# Status Update to the South Coast AQMD Refinery Committee on Implementation of Hydrogen Fluoride Safety Enhancements in Proffer Letters for Torrance Refining Company and Valero Refinery

**December 2020**

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## Introduction

On September 6, 2019, the South Coast Air Quality Management District (South Coast AQMD) Governing Board approved Resolution 19-19 Accepting the Proffered Voluntary Implementation of Additional Safety Enhancements for the Use of Modified Hydrofluoric Acid at the Torrance and Wilmington Refineries (September Resolution), see Attachment 1 for September Resolution. Torrance Refining Company (TORC) and Valero Refinery (Valero), formerly Ultramar Wilmington Refinery, submitted proffer letters, dated August 30, 2019, committing to install significant voluntary enhancements in the alkylation unit at each of their refineries. The South Coast AQMD Governing Board accepted the safety enhancements and control measures proffered by TORC and Valero with the following conditions:

- South Coast AQMD Executive Officer is directed to not continue with any PR 1410 rulemaking activities or other efforts seeking additional commitments from TORC or Ultramar regarding the use of HF or MHF;
- Until the new safety enhancements and control measures are fully implemented by TORC and Ultramar as set forth in their respective Proffer Letters, the South Coast AQMD Executive Officer shall report back to the Refinery Committee annually on the progress of the implementation of the new safety enhancements and control measures at the Torrance and Wilmington Refineries; and
- Nothing in this resolution or in the South Coast AQMD Governing Board's acceptance of Ultramar's or TORCs respective Proffer Letters shall modify or alter the 2003 MOU or Torrance Consent Decree.

This report is the first annual report to the Refinery Committee on the progress of the implementation of new safety enhancements and control measures at TORC and Valero. If TORC and Valero do not implement measures in their proffer letters, then the South Coast AQMD could pivot back to rulemaking or development of an MOU. Also, refineries are seeking to conduct a technological review and implement new technology if it is feasible and available.[1]

On November 15, 2019, the South Coast AQMD staff sent letters to TORC and Valero requesting that each refinery submit a quarterly update, beginning January 2020, on the progress of implementing new safety enhancements specified in their August 30, 2019 letters. Staff requested that the progress report includes status of the design, purchase, installation, testing, and operational start date of the safety enhancements, and any delays or issues that may impact the anticipated completion of safety enhancements. Also, these facilities are expected to clarify their plan to explore the feasibility of alternative alkylation catalyst as mentioned in the proffer letters.

[1] Approved Minutes of the September 6, 2019 Board Meeting. October 4, 2019.

**TORC's Proffer Letter and Status Update**

The August 30, 2019 proffer letter from TORC included five voluntary safety enhancements to the modified hydrogen fluoride (MHF) Alkylation unit that would begin to be implemented in 2020, with anticipated completion in 2021. Each of the enhancements are generally described below. For additional details of each of the voluntary safety enhancements, please refer to Attachment 2.

1. Settler Acid Protective Steel Structure

TORC will install, maintain, and operate a protective steel structure around and over the MHF Alkylation unit's acid settler area as an additional passive mitigation to the existing settler pans, and as such, structure will be designed to:

- Protect the settlers from external impacts;
- Provide an additional barrier and promote an HF/MHF-water mixing in the settler area; and
- Automatically deploy, upon detection, necessary volumes of water to mitigate HF/MHF release.

2. Settler Area Water Mitigation Dome and Curtain

TORC will install, maintain, and operate a water mitigation dome and curtain over and around the MHF Alkylation unit's acid settlers, as an additional active mitigation. Water mitigation designed to:

- Include a new high-volume water mitigation system around and over the acid settlers that will include three stages of water mitigation:
  - Stage One: Four overhead water monitors to form an umbrella dome inside the structure
  - Stage Two: Spray curtain around the base of the structure
  - Stage Three: Augment MHF Alkylation unit's existing water mitigation to provide a three-stage water response in the settler area
- Automate water mitigation to allow rapid and focused response.

3. Settler Area Enhanced HF/MHF Detection System

TORC will install, maintain, and operate an enhanced HF/MHF detection system in and around the MHF Alkylation unit's acid settlers' area. The detection system will include:

- New open path laser detectors to monitor acid settler area and inside the structure;
- New point source detectors; and
- New camera within the structure to provide visual monitoring.

4. Northern Water Mitigation Monitors

TORC will upgrade, maintain, and operate the northern water mitigation monitors, as enhanced active mitigation that will include:

- Automation of water mitigation that can be automatically or manually activated; and
- Optimization of water mitigation.

5. Fluidized Catalytic Cracking Unit (FCCU) Electrostatic Precipitator (ESP) Over-Pressure Mitigation

TORC will install and maintain FCCU ESP mitigation designed to minimize the potential for a large section of the FCCU ESP to detach during an over-pressurization incident by providing an anchoring system for the ESP intake ducting.

To date, TORC has submitted four quarterly reports on January 27, 2020, April 7, 2020, July 7, 2020, and October 6, 2020. All four quarterly reports have stated that enhancements are on schedule for implementation in 2021 and are provided in Attachment 4. A summary of the quarterly reports is provided in Table 1.

**Table 1**
**Summary of Progress of Implementing Safety Enhancements for HF/MHF at TORC**

| Safety Enhancements | January 2020 Report | April 2020 Report | July 2020 Report | October 2020 Report |
|---|---|---|---|---|
| 1. Settler Acid Protective Steel Structure | • Funding approved for detailed engineering and procurement<br>• Detailed engineering in progress<br>• Specialty equipment supplier selected for:<br>- Settler Area Water Mitigation Dome and Curtain<br>- Settler Area Enhanced HF/MHF Detection System<br>• On schedule for 2021 implementation | • Underground verifications for foundation designs in progress<br>• On schedule for 2021 implementation | • Completed underground verifications and foundation design<br>• On schedule for 2021 implementation | • July 2020 Report with no additions<br>• On schedule for 2021 implementation |
| 2. Settler Area Water Mitigation Dome and Curtain | Same as above | | | |
| 3. Settler Area Enhanced HF/MHF Detection System | Same as above | | | |
| 4. Northern Water Mitigation Monitors | Same as above | | | |
| 5. FCCU Electrostatic Precipitator Over Pressure Mitigation | Same as above | | | |

**Valero's Proffer Letter and Status Update**

The August 30, 2019 proffer letter from Valero included six voluntary safety enhancements to the MHF Alkylation unit. For additional details of each of the voluntary safety enhancements please refer to Attachment 3. Valero committed to install many of the safety enhancements by the next Alky ReVAP turnaround, which is scheduled for January 2022.

1. Open Path Perimeter HF Sensors

- Ultramar will install open path perimeter HF sensors around the Alky ReVAP Unit for early detection of an HF leak; and
- Installation will be within one year of accepting Proffer.

2. Flange Guards

- Ultramar will install guards on each flange in the Alky ReVAP unit in the main acid service lines greater than 2 inches in diameter; and
- Unless Ultramar identifies a necessary delay in the design phase, flange guards shall be installed no later than the completion of the next scheduled Alky ReVAP turnaround
    - If issues are identified in the design and engineering phase, installation will be no later than completion of the subsequent Alky ReVAP turnaround.

3. Automation of Water Curtain System

- Ultramar will complete installation of a system to automate operation of existing water curtain system in the Alky ReVAP Unit; and
- Unless Ultramar identifies a necessary delay in the design phase, water curtain automation will be installed no later than the completion of the next scheduled Alky ReVAP turnaround
    - If issues are identified in the design and engineering phase, installation will be no later than completion of the subsequent Alky ReVAP turnaround.

4. Additional Point Source Detectors

- Ultramar will install additional point source detectors at locations optimized to further facilitate precise and rapid detection and response to any potential release of MHF; and
- Installation will be within one year of accepting Proffer.

5. Acid Settler Debris Grid

- Ultramar will evaluate and design a debris grid to mitigate impacts to the elevated section of the acid settler;
- Debris grid will be designed to avoid interference with existing HF mitigation systems;
- Within 180 days of accepting Proffer, Ultramar shall develop a preliminary engineering design for the debris grid; and
- Unless Ultramar identifies a necessary delay in the design phase, the acid debris grid will be installed no later than the completion of the next scheduled Alky ReVAP turnaround
    - If issues are identified during the design and engineering phase, installation will be no later than completion of the subsequent Alky ReVAP turnaround.

6. Acid Settler Riser/Leg Rain Out Barrier/Shroud and De-propanizer Acid Boot Rain Out Barrier/Shroud

- Ultramar will design, engineer, and install Rain Out Barrier/Shroud systems for the Acid Settler Risers and Legs, and Depropanizer Acid Boots to reduce the momentum of any potential release from these systems and to redirect the material downward to increase rain out and capture by the water mitigation systems;
- Install additional barriers or shrouding on the elevated acid piping that feeds the settler;
- Within 180 days of accepting Proffer, Ultramar shall develop a preliminary engineering design of the acid settler riser/leg rain out barrier/shroud and depropanizer acid boot rain out barrier/shroud systems; and
- Unless Ultramar identifies a necessary delay in the design phase, the acid settler riser/leg and depropanizer acid boot projects will be installed no later than the completion of the next scheduled Alky ReVAP turnaround
    - If issues are identified in the design and engineering phase, installation will be no later than completion of the subsequent Alky ReVAP turnaround.

