BOARD MEETING DATE: December 7, 2018 AGENDA NO. 23

REPORT: Refinery Committee

SYNOPSIS: The Refinery Committee held a meeting on Saturday, September 22, 2018 in Wilmington regarding an update on the development of Proposed Rule 1410 - Hydrogen Fluoride Storage and Use at Petroleum Refineries. The following is a summary of the meeting.

RECOMMENDED ACTION:
Receive and File.

Clark E. Parker, Sr., Chair
Refinery Committee

PF:SN:ML:MK

Committee Members

Present: Dr. Clark E. Parker, Sr./Chair
Mayor Larry McCallon/Vice Chair
Mayor Ben Benoit
Dr. Joseph Lyou
Mayor Pro Tem Judith Mitchell

Dr. William A. Burke was named an Ad Hoc member of the committee for the purpose of this meeting.

Absent: None

Call to Order

Chairman Parker called the meeting to order at 9:05 a.m.

Welcome/Opening Remarks

Dr. Parker opened the Refinery Committee meeting, stating that the past meetings were challenging, informative and provided the community, as well as the Committee, the opportunity to state publicly their positions related to the usage of modified hydrogen fluoride (MHF) in the refinery alkylation process. Dr. Parker introduced the Committee members and briefly summarized what the Committee asked of staff at the April 28, 2018 Refinery Committee meeting.

Overview
Executive Officer Wayne Nastri provided an overview of the meeting agenda.

Dr. Philip Fine, Deputy Executive Officer/Planning, Rule Development and Area Sources, summarized the Committee's past direction to staff and provided an update on staff's efforts to respond and work with stakeholders since the last Committee meeting. Dr. Fine provided an update on the release of confidential documents concerning MHF, other uses of hydrogen fluoride (HF) in the Basin, staff's approach to mitigation measures, challenges to mitigate a large consequential release of MHF, challenges with treatment to HF exposure, and potential implications of a phase-out.

Dr. Fine concluded his presentation with potential options for the Committee's consideration that included: implementation of enhanced mitigation measures; establishing a performance standard with a phase-out if the performance standard could not be met; and implementation of enhanced mitigation with a phase-out of MHF. Any of the approaches could be implemented through either a rule or memorandum of understanding (MOU).

Mr. Bayron Gilchrist, SCAQMD General Counsel, provided information comparing regulatory and MOU approaches as they relate to CEQA and the public process. Dr. Burke asked if staff can prepare an MOU with conditions that if refineries do not act in accordance with the terms of the MOU then the refinery would automatically be subject to the rule. Mr. Gilchrist responded that it is possible if both parties agreed to such a condition in an agreement. Mayor Pro Tem Mitchell mentioned that conducting CEQA after the MOU could generate duplicative work. Mr. Gilchrist agreed and stated that the same amount of consideration is needed for both an MOU with a simultaneous CEQA document, and an MOU with completion of a CEQA document after signing an MOU. For the question regarding enforceability of an MOU, Mr. Gilchrist suggested that incorporating MOU conditions in the Title V permit is probably the best path to pursue. He added that some of the conditions in the MOU with Valero are not currently incorporated in their Title V permit.

The following guest speakers provided presentations on subject matters requested by the Committee at their previous meeting.

Dr. Kenneth Hudnut, U.S. Geological Survey, gave a presentation on the potential earthquake risk for the affected Torrance Refining Company (TORC) and Valero Wilmington Refinery. Mayor Pro Tem Mitchell asked what might be expected in this region if there is an earthquake on the San Andreas Fault. Dr. Hudnut answered that an earthquake on the San Andreas Fault can result in damages to refinery equipment such as piping and tanks.

Dr. Ronald Koopman, retired Manager and Senior Scientist at Lawrence Livermore National Laboratory and currently the Principal of Hazard Analysis Consulting, provided a presentation on HF dispersion and water mitigation testing. Dr. Koopman shared the background, instrument setup, and key results of the 1986 Nevada Goldfish field experiments, as well as findings from testing of water mitigation in the Hawk Study. Dr. Parker asked how to control a large release (e.g., 500 gallons per minute) of HF. Dr. Koopman answered that it depends on the design of the water mitigation systems, but enough water has to be applied to HF until it is completely contained. Dr. Parker also asked whether MHF with six percent of the additive acts the same as pure HF. Dr. Koopman stated that six percent of the additive would have a very small effect on HF. Dr. Burke asked about the number of release points in the Goldfish Study, and Dr. Koopman explained the release of HF was from a single point.

