to the release of deadly Hydrogen Fluoride (HF) by two South Coast oil refineries. We know the Board and staff are well-aware and concerned about the potential for a catastrophic HF release from the Valero Wilmington or the PBF Torrance (previously ExxonMobil) refineries, the only two in the state still using HF. For many months, staff has carried out rulemaking that could ban HF. Rather than adopt the rule in 2017, the District has not yet acted. Every day of delay increases the danger to community members. **The undersigned Environmental Justice and Environmental organizations, Health Advocates, and refinery community members urge the Board and staff to re-iterate the intention to bring forth a proposed regulation for a ban of HF and MHF (Modified HF) to the Board for consideration as soon as possible, with a ban of HF/MHF within three years, and only extended to five years if confirmed as essential by the Air District.** This is technically and economically feasible and necessary, as discussed below.

Because of the explosion three years ago and ongoing breakdowns at the Torrance refinery, the Torrance community has been the focus of the HF ban and has worked tirelessly. Unfortunately, this problem has dragged on for decades and is also a continuing concern near the Valero Wilmington refinery. The initial HF ban in the 1990s was reversed by an oil industry lawsuit, ending with the AQMD settling for use of MHF. AQMD staff now understand that safety claims on MHF were false, and that MHF does not prevent deadly consequences as promised. Eight independent scientists and engineers, also provided updated investigations showing that MHF use at refineries is as dangerous as HF.

Seismic scientists warned in 2016 that the Southern San Andreas fault is "Locked, Loaded, and Ready to Roll".[1] With severe earthquake dangers increasing every year, and because refinery accidents continue even without earthquakes, HF and MHF endanger thousands. The U.S. Chemical Safety Board found the ExxonMobil 2015 explosion was a near-miss for catastrophic, fatal exposure of the community to "modified" HF due to an explosion blowing heavy debris very close to HF tanks.[2] Because of these well-established severe risks, we urge you to ensure AQMD staff has enough resources to complete rulemaking and environmental review for Board consideration as soon as possible.


Torrance 2015 explosion found as near-miss from deadly HF disaster - US CSB – Photo 4

[1] **"The springs on the San Andreas system have been wound very, very tight. And the southern San Andreas fault, in particular, looks like it's locked, loaded and ready to go**," said Thomas Jordan, director of the Southern California Earthquake Centre. https://www.sciencealert.com/the-san-andreas-fault-is-locked-loaded-and-ready-to-roll-say-scientists

[2] The CSB determined that a rupture from heavy debris nearly missing HF processing could have caused catastrophic release of MHF into the neighboring community.

Some industry arguments for delay of the HF/MHF ban, and our responses, are as follows:

Myth: Refineries can't afford to switch out of HF/MHF, and would shut down permanently**.**

Reality: The ban is affordable; refineries are valued at much higher than HF replacement costs:

- **Refinery-funded studies drastically overestimated costs –** The Torrance Refinery's consultant Burns & McDonnell estimated $600 million, even though equipment cost is only $56 million. Total cost (labor, engineering, etc.) should be not be such a high multiple of bare equipment costs.[3] Savings due to reduced insurance, maintenance, and eliminated HF mitigation are also missing. **Industry has a history and vested interest in overestimating regulation costs; regulators and the public must independently analyze.**
- **The AQMD and others found far lower costs:** AQMD identified costs at $100-$200 million for new alkylation alone, and $210-330 million for new alkylation plus acid regeneration.[4] Lower costs of various industry associations varied between $45-$150 million.[5]
- **Digital Refining, an industry engineering forum, found the cost for replacing HF with sulfuric acid alkylation may be a fraction of the cost of new units**, because they can generally use the same equipment.[6]
- **Hydrocarbon Processing found in 2017 that replacement is only 40-60% the cost of new units.[7]**
- **The refineries have been valued at far higher levels than alkylation replacement cost** (Torrance: ~$1.4 billion dollar value, Valero Wilmington: ~$930 million[8]); HF replacement increases refinery value. Banning HF would not cause refineries to walk away from these major investments. Oil companies are multi-billion dollar industries; they can and must afford normal costs of basic health and safety;
- **Most importantly, human life is irreplaceable; the value of protection is not a nicety.**

Myth: Sulfuric Acid is just as bad as HF/MHF

Reality: HF/MHF is well-established as far more dangerous than sulfuric acid

- **Dupont found:[9]** *"From a safety and environmental standpoint, H2SO4 [sulfuric acid] has a clear advantage over HF . . . Both HF and H2SO4 acids are hazardous materials, however, HF is considerably more dangerous. . . . The volatility of the acid at ambient conditions is a chief concern. HF is a toxic, volatile gas at these conditions, while H2SO4 is a toxic liquid. Therefore, H2SO4 is much easier to contain in the event of an accidental release. The hazardous nature of both materials has been known and respected for years. In more densely populated areas of the world, safety and environmental concerns of HF usage have given H2SO4 alkylation a notable advantage."*
- **HF/MHF exposure risks death, and other severe impacts:** Swallowing a small amount of HF can be fatal. Breathing high levels or with skin contact can cause death; people who survive may suffer chronic lung disease. Skin contact may cause persistent pain, deep, slow-healing burns, bone loss. Eye exposure may cause blindness.[10]