To date, Valero Refinery has submitted four quarterly reports on January 30, 2020, April 29, 2020, July 30, 2020, and October 30, 2020. All four quarterly reports have stated that enhancements are on schedule for implementation and are provided in Attachment 5. A summary of the quarterly reports is provided in Table 2.

**Table 2**
**Summary of Progress of Implementing Safety Enhancements for HF/MHF at Valero**

| Safety Enhancements | January 2020 Report | April 2020 Report | July 2020 Report | October 2020 Report |
|---|---|---|---|---|
| 1. Open Path Perimeter Monitoring with HF Sensors (Commitment to complete by Sept 30, 2020) | • Funding approved<br>• Final phase of engineering<br>• Purchased all sensors and electronics<br>• Awaiting City of LA permit | • Awaiting approval of waiver from CA Coastal Commission<br>• On schedule for September 2020 | • Sep 2, 2020, Valero notified South Coast AQMD that Open Path Perimeter Monitoring is completed | • Completed and fully commissioned the installation – August 28, 2020 |
| 2. Flange Guards (Commitment to complete by next turnaround) | • Purchased flange guards for trial use<br>• On schedule for next Alky Unit turnaround | • No additional information<br>• On schedule for next Alky Unit turnaround | • Installed several trial flange guards to confirm meets objective<br>• On schedule for next Alky Unit turnaround | • No additional information<br>• On schedule for next Alky Unit turnaround |
| 3. Automated Water Curtain<br>4. Additional Point Source Detectors | • Funding approved<br>• Preliminary engineering design<br>• On schedule for next Alky Unit turnaround | • Completed preliminary engineering design May 2020<br>• Next engineering design July 2020<br>• On schedule for next Alky Unit turnaround | • Refinement engineering phase funded and work underway<br>• On schedule for next Alky Unit turnaround | • Completed preliminary engineering design May 2020<br>• Progressing on engineering phase<br>• On schedule for next Alky Unit turnaround |
| 5. Acid Settler Debris Grid<br>6. Acid Settler Riser/Leg Rain Out Barrier/Shroud | • Funding approved<br>• Engineering design by March 2020<br>• On schedule for next Alky Unit turnaround | • Sent preliminary engineering design sent March 3, 2020<br>• Next phase engineering design July 2020<br>• On schedule for next Alky Unit turnaround | • Refinement engineering phase funded and work underway<br>• On schedule for next Alky Unit turnaround | • No additional information<br>• On schedule for next Alky Unit turnaround |

## Alternative and Emerging Alkylation Technologies

### *Background*

Over the last two decades, alternative catalyst technology has been emerging to replace HF, MHF, and sulfuric acid in the alkylation process. The emerging technologies seek to mitigate the potential risk from release as well as increase the efficiency of the alkylation process. This technology has been developed in the form of solid acid, liquid ionic, and advanced sulfuric acid alkylation.

### *Traditional Alkylation*

Traditional acid-based alkylation processes use either HF, MHF, or sulfuric acid to create alkylate, a blending component required to make high-octane gasoline. HF, MHF, and sulfuric acid are all highly corrosive, strong acids that have safety and environmental risks. If released, HF and MHF have the propensity to become airborne as a dense, toxic vapor cloud putting both the workers and the public at risk for exposure. Both refineries have stated they would not consider transitioning to a sulfuric acid alkylation unit. Sulfuric acid units require a significant volume of acid that must be regenerated for re-use. If a facility does not have the ability to regenerate the acid on site, it could lead to increased truck traffic, and the associated emissions, transporting the spent and re-generated acid.

Since 2015, a series of high-profile refinery explosions in California, Wisconsin, and Pennsylvania renewed the concern over using HF and MHF in refinery operations, especially near densely populated urban centers. Regulatory agencies and local community groups have called on refiners to examine their options for mitigating the risks of aging HF alkylation units.

### *New Alkylation Technologies*

#### Ionic Liquid Alkylation

Chevron Corp. is converting their existing 4,500-barrels per day HF alkylation unit at its 53,000-barrels per day refinery in Salt Lake City, Utah, into the first-ever alkylation unit in the U.S. based on ionic liquid alkylation technology. Chevron will convert to ISOALKY, a proprietary alkylation technology developed by Chevron USA Inc. and now licensed by Honeywell International Inc.'s UOP LLC. ISOALKY uses ionic liquids instead of HF or sulfuric acid as a liquid alkylation catalyst for production of high-octane fuels. In addition to lower health risks, ISOALKY enables catalyst regeneration to occur within the unit itself, lowering catalyst consumption by 400 times versus sulfuric acid, according to the technology licensor. According to Chevron's 2019 Supplement to the Annual Report, "At the Chevron Salt Lake City refinery in Utah, construction continued on the alkylation retrofit project with more than 100 modules transported and installed. Chevron expects to be the first to install the new ISOALKY technology in the United States, with project start-up expected in first-half 2021." Ionic liquid alkylation technology has been successfully deployed on both pilot and commercial scales in China as a retrofit of an existing sulfuric acid alkylation unit as well as construction of a new unit.

## Ionikylation

Ionikylation, a composite ionic liquid catalyzed alkylation technology developed by the China University of Petroleum–Beijing and licensed by Well Resources Inc, is an inherently safe, commercial process that uses a proprietary composite ionic liquid catalyst, a non-volatile, non-aqueous liquid salt, to facilitate the alkylation reaction. The alkylation catalyst is non-hazardous and non-corrosive, allowing all process equipment to be manufactured using low-cost carbon steel. The catalyst is regenerated onsite under moderate operating conditions, which provides the added benefits of emissions reduction compared to alternative technologies.

The technology has been under development for 20 years. Significant process improvements have been made in recent years, concurrent with widespread commercial adoption in Asia-Pacific (Table 3). In 2005, the first retrofit project was successfully performed at the PetroChina Lanzhou refinery by retrofitting an existing, 65,000-metric-ton per year sulfuric acid alkylation unit with the proprietary catalyst.

**Table 3**
**Commercial Implementation of Ionikylation Technology in China**

| Facility name/location | Production capacity | | Startup date |
|---|---|---|---|
| | Thousands ton per year | Barrels per day | |
| Dayan Chemical Co, Dongying, Shandong, China | 100 | 2,450 | Q3 2013 |
| PetroChina Harbin Petrochemical Co., Harbin, China | 150 | 3,700 | Q4 2018 |
| PetroChina Qinghai Oilfield Co, Qinghai, China | 50 | 1,250 | Q1 2019 |
| Sinopec Jiujiang Co., Jiangxi, China | 300 | 7,400 | Q1 2019 |
| Wuhan Petrochemical Co., Wuhan, China | 300 | 7,400 | Q1 2020 |
| Sinopec Anqing Co., Anhui, China | 300 | 7,400 | Q1 2020 |

In 2013, an independent refiner, Dayan Chemical Co. Ltd., commissioned a 100,000-metric-ton per year unit. The commercial process performance data from this operation were published in the March 2018 issue of *Hydrocarbon Processing.* From 2017–2018, 10 new units were licensed to both state-owned and private Chinese refiners.

Notably, the commissioning of the Sinopec Wuhan unit is the world's first commercial-scale revamp from an HF-based alkylation process. This revamped unit was one of two remaining HF-based alkylation processes in operation in China.

In March 2019, the 150,000-metric-ton per year unit at PetroChina Harbin Petrochemical Co. conducted a calibration test to benchmark and compare commercial process performance data against design specifications and identify optimization opportunities. To date, no safety-related incidents or concerns have been identified by the operator. The robustness of the technology is demonstrated through its ability to produce alkylate that meets or exceeds design specifications, even during deviation from prescribed design feed specifications. If required, the Harbin

Petrochemical unit is capable of producing even higher quality alkylate products by operating at lower temperatures.

**Next Steps**

- Continue to follow the progress of emerging alternative alkylation technologies at petroleum refineries with translatable operations
- Report back to Refinery Committee in Fall 2021

**References**

Chevron 2019 supplement to the annual report, available at https://www.chevron.com/-/media/shared-media/documents/annual-report-supplement-2019.pdf

Zhang, S., L. Wilkinson, L. Ogunde, R. Todd, C. Steves and S. Haydel, "Alkylation technology study final report—South Coast Air Quality Management District (SCAQMD)," Norton Engineering, September 2016.

Chung, W. , Zhang, R. , Song, D. ,"Safe and sustainable alkylation: Performance and update on composite ionic liquid alkylation technology," *Hydrocarbon Processing,* April 2020.

Liu, Z., R. Zhang, X. Meng, H. Liu, C. Xu, X. Zhang and W. Chung, "Composite Ionic Liquid Alkylation technology gives high product yield and selectivity," *Hydrocarbon Processing,* March 2018.

