Who is telling the truth about the Torrance refinery?

By the Science Advisory Panel of the Torrance Refinery Action Alliance
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Photo by Robert Casillas, Daily Breeze/SCNG

In his Daily Breeze Opinion piece, Torrance Refinery manager Steven Steach categorically asserts, without any specifics, that warnings on the TRAA door hangers in its recent 100,000 door-hanger campaign are incorrect and misleading and contain false claims about risks caused by the Torrance Refinery. The TRAA Science Advisory Panel of eight local scientists and engineers with extensive experience with highly toxic chemicals, carefully reviewed the door-hanger content and found it to be an accurate, concise statement of the current situation with no misleading information.

At least we can agree with the Torrance Refinery and the experts Mr. Steach cites that Hydrogen Fluoride (HF) is far too dangerous for a refinery to use in a highly populated area. Of the EPA's list of 255 extremely hazardous substances that require a Risk Management Plan, HF is in the group of the top 5% that are the most dangerous. And, of Department of Homeland Securities' Chemicals of Interest (COI) list of the 187 substances with toxic releases, HF is in a group of six with the highest danger, edged out by only one chemical -- the infamously deadly phosgene, which killed about 85,000 in World War I. Mr. Steach states that the refinery phased out HF in 1997. But did it really?

In settlement of a lawsuit brought by the City of Torrance against the Torrance refinery in 1990, the then refinery owner Mobil agreed in a Consent Decree to eliminate HF if it failed to create a modified form of HF (MHF) that would not form a ground-hugging toxic cloud upon accidental release. A chemical "additive" was to be mixed into the HF to make it more like the much safer sulfuric acid that Chevron uses in its El Segundo refinery.

However, MHF failed spectacularly when tried out at the Torrance refinery in 1997. Outside the public eye, the refinery dialed back the additive from the 30-50% by weight it originally planned to as low as 6.6% today [page 11]. A simple

calculation shows this is only 1 additive molecule per 100 HF molecules. At this token additive concentration, our calculations show MHF behaves just like HF.

And the South Coast Air Quality Management (SCAQM) staff agrees. As part of its process to establish Rule 1410 requiring HF/MHF replacement, the staff has reviewed the voluminous proprietary data provided by the refinery and concluded [page 4&5], "...the testing/modeling information provided by TORC did not sufficiently demonstrate MHF would not … form a dense HF cloud." As Congressman Ted Lieu stated, "Exxon-Mobil hoodwinked this community."

But the situation gets even worse. The highly qualified [page 34] Quest Consultants, Inc. conducted MHF release experiments for Mobil. But Mobil must not have liked the results. At the experiments' completion, Mobil employees came in and took away every scrap of data and have kept it secret for more than 20 years. However, in Quest's peer-reviewed, 1995 paper [Fig. 6], the unequivocal assessment by the same Quest researchers is that 100% of an accidental release of MHF mixed with hydrocarbons will go airborne in an aerosol cloud -- none "rains out" to the ground, even with a much higher level of additive than is actually used. This important Quest paper, which directly contradicts Mobil's assertions about MHF's behavior, was not mentioned in reports to the Court by the Safety Advisor, who was handpicked by Mobil.

There's more. In its 2004 Hazard Analysis [page 5-2] for the Valero Refinery in Wilmington, Quest experts report that the only safety advantage of MHF is an inconsequential 7.9% reduction in the toxic range -- hardly reassuring to residents of the South Bay.

Mr. Steach cautions not to be alarmed by EPA emergency "planning circles" that show the deadly reach of toxic chemicals. However, as the U.S. Chemical Safety Board noted, the February 18, 2015 explosion at the Torrance Refinery very nearly caused a catastrophic release of 50,000 lbs. of hydrogen fluoride into the community, just like the circles show.

Respectfully submitted,
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