Mr. John Cornwell of Quest Consultants provided a presentation on the previous testing of HF/MHF and consideration for additional MHF testing. Mr. Cornwell emphasized that key parameters (temperature, pressure, and composition of chemicals) for an alkylation acid settler should be reflected in the MHF testing, stating that the past Mobil/Phillips MHF testing did not cover a full range of operating conditions currently in place at these refineries. Dr. Parker inquired if the percent of additive in MHF can indicate the percent of rainout of HF. Mr. Cornwell responded that he is not aware of any published studies revealing that relationship but that it could be tested. In addition, Mr. Cornwell added there are laboratory tests that are not publicly available. Mr. Cornwell also explained that six percent additive by weight is equal to one percent by mole, which would have little effect on HF.

The last presentation was provided by Mr. Michael Mastrangelo, Program Director of Institutional Preparedness at the University of Texas Medical Branch (UTMB), regarding developing HF release preparedness and response, challenges to treating HF exposures, medical countermeasures using calcium gluconate, and concerns that calcium gluconate is on the national shortage list of medications. Mayor Pro Tem Mitchell asked why calcium gluconate is in short supply. Mr. Mastrangelo stated that calcium gluconate is a generic drug, demand is low, and there are not many manufacturers. Dr. Lyou asked staff whether local hospitals and emergency responders have a comparable level of preparedness and training. Ms. Nakamura, Assistant Deputy Executive Officer/Planning, Rule Development and Area Sources, responded that staff contacted the Los Angeles County Preparedness Team who currently has 500 single-treatment vials of calcium gluconate, which can treat about 40 patients if significant inhalation exposure were to occur. By contrast, Texas UTMB has 3,000 vials.

Public Comment
Approximately 70 speakers, including representatives of refineries and the public, provided comments.

Mr. Darren Stroud of TORC spoke on behalf of over 200 refinery employees, business partners and allied groups. Mr. Stroud commented that TORC would like to meet with the Committee in the near future to respond to the information presented by the outside experts. Mr. Stroud commented that TORC can mitigate and contain a large release from the alkylation unit, the proposed safety enhancements will prevent a large off-site release, and that there are various ways to do an MOU without CEQA, making it contractually agreeable and enforceable. Mr. Stroud commented that timing is critical as TORC plans to complete their safety enhancement projects by 2021 during their next turnaround.

Mr. Adam Webb of TORC explained that their existing safety systems are designed to effectively respond to minor and major releases in the MHF alkylation unit. Mr. Webb explained that TORC is now proposing future enhancements, including additional barriers, detectors, and water systems around high acid volumes in the unit to provide protection from external impacts and to promote MHF rainout in the event of release.

Dr. Sally Hayati, president of Torrance Refinery Action Alliance (TRAA) reminded the Committee of the 1984 Union Carbide Bhopal accident for which the plant was designed to be failsafe, with multiple layers of mitigation (e.g., water curtain, storage underground, etc.). All the mitigation measures failed and as a result, 25,000 people died and 500,000 people were permanently injured. Dr. Hayati commented that one additive molecule to 99 HF molecules superheated in the settler tank will flash. Ten million people reside in the 1,330 square miles of combined HF hazard zone.

Following these comments, the general public, including TRAA members, residents and former and current union members, provided testimony on staff recommendations. Some key comments included:

- MHF is not safe. If it is, why would Honeywell not publicize the test results;
- Mitigation does not work. Water would have to be directed at the right location, right amount, right dispersion rate, etc.;
- Schools, communities and hospitals are not prepared for a disaster like an HF release. If an earthquake happens, the challenges would be compounded;
- Support for creating and implementing an MOU that delivers additional safety without jeopardizing the operation of refineries;
- A 2017 U.S. EPA report found that the TORC refinery (i.e., TORC) was not adequately maintaining or testing the safety system they have. The refineries should put safety and lives over profit;

- Safety is the first priority for industry and it is important not to underestimate the amount of safety engineering and safeguards that go into refineries on a daily basis;
- Proceed with an MOU with enhanced safety features and good faith negotiations;
- Potential closure of these refineries will affect families, jobs, local economy, the Southern California gasoline supply
- Net profit in 2017 was $430 million for TORC and $2.6 billion for Valero;
- Conversion to safer technology does not have to cost jobs; it may reduce profits.