Appendix 1 – South Coast AQMD Governing Board September Resolution

## RESOLUTION NO. 19–19

**A Resolution of the Governing Board of the South Coast Air Quality Management District (South Coast AQMD) Accepting the Proffered Voluntary Implementation of Additional Safety Enhancements for the Use of Modified Hydrofluoric Acid at the Torrance and Wilmington Refineries**

**WHEREAS,** Modified Hydrofluoric Acid (MHF) Alkylation is used at the Torrance and Wilmington refineries within the South Coast Air Basin for the purpose of producing alkylate, a critical blending component of California Air Resources Board reformulated gasoline; and

**WHEREAS,** the Torrance Refinery is currently owned and operated by the Torrance Refining Company LLC (TORC); and

**WHEREAS,** the Wilmington Refinery is currently owned and operated by Ultramar Inc. (Ultramar); and

**WHEREAS,** pursuant to the City of Torrance Consent Decree, Case No. C 719 9530 (Torrance Consent Decree), issued by the Los Angeles Superior Court in 1990, and several subsequent court orders, the Torrance Refinery agreed to use MHF, a modified form of alkylate catalyst reformulated to significantly reduce safety risks associated with HF; and

**WHEREAS,** pursuant to a Memorandum of Understanding between the South Coast AQMD and Ultramar, dated February 12, 2003 (2003 MOU), the Wilmington Refinery agreed to use MHF; and

**WHEREAS,** during the more than two-year extensive public participation rule making process for PR 1410, additional information has been provided to the South Coast AQMD regarding the safety systems and risk mitigation measures currently in use at each of the Torrance and Wilmington Refinery alkylation units to reduce the risk and protect refinery personnel and the community; and

**WHEREAS,** the South Coast AQMD Governing Board has determined it is desirable, and each of the Torrance and Wilmington refineries is willing, to further reduce the overall risk of the use of MHF in the MHF alkylation units by implementing additional, voluntary safety enhancements and control measures; and

**WHEREAS,** TORC has submitted a proffer letter, dated August 30, 2019, (TORC Proffer Letter) pursuant to which it is committing to install significant voluntary safety enhancements in the Torrance Refinery's alkylation unit; and

**WHEREAS,** Ultramar has submitted a proffer letter, dated August 30, 2019, (Ultramar Proffer Letter) pursuant to which it is committing to install significant, voluntary new control measures in the Wilmington Refinery's alkylation unit; and

**WHEREAS,** the South Coast AQMD Governing Board has determined that the expeditious implementation of the safety enhancements set forth in the TORC Proffer Letter and the Ultramar Proffer Letter is in the best interest of all the stakeholders;

**THEREFORE, BE IT RESOLVED** that the South Coast AQMD Governing Board, in regular session assembled on September 6, 2019, does hereby accept the safety enhancements and control measures as proffered in the TORC and Ultramar Proffer Letters; and

**BE IT FURTHER RESOLVED** that the South Coast AQMD Executive Officer is directed to not continue with any PR 1410 rulemaking activities or other efforts seeking additional commitments from TORC or Ultramar regarding the use of HF or MHF; and

**BE IT FURTHER RESOLVED** that until the new safety enhancements and control measures are fully implemented by TORC and Ultramar as set forth in their respective Proffer Letters, the South Coast AQMD Executive Officer shall report back to the Refinery Committee annually on the progress of the implementation of the new safety enhancements and control measures at the Torrance and Wilmington Refineries; and

**BE IT FURTHER RESOLVED** that nothing in this resolution or in the South Coast AQMD Governing Board's acceptance of Ultramar's or TORC's respective Proffer Letters shall modify or alter the 2003 MOU or the Torrance Consent Decree.

AYES: Bartlett, Benoit, Burke, Buscaino, Delgado, McCallon, Robinson and Rutherford

NOES: Cacciotti, Hahn and Mitchell

ABSENT: Perez*

DATE: September 6, 2019 Denise Garzaro

Denise Garzaro, Clerk of the Boards

*The member appointed by the Governor is currently Vacant.

Appendix 2 – Torrance Refining Company Proffer Letter

Torrance Refining Company LLC
3700 W. West 190th Street
Torrance, CA 90504
www.torrancerefinery.com

***VIA OVERNIGHT MAIL***

August 30, 2019

Honorable Mayor Larry McCallon
Refinery Committee Chair
Governing Board Member
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

***Subject: Torrance Refining Company LLC Voluntary Modified Hydrofluoric Acid Alkylation Unit Safety Enhancement Commitments***

Dear Mayor McCallon,

As you are aware, Torrance Refining Company LLC ("TORC") has been working with the South Coast Air Quality Management District ("District") in connection with the rulemaking process for "Proposed Rule 1410, Hydrogen Fluoride Storage and Use at Petroleum Refineries" ("PR 1410"), which impacts TORC's Torrance Refinery. This process has been focused upon enhancing the safety of the Modified Hydrofluoric Acid ("MHF") alkylation catalyst technology utilized at the Torrance Refinery. Through the very rigorous PR 1410 public process, which has included the participation of various stakeholders at public Refinery Committee meetings as well as Working Group meetings with District staff, we have demonstrated that MHF continues to be safe to use at the Torrance Refinery's current operating conditions. The existing safety systems are multi-layered and redundant in order to contain and prevent any offsite release of HF and protect Refinery personnel and the community while allowing TORC to reliably produce alkylate, which is a critically important blending component that is necessary for the production of compliant California reformulated gasoline.

Based on the June 22, 2019 Refinery Committee meeting, the PR 1410 process currently involves the negotiation of a Memorandum of Understanding ("MOU") and/or rulemaking for the implementation of safety enhancements. The implementation of additional state-of-the-art safety enhancements at the MHF Alkylation Unit have been part of the ongoing discussions with the District. Continuation of the PR 1410 process will delay critical decision-making by TORC regarding the implementation of these further enhancements. Additionally, it is clear that a safer and viable alternative technology for HF and MHF currently does not exist. As communicated throughout the PR 1410 public process, even though the MHF Alkylation Unit's existing safety systems already have been successful and proven in protecting Refinery personnel and the community, TORC has devoted significant time and resources to identifying additional technological enhancements that will ensure the safest possible use of HF and MHF in the Unit. TORC has reached a critical juncture in terms of its ability to timely implement the proposed safety enhancements as currently proposed by the next scheduled unit turnaround anticipated to take place in early 2021.

In order to obviate the need for further rulemaking with respect to the use of HF and MHF at the Torrance Refinery, TORC proffers to implement the safety system enhancements set forth on **Exhibit A** beginning

in 2020 with anticipated completion in 2021 (the "Voluntary Safety Enhancements"), in accordance with the terms and conditions hereof and thereof. Acceptance of this proffer by the District Governing Board will be the most expeditious means of implementing the safety enhancements at the Torrance Refinery and is in the best interest of all stakeholders. It is our understanding that acceptance of this proffer by the District Governing Board will require an affirmative vote and appropriate Board direction to staff. In the event of delays in completing the implementation of the Voluntary Safety Enhancements due to circumstances that are beyond TORC's reasonable control, TORC will notify the District as soon as it is aware of possible delays.

Of course, if the District Governing Board elects not to accept this proffer on the terms and conditions hereunder, TORC will continue to participate in negotiation of an MOU under the PR 1410 process and will defer the implementation of the Voluntary Safety Enhancements until a full and complete resolution of the PR 1410 process.

* * *

TORC makes this proffer in good faith as a means of expediting the implementation of safety enhancements. As required by existing law[1], upon the successful implementation of the Voluntary Safety Enhancements, TORC commits to continue to explore the feasibility of inherent safety measures, including alternative alkylation catalyst technology, every five years. We hope that the Governing Board will favorably consider this proffer to provide additional near-term protection to Refinery personnel and the community.

In submitting this letter, TORC reserves the right to supplement this letter and its prior responses and comments as it deems necessary, especially if additional or different information is made available to the public for the PR 1410 process.

Please note that nothing contained in this letter is intended or should be construed as an admission or a waiver of TORC's rights and remedies, whether legal or equitable, all of which are expressly reserved.

Sincerely,

Paul Davis
President Western Region

Enclosure (1)

cc: Trecia Canty, Senior Vice President & General Counsel
Steve Steach, Refinery Manager

[1] *See* Title 8 Cal. Code of Regs. § 5189.1(l); Title 19 Cal. Code of Regs. §2762.13.

## EXHIBIT A

### Voluntary Safety Enhancements

To further enhance the existing safety systems currently employed in the Torrance Refinery's MHF Alkylation Unit, TORC will implement the following Voluntary Safety Enhancements on the MHF Alkylation Unit, to further mitigate the likelihood and potential impact of any HF/MHF release from the MHF Alkylation Unit:

1) **Settler Area Protective Steel Structure** – TORC will install, maintain, and operate a protective steel structure around and over the MHF Alkylation Unit's acid settler area as additional passive mitigation to the existing settler pans, and as such, the structure will be:
   a) Designed to protect the settlers from external impacts.
   b) Designed to provide an additional barrier and promote an HF/MHF-water mixing environment to further increase MHF rainout in the event of a HF/MHF release from the settler area.
   c) The south side of the structure facing the interior of the MHF Alkylation Unit will be designed to serve as a barrier and allow for natural light in order for unit operators and maintenance personnel to see into the structure's interior.
   d) For the bottom of the structure, designed to be open to allow operators and maintenance personnel safe access to the settler area and reduce the potential of creating a flammable environment.
   e) Designed to automatically deploy upon detection necessary volumes of water within the structure to mitigate a potential HF/MHF release from the settlers.
   f) Designed and installed in accordance with industry and TORC's engineering standards, manufacturer specifications and guarantees, and pursuant to process safety hazard analysis, and operated consistent with, the City of Torrance Consent Decree ("Torrance Consent Decree")[2], American Petroleum Institute's Recommended Practice-751 ("API RP-751"), California Process Safety Management Program ("CalPSM")[3], and California Accidental Release Prevention Program 4 ("CalARP")[4] requirements, as applied by the Torrance Fire Department ("TFD"), Los Angeles County Fire Department ("LACFD"), the California Department of the Industrial Relations ("CalOSHA"), and California Offices of Emergency Management ("CalOES"), respectively.
   g) Designed to prevent the creation of a confined space, to avoid interference with existing MHF Alkylation Unit mitigation systems, to minimize the confinement of flammable vapors, and to continue to provide for free ingress and egress from the unit within the safety and structural and foundation limitations of the unit.

