

BOARD MEETING DATE: May 5, 2017

AGENDA NO. 21

REPORT: Refinery Committee

SYNOPSIS: The Refinery Committee met Saturday, April 1, 2017 and Saturday, April 8, 2017 for an Investigative Hearing held at the Torrance Marriott Hotel into matters concerning the Torrance Refinery. Following is a summary of those meetings.

RECOMMENDED ACTION:
Receive and File

Clark E. Parker, Sr., Chair
Refinery Committee

PMF:SN:MK:CL

APRIL 1, 2017

Attendance

Dr. Clark E. Parker, Sr., Dr. Joseph Lyou and Councilmember Judith Mitchell were in attendance. Mayor Pro Tem Benoit was absent due to a conflict with his schedule. Dr. William Burke was named an Ad Hoc member of the committee for purposes of this meeting.

Welcome/Opening Remarks

Dr. Burke said he was motivated to conduct this hearing when he heard about the February 18, 2015 explosion at the then-ExxonMobil, (now- Torrance Refining Company (TRC) refinery, especially in light of government's responsibility for ensuring that people feel safe in their homes.

Dr. Parker then provided a recent timeline of events that occurred at the Torrance Refinery as well as a description of this investigative hearing that will involve panel discussions to learn about actions that are currently being taken or could be taken to make the refinery safer, and receive public comments.

Overview

SCAQMD Executive Officer Wayne Nastri presented an overview of the TRC refinery capacity, ownership, location, and recent history regarding the 2015 explosion and 24 unplanned flaring events resulting in high SO_x emissions. Dr. Philip Fine, SCAQMD Deputy Executive Officer, highlighted the upcoming four SCAQMD proposed rules or rule amendments affecting refineries that will address flaring, fence-line and community monitoring, the use of hydrogen fluoride (HF) and NO_x RECLAIM. Dr. Fine also noted the opportunities for public information and input during the rulemaking process including working group meetings, public workshops, commenting opportunities, and providing material online.

Panel Discussions

Elected Officials

The first panel of elected officials was comprised of Assemblymember Al Muratsuchi, City of Torrance Mayor Patrick Furey and Los Angeles County Supervisor Janice Hahn. Assemblymember Muratsuchi outlined his five pending legislative bills including requirements to phase out HF, to establish a community alert system, to install air quality monitors, to increase inspections, and the continuation of a task force. These bills were introduced in response to what he viewed as a community in a “crisis of confidence” with TRC, but he personally did not want to see the refinery shut down. Mayor Furey read a Resolution recently adopted by the Torrance City Council that supports the efforts of other government agencies in ensuring the safety of the TRC refinery. Supervisor Hahn recognized the mounting concern in the community surrounding the refinery and supports a ban on HF and modified HF (MHF), noting its usage occurs in only two refineries in California that are both in her district. She maintained that phasing out the use of HF was not a matter of “if, but when and how.” She emphasized the importance of exploring and utilizing safer alternatives to HF for the protection of the community and the workers who need to keep their good jobs.

State Agency Representatives

The second panel of state agency representatives included Paul Penn, Emergency Management & Refinery Safety Program Manager at CalEPA and Michael Benjamin, Division Chief from CARB’s Monitoring Division. Both panelists gave presentations on projects and programs in Northern California that could provide lessons learned on how to address concerns with the TRC refinery. Mr. Penn described the multi-agency efforts of the Governor’s Interagency Refinery Task Force, which is working to improve safety and community outreach through multiple coordinated efforts. Agencies are reviewing regulations and proposing changes to improve safety. Mr. Benjamin explained state-wide efforts to assess refineries and suggested three areas of potential improvements: to collect fence-line emissions data in real time, provide public access to the information, and employ enhanced dispersion modeling. Councilmember Mitchell inquired as to the mechanisms to implement community outreach for

emergency preparedness planning. Mr. Penn suggested holding safety forums that are hosted by a number of government agencies, such as CalFire and local air districts, to prepare the community for emergencies. Dr. Parker wanted to know if CalEPA has any safety rules or measures for HF; Mr. Penn responded that they do not.