The public testimony ended with comments from Mr. Rich Walsh of Valero. Mr. Walsh stated that the water mitigation studies were incorporated into their current mitigation system. They designed their mitigation with the ability to go up to a 60:1 water to HF ratio to achieve 90 to 95 percent efficiency, if needed. Mr. Walsh emphasized Valero has multiple layers of water mitigation, added redundancy for their system, and has been designed to withstand earthquakes. Valero had an independent review on a catastrophic scenario and the report will be provided to staff. Mr. Walsh emphasized, however, nothing is absolutely safe. "Failsafe" is designed to be safe even if it fails. They can never guarantee "failsafe," but it was designed to be safe.

Below is the list of speakers who provided public comments (names and organizations are listed based on information provided on the submitted speaker card at the Committee meeting).

1. Isabel Alvarenga, Communities for a Better Environment
2. Kendal Asunan, L.A. Area Chamber of Commerce
3. Ed Barreras, TRAA
4. Linda Bassett, United Teachers Los Angeles
5. Gary Bernell
6. Timothy Beyer, TRAA
7. Ulrich Blaettler
8. David Boule, TRAA
9. Marnie Brimmer, Future Ports
10. Marietta Buzga
11. Beatriz Carrillo, Wilmington Youth
12. Sandra Cartier
13. Melanie Cohen, TRAA
14. Maria Coronado, Carpenters Local 661
15. Carlos Cruz, Carpenters Local 562
16. Yolanda De La Torre
17. Steve Dillow
18. Donna Duperron, Torrance Area Chamber of Commerce
37. Dr. Lovy H. Ebro
38. David Junco, Fluor Corp.
39. Lenore Landis
40. Ray Lawson, SWRCC
41. Ed Legler, SBCC
42. Daria Lee
43. Alejandra Linares
44. Catherine Luciano
45. Mary Matson
46. Jesse N. Marquez
47. Bridget McCann, WSPA
48. Ron Miller, LA/OC Building
49. Daniel Perez Miranda, CBE
50. Brandon Molino, CBE
51. Dr. Dorothy Moore, TRAA
52. Eric Nakano
53. John Pang, United Way
54. Jose Perez
55. David Poster
56. Rebekah Potter
57. Roger Potter

19. Lecibel Escobar, Communities for a Better Environment
20. Jim Eninger, TRAA
21. Dr. Genghmun Eng
22. Mark Friedman
23. Ruth Gabriel
24. EL Garcia
25. Florence Gharibian, Del Amo Action Committee
26. Amy Grat, Wilmington Chamber of Commerce
27. Steve Goldsmith, TRAA
28. Art Gonzalez, Communities for a Better Environment
29. Janet Gunter, San Pedro Peninsula Homeowners United
30. John Hanna, Southwest Carpenters
31. Magali Sanchez-Hall
32. David Hannum. TRAA
33. Sally Hayati, TRAA
34. Judy Herman, TRAA
35. Clifford Heise
36. Donna Heise, TRAA
58. Bill Reynolds, TRAA
59. Alicia Rivera, CBE
60. Zaragoza Robles
61. Mark Rodriguez
62. Al Sattler, Sierra Club
63. Maria Sanchez
64. Katherine Schryver
65. Ardenia Sedio
66. Darren Stroud, Torrance Refining Company
67. Elise Swanson, San Pedro Chamber of Commerce
68. Cheryl Tchir, TRAA
69. Deon Watson, Local 11 IBEW
70. Sarah Wiltfong, BizFed
71. Sandra Viera, Torrance Teachers Association
72. Rich Walsh, Valero
73. Adam Webb, Torrance Refining Company

Public testimony was followed by comments from the Refinery Committee members.