2) **Settler Area Water Mitigation Dome and Curtain** – TORC will install, maintain, and operate a water mitigation dome and curtain over and around the MHF Alkylation Unit's acid settlers, and such dome and curtain, as additional active mitigation, and as such, the water mitigation system will:

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[2] *See* Los Angeles County Superior Court, Case No. C 719 9530.
[3] *See* Title 8 Cal. Code Regs. §5189.1.
[4] *See* Title 19 Cal. Code Regs. § 2762.0.1 *et seq.*

a) Include a new high volume water mitigation system around and over the acid settlers to promote mixing of water to contain a HF/MHF release in the settler area, while also creating a water curtain at the base of the structure, and will specifically consist of:
   i) Two additional layers of water mitigation:
      (1) Four overhead water monitors to form an umbrella dome inside the structure (Stage One).
      (2) Spray curtain around the base of the structure (Stage Two).
b) Augment the MHF Alkylation Unit's existing water mitigation systems to provide a three-stage water response (Stage Three) in the settler area.
c) Automate upon HF/MHF detection in the acid settler area to allow a rapid and focused water mitigation response, specifically:
   i) Automation of the new water mitigation system will allow water application and contact with any HF/MHF release after detection.
   ii) The MHF Alkylation Unit's existing water monitors in the settler area can then be activated manually as needed to provide a third layer of targeted water mitigation (Stage Three).
d) Optimize the existing water mitigation monitors to ensure sufficient water mitigation coverage for the structure and acid settler area.
e) Be designed, installed and operated in accordance with industry and TORC's engineering standards, manufacturer specifications and guarantees, and pursuant to process safety hazard analysis, and operated consistent with the Torrance Consent Decree, API RP-751, CalPSM, and CalARP requirements as applied by TFD, LACFD, CalOSHA, and CalOES, respectively.
f) Ensure that the combination of the new monitors (Stage One) in the interior of the structure, spray curtains around the structure base (Stage Two), and the existing elevated monitors (Stage Three), can contain any credible HF/MHF release within the structure by the layered water mitigation systems.

3) **Settler Area Enhanced HF/MHF Detection System** – TORC will install, maintain, and operate an enhanced HF/MHF detection system in and around the MHF Alkylation Unit's acid settlers area, and as such, the detection system will:
   a) Include new open path laser detectors to monitor the acid settler area, and inside the structure.
      i) These laser detectors will help identify any potential HF/MHF release and will automatically deploy the new water mitigation system within the structure upon detection.
      ii) These laser detectors will allow Refinery operators to rapidly track and pinpoint the location of a HF/MHF release in the acid settler area.
   b) Include new point source detectors to enhance the unit's existing detection system.
   c) Include a new camera installed within the structure with video replay capability to provide visual monitoring of the settler area inside the structure.
   d) Be placed, designed and installed in accordance with industry and TORC's engineering standards, manufacturer specifications and guarantees, and pursuant to process safety hazard analysis, and operated consistent with the Torrance Consent Decree, API RP-751, CalPSM, and CalARP requirements as applied by TFD, LACFD, CalOSHA, and CalOES, respectively.

4) **Northern Water Mitigation Monitors** – TORC will upgrade, maintain, and operate the northern water mitigation monitors, as enhanced active mitigation, and as such, the water mitigation system will:
   a) Automate upon targeted HF/MHF detection to allow a rapid and focused water mitigation response, specifically:
      i) Automation of the water mitigation system will allow proactive water application and contact with an HF/MHF release after detection.
      ii) These water mitigation monitors can also be activated manually as needed to provide targeted water mitigation.
   b) Optimize the water mitigation monitors to ensure sufficient water mitigation coverage.
   c) Be designed, installed and operated in accordance with industry and TORC's engineering standards, manufacturer specifications and guarantees, and operated consistent with the Torrance Consent Decree, API RP-751, CalPSM, and CalARP requirements as applied by TFD, LACFD, CalOSHA, and CalOES, respectively.

5) **Fluidized Catalytic Cracking Unit ("FCCU") Electrostatic Precipitator ("ESP") over-pressure mitigation** – TORC will install and maintain FCCU ESP over-pressure mitigation which will be:
   a) Designed to minimize the potential for a large section of the FCCU ESP to detach during an over-pressurization incident by providing an anchoring system for the ESP intake ducting.
   b) Placed, designed and installed done in accordance with industry and TORC's engineering standards, manufacturer specifications and guarantees, and pursuant to process safety hazard analysis, and operated consistent with the CalPSM and CalARP requirements as applied by TFD, LACFD, CalOSHA, and CalOES, respectively requirements.

Appendix 3 – Ultramar (Valero Refinery) Proffer Letter

August 30, 2019

The Honorable Larry McCallon
South Coast Air Quality Management District
Chairman, Refinery Committee
21865 Copley Drive
Diamond Bar, CA 91765

Dear Mayor McCallon,

On behalf of Ultramar Inc., owner and operator of the Wilmington Refinery (Ultramar), I am pleased to proffer Ultramar's commitment to enhance our state-of-the-art hydrofluoric alkylation mitigation systems with unprecedented additional layers of protection.

As we have maintained throughout the District's consideration of Proposed Rule 1410, Ultramar has served as an industry leader in developing and implementing state-of-the-art approaches to minimize the likelihood that a release of hydrogen fluoride (HF) could occur and to provide for rapid detection and response in the unlikely event that a release were to occur. In addition to the systems currently in place, Ultramar, working with the District and other stakeholders, has identified additional measures that we believe will support and complement our existing systems and will provide additional measures of safety.

In lieu of further rulemaking or the need for a new or modified memorandum of understanding, Ultramar will commit to implement the following:

1. ***Open Path Perimeter HF Sensors.*** In addition to the open path monitors to be installed at the fenceline of the Wilmington Refinery pursuant to Rule 1180, Ultramar will install open path perimeter HF sensors around the Alky ReVAP Unit to further facilitate early detection and prompt response to any potential release of HF. Placement, design, and installation of the sensors will be done in accordance with Ultramar's engineering standards and pursuant to process safety hazard analysis. These sensors will be installed within one year of the District accepting this proposal.

2. ***Flange Guards.*** Ultramar shall install guards on each flange in the Alky ReVAP Unit in main acid service greater than 2 inches diameter. This measure is expected to improve rain out and subsequent capture of any acid released at a flange by the water mitigation system, and thus is expected to eliminate the potential for flange leaks to result in an offsite release. Design and installation of the flange guards will be done in

accordance with Ultramar's engineering standards and pursuant to process safety hazard analysis. Absent issues that necessitate delay that are identified at the design phase, the flange guards will be installed no later than the completion of the next scheduled Alky ReVAP turnaround; however, if issues are identified in the design and engineering phase that preclude installation of the flange guards during the next scheduled Alky ReVAP turnaround, the flange guards will be installed no later than completion of the subsequent Alky ReVAP turnaround.

3. ***Automation of Water Curtain System.*** Ultramar will complete installation of a system to automate operation of the existing water curtain system in the Alky ReVAP Unit to expedite the activation of the water curtain systems. Design, installation and operation of the curtain automation system will be done in accordance with Ultramar's engineering standards and pursuant to process safety hazard analysis. Absent issues that necessitate delay that are identified at the design phase, the water curtain automation will be installed no later than the completion of the next scheduled Alky ReVAP turnaround; however, if issues are identified in the design and engineering phase that preclude installation of the automation during the next scheduled Alky ReVAP turnaround, the automation shall be installed no later than completion of the subsequent Alky ReVAP turnaround.

4. ***Additional Point Source Detectors.*** Ultramar will install additional point source detectors at locations optimized to further facilitate precise, rapid detection and response to any potential release of MHF. This measure is expected to facilitate rapid and accurately targeted activation of the water mitigation and acid dump systems, whether these are activated automatically or manually. Placement, design and installation of the detectors will be done in accordance with Ultramar's engineering standards and pursuant to process safety hazard analysis. These additional point source detectors will be installed by the completion of the next scheduled Alky ReVAP turnaround.

5. ***Acid Settler Debris Grid.*** In order to reduce the potential for a release resulting from penetration of the acid unit settler by a projectile, Ultramar will evaluate and design a debris grid to mitigate impacts to the elevated section of the acid settler. The debris grid placement, design and installation will be done in accordance with Ultramar's engineering standards and pursuant to process safety hazard analysis. This debris grid will be designed to prevent the creation of a confined space, to avoid interference with existing HF mitigation systems, to minimize the confinement of flammable vapors, and to continue to provide for free ingress and egress from the unit within the safety and structural limitations of the unit. Within 180 days of the District's acceptance of this proffer, Ultramar shall develop a preliminary engineering design for the debris grid. Absent issues that necessitate delay that are identified at the design phase, the debris

grid will be installed no later than the completion of the next scheduled Alky ReVAP turnaround; however, if issues are identified in the design and engineering phase that preclude installation of the grid during the next scheduled Alky ReVAP turnaround, the grid will be installed no later than completion of the subsequent Alky ReVAP turnaround.