[3] Dr. Sally Hayati, Surviving without HF, for example pp. 3, 5, other pages
[4] SCAQMD Staff Presentation for January 20, 2018 workshop, Slide 15, available at: http://www.aqmd.gov/docs/default-source/Agendas/refinery-committee/status-report-on-rule-1410.pdf?sfvrsn=6
[5] Ibid, Surviving without HF, p. 5
[6] Digital Refining, Processing, Operations, and Maintenance, 2002, *The cost of the conversion from HF alkylation to H2SO4 alkylation is a fraction of that of a grassroots unit as it uses most of the existing equipment."*
[7] Hydrocarbon Processing, Oct. 2017, p. 53-58, HF alkylation conversion is finally within reach, Part 2, p. 58 found: *"**At 40%–60% the cost of a new unit, the cost to convert from HF to sulfuric acid alkylation using these new conversion solutions is significantly lower than any other option available on the market.** . . . Finally, the solutions discussed here are designed for maximum reliability and operability, utilizing equipment that is very familiar to refinery process operators and maintenance personnel*.
[8] The LA Business Journal, *The List, Highest Assessed Properties, The 2014 Book of Lists*,
[9] Dupont, H2SO4 vs HF, http://www.dupont.com/content/dam/dupont/products-and-services/consulting-services-and-process-technologies/consulting-services-and-process-technologies-landing/documents/H2SO4_vs._HF.pdf
[10] CDC (Center for Disease Control), https://emergency.cdc.gov/agent/hydrofluoricacid/basics/facts.asp

Furthermore, there are safer alternatives to either HF or sulfuric acid. For example, Chevron Salt Lake City is already beginning the switch to ionic liquid alkylation.[11] It is also important to note that MHF is mostly HF, with only a small fraction of additive (so MHF is in effect HF). This reality was extensively documented in the workgroup meetings last year. And in the most recent presentation, staff found that despite some uncertainties and assuming the best-case scenario of the effectiveness of MHF as a mitigation technique, thousands of pounds of HF could still be released in the South Coast.[12]

The bottom line is that, if a catastrophic exposure to deadly HF were to occur at this point, communities in the South Coast would be devastated and would have cause to hold the District responsible for failure to prevent it. We appreciate the extensive AQMD efforts to date. However, after decades of incomplete actions, and more recently the lack of completion of a rule last year, we are becoming very worried. Our understanding was that the District had originally hoped to adopt its new regulation by the end of 2017.

We are even more dismayed to hear that the AQMD staff is now considering a three-tier risk mitigation approach allowing "failsafe HF containment system", in lieu of an outright ban and phasing out of MHF. Notably, the 1990 Consent Decree was designed to provide exactly that, but failed to do so. It is now time to phase out the use of MHF and HF in any refinery in California. **In conclusion, we urge that the Board and staff publicly re-iterate your intention to bring a regulation to the Board for consideration as expeditiously as possible, with a ban within three years, and no longer than five years if proven essential.** Thank you to the Board and staff for your work on this crucial safety issue.

Sincerely,

Sylvia Arredondo, Wilmington resident and Civic Engagement Coordinator, Communities for a Better Environment (CBE), and Julia May, Senior Scientist, CBE

Jesse N. Marquez, Executive Director, Coalition For A Safe Environment (CFASE)

Oscar Espino-Padron, Associate Attorney, Earthjustice

Sherry Lear and Damien Luzzo, Co-Organizers, 350 South Bay Los Angeles

David Petit, Senior Attorney, Natural Resources Defense Council (NRDC)

Jack Eidt, Co-Founder, Socal 350

Maya Golden-Krasner, Senior Attorney, Climate Law Institute, Center for Biological Diversity (CBD)

Jim Stewart, PhD, Vice Chair. Sierra Club Angeles Chapter Climate Change Committee

Drew Wood, Executive Director, California Kids IAQ, Wilmington

Ricardo Pulido, Executive Director, Community Dreams, Wilmington

Pastor Alfred Carrillo, Apostolic Faith Center, Wilmington

Pastor Anthony Quezada, American Legion Post 6, Long Beach

Magali Sanchez-Hall, MPH Executive Director EMERGE

Anabell Romero Chavez, Wilmington Improvement Network, Board Member

Joe R. Gatlin, Vice President, NAACP, San Pedro-Wilmington Branch # 1069

Dr. John G. Miller, MD, President, San Pedro & Peninsula Homeowners Coalition

Modesta Pulido, Chairperson, St. Philomena Social Justice Ministry, Carson

cc. Wayne Nastri, Executive Officer, Dr. Phillip Fine, Deputy Executive Officer

[11] Oil and Gas Journal, *Chevron's Salt Lake City refinery plans alkylation unit revamp*, Oct 4, 2016, The article also describes Chevron's plans to complete the unit by 2020, and describes use of this safer alkylation technology in China

[12] *Id.* Staff Presentation, at Slide 6