Dr. Lyou recalled a very recent flare event from a refinery near his residence which resulted in schools sheltering in place, and this event brought to mind concerns about the safety of the people who live close to refineries. He mentioned a cyber attack against a refinery in Saudi Arabia in August 2017, concluding that there are things a refinery can control and protect against and there are things that are beyond a refinery's control. Dr. Lyou was very appreciative of the seriousness that the refineries take regarding their responsibility to protect themselves, workers, and community and the work they have done. At the same time, he emphasized that just because nothing disastrous has happened yet does not mean it will not. Accidents do happen such as the 2015 ExxonMobil explosion. Due to the speed that HF/MHF can move and the dense population nearby, Dr. Lyou supports a phase-out of MHF at these refineries and to move forward with the staff option to implement enhanced mitigation measures and phase-out MHF. He does not believe more testing is needed. He stressed that a phase-out should be crafted such that it does not threaten jobs and workers. He was not sure if sulfuric acid would be the best choice for the community because of increased traffic from acid truck deliveries, and suggested that staff should bring that discussion to the full Board. Dr. Lyou was not fully supportive of a performance standard because he believes there is enough information to support that accidents can happen and the consequences could be disastrous. He also suggested establishing a timeline, either 4–6 years or 10–12 years, for getting this done.

Mayor Pro Tem Mitchell commented that the SCAQMD must make a decision based on good science, and the risk of an HF release is too great to bear, much less manage. With a planned phase-out of MHF, she said it can be implemented in such a way to minimize the impacts. There will be a lot of jobs created during a phase-out. She understood the concern regarding jobs and the economy, but believes our highest priority is public health and safety. She supported rulemaking and a phase-out of MHF, with consideration of what timeline will work best in light of current availability of technologies. Ms. Mitchell concurred sulfuric acid is the only viable substitution we have now, but not the best solution. She stated that time is of the essence, although she would consider new promising alkylation technologies in the future. She suggested staff proceed with rulemaking and continue working with stakeholders.

Mayor McCallon noted that HF and MHF are very dangerous chemicals; however, people deal with dangerous things every day. He said that it is important to know how to mitigate those dangers and do the best we can with those mitigations. He noted that TORC and Valero indicated they are doing whatever is necessary and they will need to increase their mitigation efforts. Mayor McCallon believes it is important for the Southern California economy and the State of California that we not put refineries in a position of potentially shutting down, even for a short period of time. He is in favor of the MOU approach and is not in favor of phasing out MHF.

Mayor Benoit commented that although no system is perfect, he believes engineering and design will make the system as safe as possible and supports keeping the refineries here by creating an MOU and ensuring safe use of MHF. He stated that the goal of the Board is to clean the air and a switch from MHF to sulfuric acid will add air pollution by adding trucks to transport sulfuric acid. He noted that gasoline is the primary source of fuel for citizens living in Riverside County and added costs would be too much. Mayor Benoit emphasized the importance of balance and believes that balance can be achieved with an MOU, along with proper engineering to mitigate hazards.

Dr. Burke instructed staff to gather more information and to continue researching this matter.

Dr. Parker again expressed his disappointment that ExxonMobil has taken the position not to publicly release the results of MHF research. The MHF studies that he has seen would not address the concentration of MHF and additives being used at the refineries today. Dr. Parker commented that it is agreed that water mitigation is effective for small leaks, but there is a disagreement on how much water it would take to mitigate a large release. Dr. Parker supports allowing for the information gathering to continue as Dr. Burke suggested, but stated there is no doubt that both HF and MHF have a great risk. Absent credible scientific evidence, he proposed that staff develop a rulemaking schedule and bring a proposed rule back to the Board for consideration no later than May 2019, and continue with the possibility of an MOU. Dr. Parker recommended that

staff move forward with CEQA as part of the general public process. A proposed rule will state all the mitigation measures that are required to take place in a reasonable timeframe, but if mitigation cannot be implemented in a reasonable timeframe the proposed rule will include an HF phase-out. In the meantime, Honeywell, ExxonMobil and all the entities that control the information have time to provide information. Small amounts of an MHF release can be controlled, but it seems that a large release of MHF, as concluded in the Nevada Goldfish test, cannot be controlled. Dr. Parker suggested that staff bring this information, along with CEQA, back to the Board for the ultimate decision making.

Dr. Burke wanted to make sure that as staff prepares the rule, they also continue to seek information and advice on the development of an MOU when or if new information is made available.

Mr. Nastri stated that the rule could allow flexibility to pivot to an MOU process. Staff will work to bring the information to the full Board no later than May 2019 and report back to the Board sooner for a full briefing.

The meeting was adjourned at approximately 3:45 p.m.

Attachments
Presentations for the Refinery Committee meeting have been posted online and can be accessed from the following webpage: http://www.aqmd.gov/home/news-events/meeting-agendas-minutes/agenda?title=refinery-committee-meeting--september-22-2018