6. ***Acid Settler Riser/Leg Rain Out Barrier/Shroud.*** Ultramar will design, engineer, and install Rain Out Barrier/Shroud systems for the Acid Settler Risers and Legs and the Depropanizer Acid Boots to reduce the momentum of any potential release from these systems and redirect the material downward, thus enhancing rain out and capture by the water mitigation systems. These shroud systems will be similar to that already employed on the Acid Coolers within the unit. Additional barriers or shrouding will be installed on the elevated acid piping that feeds the Settler. This mitigation measure reduces the potential for an offsite release resulting from a compromise to the settler system piping by improving rainout and subsequent capture of any released material by the water mitigation systems. The Rain Out Barrier/Shroud placement, design, and installation will be done in accordance with Ultramar's engineering standards and pursuant to process safety hazard analysis. Preliminary design of the Acid Settler Riser/Leg Rain Out Barrier/Shroud and Depropanizer Acid Boot Rain Out Barrier/Shroud systems will be completed within 180 days of the District's acceptance of this proffer. Absent issues that necessitate delay that are identified at the design and engineering phase, the Acid Settler Riser/Leg Rain Out Barrier/Shroud and Depropanizer Acid Boot Rain Out Barrier/Shroud will be installed no later than the completion of the next scheduled Alky ReVAP turnaround; however, if issues are identified in the design and engineering phase that preclude installation of one or both barrier/shroud systems during the next schedules Alky ReVAP turnaround, the Acid Settler Riser/Leg Rain Out/Barrier System and/or Depropanizer Acid Boot Rain Out Barrier/Shroud shall be installed no later than completion of the subsequent Alky ReVAP turnaround.

It is important to note that the District and Ultramar already have an existing Memorandum of Understanding from 2003 (Agreement), under which the District agreed to refrain from further regulation of HF. Nothing in this letter from Ultramar, nor the District's acceptance or rejection of this proffer, shall supersede or alter the existing Agreement. However, by accepting this proffer, the District and Ultramar will avoid the potential for litigation arising out of the Agreement.

District, Ultramar and other stakeholders have expended almost three years in considering mitigation measures and alternatives. This has taxed the resources of all those involved and resulted in no viable alternatives beyond enhanced mitigation measures described in this letter. We believe there is limited benefit from continuing on this course. Ultramar has a long history of safely operating the Wilmington HF alkylation unit and has remained in compliance with the Agreement.

We have already installed the best mitigation systems available and continuously work to improve them. Now, we stand ready to facilitate the closure of this process by committing publicly to implement even more safety improvements.

Thank you for your consideration of our proposal.

Sincerely,

Mark Phair
VP & General Manager
*Ultramar Inc.*

cc: Richard Walsh, VP & Deputy General Counsel
Elizabeth Bourbon, Sr. Managing Counsel
Scott Folwarkow, Executive Director Governmental Affairs

# Appendix 4 - South Coast AQMD Requests for Quarterly Reports

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

*Office of the Executive Officer*
*Wayne Nastri*
*909.396.2100, fax 909.396.3340*

November 15, 2019

Paul Davis
President Western Region
Torrance Refining Company
3700 W. West 190th Street
Torrance, CA 90504

RE: Implementation Schedule of Voluntary Safety Enhancements

Dear Mr. Davis,

On September 6, 2019, the South Coast Air Quality Management District (South Coast AQMD) Governing Board approved and accepted the voluntary modified hydrogen fluoride (MHF) alkylation unit safety enhancement commitments and control measures as proffered in the Torrance Refining Company (TORC) August 30, 2019 Proffer Letter. The Board Resolution No. 19-19 states that "until the new safety enhancements and control measures are fully implemented by TORC and Ultramar as set forth in their respective Proffer Letters, the South Coast AQMD Executive Officer shall report back to the Refinery Committee annually on the progress of implementation of the new safety enhancements and control measures at the Torrance and Wilmington Refineries."

Beginning January 2020, the South Coast AQMD staff is requesting that TORC provide quarterly updates on the progress of implementing new safety enhancements and control measures in TORC's Proffer Letter. Please provide the implementation schedule for safety enhancements specified in Exhibit A of TORC's Proffer Letter for the Settler Acid Protective Steel Structure, Settler Area Water Mitigation Dome and Curtain, Settler Area Enhanced HF/MHF Detection System, Northern Water Mitigation Monitors, and Fluidized Catalytic Cracking Unit Electrostatic Precipitator Over Pressure Mitigation. The progress report should include status of design, purchase, installation, testing, and operational start date of the Exhibit A safety enhancements. Please also provide a description of any delays or issues that may impact the anticipated completion of safety enhancements in 2021.

In addition, please clarify how TORC plans to explore the feasibility of inherent safety measures of alternative alkylation catalyst technology (e.g., third party evaluation and publicly available report) also mentioned in the proffer letter. As highlighted by the Governing Board at that meeting, if the commitments in the proffer letter are not fulfilled then the South Coast AQMD Governing

Board may decide to pivot back to rule development or to negotiating a Memorandum of Understanding.

If you have any questions please contact me at 909-396-3131, wnastri@aqmd.gov, or Dr. Philip Fine, Deputy Executive Officer, Planning, Rule Development and Area Sources, at 909-396-2239, pfine@aqmd.gov, or Daphne Hsu, Senior Deputy District Counsel, at 909-396-3458, dhsu@aqmd.gov.

Sincerely,

Wayne Nastri
Executive Officer

cc (email): Trecia Canty, Senior Vice President & General Counsel
Darren W. Stroud, Refinery Attorney
Steve Steach, Refinery Manager
Jill Whynot, South Coast AQMD
Philip Fine, South Coast AQMD
Susan Nakamura, South Coast AQMD
Barbara Baird, South Coast AQMD
Daphne Hsu, South Coast AQMD
Michael Krause, South Coast AQMD

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 · www.aqmd.gov

*Office of the Executive Officer*
*Wayne Nastri*
*909.396.2100, fax 909.396.3340*

November 15, 2019

Mark Phair
Vice President & General Manager
Ultramar, Inc., a Valero Company
2402 E. Anaheim
Wilmington, CA 90744

RE: Implementation Schedule of Voluntary Safety Enhancements

Dear Mr. Phair,

On September 6, 2019, the South Coast Air Quality Management District (South Coast AQMD) Governing Board approved and accepted the voluntary modified hydrogen fluoride (MHF) alkylation unit safety enhancement commitments and control measures as proffered in the Ultramar August 30, 2019 Proffer Letter. The Board Resolution No. 19-19 states that "until the new safety enhancements and control measures are fully implemented by Torrance Refining Company and Ultramar as set forth in their respective Proffer Letters, the South Coast AQMD Executive Officer shall report back to the Refinery Committee annually on the progress of implementation of the new safety enhancements and control measures at the Torrance and Wilmington Refineries."

Beginning January 2020, the South Coast AQMD staff is requesting that Ultramar provide quarterly updates on the progress of implementing new safety enhancements and control measures in Ultramar's Proffer Letter. Please provide the implementation schedule for safety enhancements specified in Ultramar's Proffer Letter for the Open Path Perimeter HF Sensors, Flange Guards, Automation of Water Curtain System, Additional Point Source Detectors, Acid Settler Debris Grid, Acid Settler Riser/Leg Rain Out Barrier/Shroud, and Depropanizer Acid Boot Rain Out Barrier/Shroud. The progress report should include status of design, purchase, installation, testing, and operational start date of the safety enhancements. Please also provide a description of any delays or issues that may impact the anticipated completion of safety enhancements in the next scheduled Alky ReVAP turnaround.

In addition, please clarify how Ultramar plans to explore the feasibility of inherent safety measures of alternative alkylation catalyst technology (e.g., third party evaluation and publicly available report) also mentioned in the proffer letter. As highlighted by the Governing Board at that meeting,

if commitments in the proffer letter are not fulfilled then the South Coast AQMD Governing Board may decide to pivot back to rule development or to negotiating a Memorandum of Understanding.

If you have any questions please contact me at 909-396-3131, wnastri@aqmd.gov, or Dr. Philip Fine, Deputy Executive Officer, Planning, Rule Development and Area Sources, at 909-396-2239, pfine@aqmd.gov, or Daphne Hsu, Senior Deputy District Counsel, at 909-396-3458, dhsu@aqmd.gov.

Sincerely,

Wayne Nastri
Executive Officer

cc (email): Richard Walsh, Vice President & Deputy General Counsel
Elizabeth Bourbon, Senior Managing Counsel
Scott Folwarkow, Executive Director Governmental Affairs
Jill Whynot, South Coast AQMD
Philip Fine, South Coast AQMD
Susan Nakamura, South Coast AQMD
Barbara Baird, South Coast AQMD
Daphne Hsu, South Coast AQMD
Michael Krause, South Coast AQMD

Attachment 5 – Torrance Refining Company Quarterly Reports

Torrance Refining Company

**Torrance Refining Company LLC**
3700 W 190th Street
Torrance, CA 90504
**www.torrancerefinery.com**

January 27, 2020

***VIA E-MAIL AND OVERNIGHT MAIL***

Wayne Nastri
Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

**Subject:** ***Torrance Refining Company LLC Proffer Letter Commitments Quarterly Update***

Dear Mr. Nastri,

On behalf of Torrance Refining Company LLC ("TORC"), consistent with our November 25, 2019 letter, and as requested by you in your November 15, 2019 letter, below is the fourth quarter 2019 update regarding the voluntary modified hydrogen fluoride ("MHF") alkylation unit safety enhancement commitments and control measures as proffered TORC's August 30, 2019 Proffer Letter accepted and approved on September 6, 2019 by the South Coast Air Quality Management District ("South Coast AQMD") Governing Board pursuant to Board Resolution No. 19-19 (the "Proffer Letter"). Capitalized terms used in this letter and not otherwise defined shall have the meanings ascribed in the Proffer Letter.

The quarterly update below provides the current status of the design, purchase, installation, testing, and operational start date of the proffered safety enhancements. To the extent known, the update sets forth below the implementation schedule and going forward will advise of any delays or issues that may impact the anticipated completion of safety enhancements in 2021.

| Safety Enhancements | Fourth Quarter 2019 Status |
|---|---|
| Settler Area Protective Steel Structure<br><br>Northern Water Mitigation Monitors<br><br>Fluidized Catalytic Cracking Unit (FCCU) Electrostatic Precipitator (ESP) Over Pressure Mitigation | • Funding approved for Detailed Engineering and Procurement<br>• Detailed engineering in progress<br>• Enhancement currently on schedule for implementation in 2021 |
| Settler Area Water Mitigation Dome and Curtain<br><br>Settler Area Enhanced HF/MHF Detection System | • Funding approved for Detailed Engineering and Procurement<br>• Detailed engineering in progress<br>• Specialty equipment supplier selected<br>• Enhancement currently on schedule for implementation in 2021 |

If you have any questions or require any additional information regarding this quarterly update of the safety enhancements, please do not hesitate to contact me at (310) 212-4500.

Sincerely,

Steve Steach
Refinery Manager

cc: Paul Davis, President, Western Region
Trecia Canty, Senior Vice President & General Counsel
Darren Stroud, Refinery Attorney
Jill Whynot, South Coast AQMD
Philip Fine, South Coast AQMD
Susan Nakamura, South Coast AQMD
Barbara Baird, South Coast AQMD
Daphne Hsu, South Coast AQMD
Michael Krause, South Coast AQMD

Torrance Refining Company LLC
3700 W 190th Street
Torrance, CA 90504
www.torrancerefinery.com

April 7, 2020

***VIA E-MAIL AND OVERNIGHT MAIL***

Wanye Nastri
Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

**Subject:** ***Torrance Refining Company LLC Proffer Letter Commitments Quarterly Update***

Dear Mr. Nastri,

On behalf of Torrance Refining Company LLC ("TORC"), consistent with our November 25, 2019 letter, and as requested by you in your November 15, 2019 letter, below is the first quarter 2020 update regarding the voluntary modified hydrogen fluoride ("MHF") alkylation unit safety enhancement commitments and control measures as proffered TORC's August 30, 2019 Proffer Letter accepted and approved on September 6, 2019 by the South Coast Air Quality Management District ("South Coast AQMD") Governing Board pursuant to Board Resolution No. 19-19 (the "Proffer Letter"). Capitalized terms used in this letter and not otherwise defined shall have the meanings ascribed in the Proffer Letter.

The quarterly update below provides the current status of the design, purchase, installation, testing, and operational start date of the proffered safety enhancements. TORC is closely monitoring Engineering, Construction, and Materials availability in connection with the COVID-19 pandemic, and will notify the South Coast AQMD of any potential impacts that could result in schedule delays.

| Safety Enhancements | First Quarter 2020 Status |
|---|---|
| Settler Area Protective Steel Structure<br><br>Northern Water Mitigation Monitors<br><br>Fluidized Catalytic Cracking Unit (FCCU) Electrostatic Precipitator (ESP) Over Pressure Mitigation | • Funding approved for Detailed Engineering and Procurement<br>• Detailed engineering in progress<br>• Underground verifications for foundation design is in progress<br>• Enhancement currently on schedule for implementation in 2021 |

| Safety Enhancements | First Quarter 2020 Status |
|---|---|
| Settler Area Water Mitigation Dome and Curtain<br><br>Settler Area Enhanced HF/MHF Detection System | • Funding approved for Detailed Engineering and Procurement<br>• Detailed engineering in progress<br>• Underground verifications for piping and electrical design is in progress<br>• Specialty equipment supplier selected<br>• Enhancement currently on schedule for implementation in 2021 |

If you have any questions or require any additional information regarding this quarterly update of the safety enhancements, please do not hesitate to contact me at (310) 212-4500.

Sincerely,

Steve Steach
Refinery Manager

cc: Paul Davis, President, Western Region
Trecia Canty, Senior Vice President & General Counsel
Darren Stroud, Refinery Attorney
Jill Whynot, South Coast AQMD
Philip Fine, South Coast AQMD
Susan Nakamura, South Coast AQMD
Barbara Baird, South Coast AQMD
Daphne Hsu, South Coast AQMD
Michael Krause, South Coast AQMD

Torrance Refining Company

**Torrance Refining Company LLC**
3700 W 190th Street
Torrance, CA 90504
**www.torrancerefinery.com**

July 7, 2020

***VIA E-MAIL AND OVERNIGHT MAIL***

Wayne Nastri
Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

**Subject:** ***Torrance Refining Company LLC Proffer Letter Commitments Quarterly Update***

Dear Mr. Nastri,

On behalf of Torrance Refining Company LLC ("TORC"), consistent with our November 25, 2019 letter, and as requested by you in your November 15, 2019 letter, below is the second quarter 2020 update regarding the voluntary modified hydrogen fluoride ("MHF") alkylation unit safety enhancement commitments and control measures as proffered TORC's August 30, 2019 Proffer Letter accepted and approved on September 6, 2019 by the South Coast Air Quality Management District ("South Coast AQMD") Governing Board pursuant to Board Resolution No. 19-19 (the "Proffer Letter"). Capitalized terms used in this letter and not otherwise defined shall have the meanings ascribed in the Proffer Letter.

The quarterly update below provides the current status of the design, purchase, installation, testing, and operational start date of the proffered safety enhancements. Due to COVID-19 impacts, the Modified Hydrofluoric Acid Alkylation Unit turnaround has now been moved to 2022 along with the Fluid Catalytic Cracker turnaround, however, the safety enhancements are still on schedule to be completed by the end of 2021.

| Safety Enhancements | Second Quarter 2020 Status |
|---|---|
| Settler Area Protective Steel Structure<br><br>Northern Water Mitigation Monitors<br><br>Fluidized Catalytic Cracking Unit (FCCU) Electrostatic Precipitator (ESP) Over Pressure Mitigation | • Funding approved for Detailed Engineering and Procurement<br>• Detailed Engineering in progress<br>• Underground verifications for piping and electrical design in progress<br>• Completed underground verifications for foundation design<br>• Enhancement currently on schedule for implementation in 2021 |
| Settler Area Water Mitigation Dome and Curtain | • Funding approved for Detailed Engineering and Procurement |

| Safety Enhancements | Second Quarter 2020 Status |
|---|---|
| Settler Area Enhanced HF/MHF Detection System | • Detailed Engineering in progress<br>• Underground verifications for piping and electrical design in progress<br>• Completed underground verifications for foundation design<br>• Enhancement currently on schedule for implementation in 2021 |

TORC will continue to closely monitor the Engineering, Construction, and Materials availability in connection with the COVID-19 pandemic, and will notify the South Coast AQMD of any additional impacts that could result in further schedule delays.

If you have any questions or require any additional information regarding this quarterly update of the safety enhancements, please do not hesitate to contact me at (310) 212-4500.

Sincerely,

Steve Steach
Refinery Manager

cc: Paul Davis, President, Western Region
Trecia Canty, Senior Vice President & General Counsel
Darren Stroud, Refinery Attorney
Jill Whynot, South Coast AQMD
Philip Fine, South Coast AQMD
Susan Nakamura, South Coast AQMD
Barbara Baird, South Coast AQMD
Daphne Hsu, South Coast AQMD
Michael Krause, South Coast AQMD

Torrance Refining Company

**Torrance Refining Company LLC**
3700 W 190th Street
Torrance, CA 90504
**www.torrancerefinery.com**

October 6, 2020

***VIA E-MAIL AND OVERNIGHT MAIL***

Wayne Nastri
Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

**Subject:** ***Torrance Refining Company LLC Proffer Letter Commitments Quarterly Update***

Dear Mr. Nastri,

On behalf of Torrance Refining Company LLC ("TORC"), consistent with our November 25, 2019 letter, and as requested by you in your November 15, 2019 letter, below is the third quarter 2020 update regarding the voluntary modified hydrogen fluoride ("MHF") alkylation unit safety enhancement commitments and control measures as proffered in TORC's August 30, 2019 Proffer Letter accepted and approved on September 6, 2019 by the South Coast Air Quality Management District ("South Coast AQMD") Governing Board pursuant to Board Resolution No. 19-19 (the "Proffer Letter"). Capitalized terms used in this letter and not otherwise defined shall have the meanings ascribed in the Proffer Letter.

The quarterly update below provides the current status of the design, purchase, installation, testing, and operational start date of the proffered safety enhancements. As previously disclosed in the second quarter 2020 update, due to COVID-19 impacts, the MHF alkylation unit turnaround has now been moved to 2022 along with the Fluid Catalytic Cracker turnaround. Although the ongoing impact of COVID-19 remains uncertain, as noted in the table below, the safety enhancements are still currently on schedule to be completed by the end of 2021.

| Safety Enhancements | Third Quarter 2020 Status |
|---|---|
| Settler Area Protective Steel Structure<br><br>Northern Water Mitigation Monitors<br><br>Fluidized Catalytic Cracking Unit (FCCU) Electrostatic Precipitator (ESP) Over Pressure Mitigation | • Funding approved for Detailed Engineering and Procurement<br>• Detailed Engineering in progress<br>• Underground verifications for piping and electrical design in progress<br>• Completed underground verifications for foundation design<br>• Enhancement currently on schedule for implementation in 2021 |

| Safety Enhancements | Third Quarter 2020 Status |
|---|---|
| Settler Area Water Mitigation Dome and Curtain<br><br>Settler Area Enhanced HF/MHF Detection System | • Funding approved for Detailed Engineering and Procurement<br>• Detailed Engineering in progress<br>• Underground verifications for piping and electrical design in progress<br>• Completed underground verifications for foundation design<br>• Enhancement currently on schedule for implementation in 2021 |

TORC will continue to closely monitor the Engineering, Construction, and Materials availability in connection with the COVID-19 pandemic, and will notify the South Coast AQMD of any additional impacts that could result in further schedule delays.

If you have any questions or require any additional information regarding this quarterly update of the safety enhancements, please do not hesitate to contact me at (310) 212-4500.

Sincerely,

Steve Steach
Refinery Manager

cc: Paul Davis, President, Western Region
Trecia Canty, Senior Vice President & General Counsel
Darren Stroud, Refinery Attorney
Jill Whynot, South Coast AQMD
Philip Fine, South Coast AQMD
Susan Nakamura, South Coast AQMD
Barbara Baird, South Coast AQMD
Daphne Hsu, South Coast AQMD
Michael Krause, South Coast AQMD

Attachment 6 – Ultramar (Valero Refinery) Quarterly Reports

Valero

January 30, 2020

Mr. Wayne Nastri
Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Dear Mr. Nastri,

In response to your November 15, 2019 request for quarterly updates regarding implementation of the enhanced mitigation measures described in my August 30, 2019 letter to the Hon. Larry McCallon, Chair of the Refinery Committee of the Board of the South Coast Air Quality Management District, Ultramar Inc. (hereafter "Valero") provides the following information.

Valero is actively progressing all aspects of the commitments detailed in our August 30, 2019 Proffer letter and is on track to complete all projects based on the milestones outlined in our letter. These include:

- *Item 1 - Installation of Open Path Perimeter HF Sensors.* Valero committed to install open path detection monitors around the perimeter of the alkylation unit within one year of adoption of the Board's resolution in this matter, i.e., by September 6, 2020. This project has been fully funded and is in the final phase of engineering and construction. All sensors and related electronics have been purchased. Associated construction drawings have been issued and installation is underway. Installation of the associated structures is awaiting permit approval from the City of Los Angeles. The project is on schedule for completion by or before the September 6, 2020 commitment date.
- *Item 2 - Installation of Flange Guards.* Valero committed to install flange guards on each flange in the alkylation unit in main acid service greater than 2 inches in diameter by the completion of the next scheduled turnaround. To date, we have purchased several flange guards for trial use to confirm they meet the objectives. We are on schedule to have all committed flange guards in place by completion of the next scheduled Alky ReVAP turnaround.
- Item 3 - *Automation of Water Curtain System.* Valero committed to automation of the water curtain system upon completion of the next scheduled Alky ReVAP turnaround. Engineering funding was approved in September 2019 for this project. Preliminary engineering design is currently underway. We are on schedule to have this project implemented by completion of the next scheduled Alky ReVAP turnaround.
- Item 4 - *Installation of Additional Point Source Detectors.* In conjunction with the water curtain automation project described above, Valero committed to install additional point source detectors by completion of the next scheduled Alky ReVAP turnaround. As noted above, engineering funding was approved in September 2019, and preliminary engineering design is underway. We are on schedule to have this project implemented by completion of the next scheduled Alky ReVAP turnaround.

**Wilmington Refinery** • Ultramar Inc., a Valero Company
2402 E. Anaheim • Wilmington, CA 90744 • Telephone (562) 491-6877

- Item 5 - *Acid Settler Debris Grid.* Valero committed to develop a preliminary engineering design for a debris grid as described in Valero's August 30, 2019 letter within 180 days of the District's acceptance of Valero's proffer; based on the Board's adoption of Resolution No. 19-19 on September 6, 2019, the debris grid preliminary design is to be completed by March 4, 2020. At this time, preliminary design engineering is underway and is expected to be completed prior to the March 4, 2020 commitment date. No issues have been identified to date in the preliminary design work that would prevent implementation of this project by completion of the next scheduled Alky ReVAP turnaround.
- Item 6 – *Acid Settler Riser/Leg Rain Out Barrier/Shroud.* Valero committed to develop a preliminary engineering design for barrier/shroud systems for the acid settler risers and legs and the depropanizer acid boot, as described in Valero's August 30, 2019 letter, within 180 days of the District's acceptance of Valero's proffer. Based on the Board's adoption of Resolution No. 19-19 on September 6, 2019, the barrier/shroud preliminary engineering designs are to be completed by March 4, 2020. At this time, preliminary design engineering is underway and is expected to be completed prior to the March 4, 2020 commitment date. No issues have been identified to date in the preliminary design work that would prevent implementation of this project by completion of the next scheduled Alky ReVAP turnaround.

In your letter requesting quarterly updates on the status of the enhanced mitigation projects described in our proffer letter, you also asked us to "clarify how Ultramar plans to explore the feasibility of inherent safety measures of alternative alkylation catalyst technology (e.g. third party evaluation and publicly available report) also mentioned in the proffer letter." We think you may have confused our proffer letter with the proffer made by Torrance Refining Company, as our August 30, 2019 letter does not address this topic.

We hope this information is helpful to you. We will provide another update on or before April 30, 2020.

Very truly yours,

Mark Phair
Vice President and General Manager

CC (e-mail): Hon. Dr. William A. Burke, SCAQMD Governing Board Chair
Hon. Mayor Larry McCallon, SCAQMD Governing Board Member/Refinery Committee Chair

Valero

April 29, 2020

Mr. Wayne Nastri
Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Dear Mr. Nastri,

In response to your November 15, 2019 request for quarterly updates regarding implementation of the enhanced mitigation measures described in my August 30, 2019 letter to the Hon. Larry McCallon, Chair of the Refinery Committee of the Board of the South Coast Air Quality Management District, Ultramar Inc. (hereafter "Valero") provides the following update for the second quarter of 2020.

Valero continues to actively progress all aspects of the commitments detailed in our August 30, 2019 Proffer letter and is on track to complete all projects based on the milestones outlined in our letter notwithstanding the COVID-19 pandemic that has developed over recent months. While it is possible that the continuing fallout of the pandemic could lead to material, labor and / or agency approval delays, we are not aware of any specific potential delays at this time. The projects outlined in our letter include:

- *Item 1 - Installation of Open Path Perimeter HF Sensors.* Valero committed to install open path detection monitors around the perimeter of the alkylation unit within one year of adoption of the Board's resolution in this matter, i.e., by September 6, 2020. This project has been fully funded and is in the final phase of engineering and construction, including approval of additional funding since the last update. All sensors and related electronics have been purchased. Additional materials and construction purchase orders have been placed since the January update. Associated construction drawings have been issued and installation is underway. Installation of the associated structures is awaiting approval of a waiver by the California Coastal Commission, which is currently scheduled for approval in a virtual meeting to be held in May (this item was previously scheduled for the Commission's April meeting, but that meeting was cancelled). The project remains on schedule for completion by or before the September 6, 2020 commitment date.
- *Item 2 - Installation of Flange Guards.* Valero committed to install flange guards on each flange in the alkylation unit in main acid service greater than 2 inches in diameter by the completion of the next scheduled turnaround. To date, we have purchased several flange guards for trial use to confirm they meet the objectives. We remain on schedule to have all committed flange guards in place by completion of the next scheduled Alky ReVAP turnaround.
- Item 3 - *Automation of Water Curtain System.* Valero committed to automation of the water curtain system upon completion of the next scheduled Alky ReVAP turnaround. Engineering funding was approved in September 2019 for this project. Preliminary engineering design should be complete in early May, with the next phase of engineering expected to begin by July. We are on schedule to have this project implemented by completion of the next scheduled Alky ReVAP turnaround.
- Item 4 - *Installation of Additional Point Source Detectors.* In conjunction with the water curtain automation project described above, Valero committed to install additional point source detectors by

Valero

completion of the next scheduled Alky ReVAP turnaround. As noted above, engineering funding was approved in September 2019, and preliminary engineering should be complete in early May, with next phase of engineering expected to begin by July. We are on schedule to have this project implemented by completion of the next scheduled Alky ReVAP turnaround.

- Item 5 - *Acid Settler Debris Grid.* Valero committed to develop a preliminary engineering design for a debris grid as described in Valero's August 30, 2019 letter within 180 days of the District's acceptance of Valero's proffer; based on the Board's adoption of Resolution No. 19-19 on September 6, 2019, the debris grid preliminary design is to be completed by March 4, 2020. Preliminary design engineering has been completed, with the results sent to you on March 3, 2020. The next phase of engineering is expected to begin approximately by July. No issues have been identified to date in the preliminary design work that would prevent implementation of this project by completion of the next scheduled Alky ReVAP turnaround.
- Item 6 – *Acid Settler Riser/Leg Rain Out Barrier/Shroud.* Valero committed to develop a preliminary engineering design for barrier/shroud systems for the acid settler risers and legs and the depropanizer acid boot, as described in Valero's August 30, 2019 letter, within 180 days of the District's acceptance of Valero's proffer. Based on the Board's adoption of Resolution No. 19-19 on September 6, 2019, the barrier/shroud preliminary engineering designs are to be completed by March 4, 2020. Preliminary design engineering has been completed, with the results sent to you on March 3, 2020. The next phase of engineering is expected to begin by July. No issues have been identified to date in the preliminary design work that would prevent implementation of this project by completion of the next scheduled Alky ReVAP turnaround.

We hope this information is helpful to you. We will provide another update on or before July 30, 2020.

Very truly yours,

Mark Phair
Vice President and General Manager

CC (e-mail): Hon. Dr. William A. Burke, SCAQMD Governing Board Chair
Hon. Mayor Larry McCallon, SCAQMD Governing Board Member/Refinery Committee Chair

**Wilmington Refinery** • Ultramar Inc., a Valero Company
2402 E. Anaheim • Wilmington, CA 90744 • Telephone (562) 491-6877

Valero

July 30, 2020

Mr. Wayne Nastri
Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Dear Mr. Nastri,

In response to your November 15, 2019 request for quarterly updates regarding implementation of the enhanced mitigation measures described in my August 30, 2019 letter to the Hon. Larry McCallon, Chair of the Refinery Committee of the Board of the South Coast Air Quality Management District, Ultramar Inc. (hereafter "Valero") provides the following update for the third quarter of 2020.

Valero continues to actively progress all aspects of the commitments detailed in our August 30, 2019 Proffer letter and is on track to complete all projects based on the milestones outlined in our letter notwithstanding the COVID-19 pandemic that continues to impact society. While it is possible that the continuing fallout of the pandemic could lead to material, labor and / or agency approval delays, we are not aware of any specific potential delays at this time. The projects outlined in our letter include:

- *Item 1 - Installation of Open Path Perimeter HF Sensors.* Valero committed to install open path detection monitors around the perimeter of the alkylation unit within one year of adoption of the Board's resolution in this matter, i.e., by September 6, 2020. This project has been fully funded and is in the final phase of engineering and construction. All sensors and related electronics have been purchased. Installation of the associated structures has been completed since the last update. The project remains on schedule for completion by or before the September 6, 2020 commitment date.
- *Item 2 - Installation of Flange Guards.* Valero committed to install flange guards on each flange in the alkylation unit in main acid service greater than 2 inches in diameter by the completion of the next scheduled turnaround. To date, we have installed several flange guards for trial use to confirm they meet the objectives. We remain on schedule to have all committed flange guards in place by completion of the next scheduled Alky ReVAP turnaround.
- Item 3 - *Automation of Water Curtain System.* Valero committed to automation of the water curtain system upon completion of the next scheduled Alky ReVAP turnaround. Engineering funding was approved in September 2019 for this project. Preliminary engineering design was completed in May. The refinement engineering phase has been funded and this work is underway. We are on schedule to have this project implemented by completion of the next scheduled Alky ReVAP turnaround.
- Item 4 - *Installation of Additional Point Source Detectors.* In conjunction with the water curtain automation project described above, Valero committed to install additional point source detectors by completion of the next scheduled Alky ReVAP turnaround. As noted above, engineering funding was approved in September 2019, preliminary engineering was completed in May, with refinement engineering underway. We are on schedule to have this project implemented by completion of the next scheduled Alky ReVAP turnaround.

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- Item 5 - *Acid Settler Debris Grid.* Valero committed to develop a preliminary engineering design for a debris grid as described in Valero's August 30, 2019 letter within 180 days of the District's acceptance of Valero's proffer; based on the Board's adoption of Resolution No. 19-19 on September 6, 2019, the debris grid preliminary design is to be completed by March 4, 2020. Preliminary design engineering has been completed, with the results sent to you on March 3, 2020. The refinement phase of engineering was funded and is underway. No issues have been identified to date in the preliminary design work that would prevent implementation of this project by completion of the next scheduled Alky ReVAP turnaround.
- Item 6 – *Acid Settler Riser/Leg Rain Out Barrier/Shroud.* Valero committed to develop a preliminary engineering design for barrier/shroud systems for the acid settler risers and legs and the depropanizer acid boot, as described in Valero's August 30, 2019 letter, within 180 days of the District's acceptance of Valero's proffer. Based on the Board's adoption of Resolution No. 19-19 on September 6, 2019, the barrier/shroud preliminary engineering designs are to be completed by March 4, 2020. Preliminary design engineering has been completed, with the results sent to you on March 3, 2020. The refinement phase of engineering was funded and is underway. No issues have been identified to date in the preliminary design work that would prevent implementation of this project by completion of the next scheduled Alky ReVAP turnaround.

We hope this information is helpful to you. We will provide another update on or before October 30, 2020.

Very truly yours,

Mark Phair
Vice President and General Manager

CC (e-mail): Hon. Dr. William A. Burke, SCAQMD Governing Board Chair
Hon. Mayor Larry McCallon, SCAQMD Governing Board Member/Refinery Committee Chair

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Valero

October 30, 2020

Mr. Wayne Nastri
Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Dear Mr. Nastri,

In response to your November 15, 2019 request for quarterly updates regarding implementation of the enhanced mitigation measures described in my August 30, 2019 letter to the Hon. Larry McCallon, Chair of the Refinery Committee of the Board of the South Coast Air Quality Management District, Ultramar Inc. (hereafter "Valero") provides the following update for the fourth quarter of 2020.

Valero continues to actively progress all aspects of the commitments detailed in our August 30, 2019 Proffer letter and is on track to complete all projects based on the milestones outlined in our letter notwithstanding the COVID-19 pandemic that continues to impact society. While it is possible that the continuing fallout of the pandemic could lead to material, labor and / or agency approval delays, we are not aware of any specific potential delays at this time. The projects outlined in our letter include:

- *Item 1 - Installation of Open Path Perimeter HF Sensors.* Valero committed to install open path detection monitors around the perimeter of the alkylation unit within one year of adoption of the Board's resolution in this matter, i.e., by September 6, 2020. This project has been completed and was fully commissioned by August 28, 2020, as noted in our September 2, 2020 letter.
- *Item 2 - Installation of Flange Guards.* Valero committed to install flange guards on each flange in the alkylation unit in main acid service greater than 2 inches in diameter by the completion of the next scheduled turnaround. To date, we have installed several flange guards for trial use to confirm they meet the objectives. We remain on schedule to have all committed flange guards in place by completion of the next scheduled Alky ReVAP turnaround.
- Item 3 - *Automation of Water Curtain System.* Valero committed to automation of the water curtain system upon completion of the next scheduled Alky ReVAP turnaround. Engineering funding was approved in September 2019 for this project. Preliminary engineering design was completed in May. The refinement engineering phase has been funded and this work is progressing well. We are on schedule to have this project implemented by completion of the next scheduled Alky ReVAP turnaround.
- Item 4 - *Installation of Additional Point Source Detectors.* In conjunction with the water curtain automation project described above, Valero committed to install additional point source detectors by completion of the next scheduled Alky ReVAP turnaround. As noted above, engineering funding was approved in September 2019, preliminary engineering was completed in May, with refinement engineering progressing well. We are on schedule to have this project implemented by completion of the next scheduled Alky ReVAP turnaround.

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- Item 5 - *Acid Settler Debris Grid.* Valero committed to develop a preliminary engineering design for a debris grid as described in Valero's August 30, 2019 letter within 180 days of the District's acceptance of Valero's proffer; based on the Board's adoption of Resolution No. 19-19 on September 6, 2019, the debris grid preliminary design is to be completed by March 4, 2020. Preliminary design engineering has been completed, with the results sent to you on March 3, 2020. The refinement phase of engineering was funded and is progressing well. No issues have been identified to date in the preliminary design work that would prevent implementation of this project by completion of the next scheduled Alky ReVAP turnaround.
- Item 6 – *Acid Settler Riser/Leg Rain Out Barrier/Shroud.* Valero committed to develop a preliminary engineering design for barrier/shroud systems for the acid settler risers and legs and the depropanizer acid boot, as described in Valero's August 30, 2019 letter, within 180 days of the District's acceptance of Valero's proffer. Based on the Board's adoption of Resolution No. 19-19 on September 6, 2019, the barrier/shroud preliminary engineering designs are to be completed by March 4, 2020. Preliminary design engineering has been completed, with the results sent to you on March 3, 2020. The refinement phase of engineering was funded and is progressing well. No issues have been identified to date in the preliminary design work that would prevent implementation of this project by completion of the next scheduled Alky ReVAP turnaround.

We hope this information is helpful to you. We will provide another update on or before January 30, 2021.

Very truly yours,

Mark Phair
Vice President and General Manager

CC (e-mail): Hon. Dr. William A. Burke, SCAQMD Governing Board Chair
Hon. Mayor Larry McCallon, SCAQMD Governing Board Member/Refinery Committee Chair

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