Federal Agency Representative

The third panelist was Daniel Meer, U.S. EPA Assistant Director, Superfund Division. Mr. Meer discussed the preliminary findings from recent inspections of TRC refinery that were compiled into a formal letter released to the public. U.S. EPA concluded a worst-case scenario modeling for off-site toxic impacts would not meet regulatory requirements, and made initial findings of deficient operating procedures, operating without safeguards, and deficiencies in equipment not corrected in a timely manner. He noted that these findings are preliminary and U.S. EPA is early in the process. Dr. Parker inquired about the concrete waste pit that did not have the required permit from the Department of Toxic Substances Control (DTSC). Councilmember Mitchell was concerned about the deficiencies with the safety equipment and how those issues would be handled. U.S. EPA found fault with valve equipment that was designed to mitigate any HF releases as well as staff not following procedures. Mr. Meer could not provide a timeline because the U.S. EPA process involves a response from the refinery as to the immediate steps to correct the deficiencies, assuming the refinery agrees with the findings. Councilmember Mitchell asked to be kept informed as to the actions taken in response to the findings, in case any further action needs to be taken by the SCAQMD Board. She also highlighted the finding that the refinery lacked adequate oversight and questioned how U.S. EPA resolves something that is not equipment or a measurement. Mr. Meer noted the new TRC management seemed to not be clear as to how the 'chain of command' would work, but believed it could be resolved once U.S. EPA has a better understanding how their management structure functions. Dr. Burke needed clarification on the U.S. EPA process and was concerned the findings released to the public are preliminary. Mr. Meer emphasized that their process allows the refinery to respond and possibly provide more information that may reverse or alter the original finding. Dr. Lyou requested that staff inquire with DTSC as to the status of the waste pit permit, and said he was alarmed by the U.S. EPA report. He questioned how the TRC refinery compared to other facilities U.S. EPA inspects. On a scale of 1-to 10, Mr. Meer identified the facility in the 5-7 range based on the findings, but held hope that TRC staff wants to have a safe environment. Dr. Lyou understands the U.S. EPA process but encouraged final action to be taken as soon as possible knowing that the SCAQMD is moving quickly to rulemaking. Mr. Meer noted that their inspection process does not involve a formal public process but comments on the letter can be submitted to U.S. EPA.

Air Districts

The fourth panel was comprised of Bay Area AQMD Enforcement Director Wayne Kino, and SCAQMD Deputy Executive Officer Laki Tisopulos. Mr. Kino outlined lessons learned from the 2012 Chevron Refinery crude unit fire, which was due to pipe corrosion, as an example of what an air district can do to address potential refinery incidents. Programs that can help prevent major refinery incidents include rule development, enforcement and inspections, and violation settlement agreements.

Dr. Tisopulos discussed the independent study done by Norton Engineering that evaluated commercially available options for replacing current MHF Alkylation units including sulfuric acid, solid acid, and ionic liquid. He highlighted the characteristics and cost of each alkylation process, the safety measures to detect leaks of HF or MHF, the significant potential increase of truck trips for supply of sulfuric acid compared to the more efficient HF, and the promising new technologies. Councilmember Mitchell wanted to know if there would be ongoing costs for solid acid since the catalyst was precious metal-based. While not much is known about the new technology, it is anticipated the catalyst would have to be replaced every 4-5 years, but that the precious metals could be recycled and reused once cleaned. Ionic liquid technology does not require precious metals but would also have to be replaced periodically.

Transitioning from HF to Other Alkylation Technologies - A UK Example

Glyn Jenkins, a refinery consultant, presented information for the fifth panel. Mr. Jenkins discussed the electrical reliability needed for a refinery, a UK refinery that converted from HF to sulfuric acid and solid acid alkylation, and an itemization of the reasons for the past 92 breakdowns or shutdowns at the refinery. Dr. Parker wanted to know about the location of petroleum refineries in urban areas. While there are global refineries in urban areas, the two located in the L.A. metropolitan area are unique because of the use of HF near a high-density population. The danger of HF is higher as it attacks calcium and bones while sulfuric acid tends to just burn the skin. Councilmember Mitchell wanted to know if the solid acid conversion from HF was successful, which is the reason the facility is converting the sulfuric acid alkylation to solid acid. In addition, the UK refinery's solid acid alkylation unit produces 26,000 barrels per day (bpd), similar to the TRC refinery's MHF alkylation unit at 25,000 bpd. Mr. Jenkins misunderstood the question, which was clarified by Mr. Natri after lunch. The response is that a number of refineries in the UK were considering switching from HF to other alkylation technologies. One UK refinery has already switched from HF to other alkylation technologies. Dr. Lyou sought to understand why the refinery representatives claim that solid acid alkylation has not been done before, which seems to be contradictory to the UK refinery. Dr. Parker asked if the conversion to solid acid would cost approximately \$125 million, but the only information Mr. Jenkins had was the cost at the UK refinery at \$250 million. Councilmember Mitchell wanted to know if Mr. Jenkins would know how much it could cost TRC to convert from HF to solid acid but he could not provide an estimate at this time. Dr. Burke mentioned that both HF and

sulfuric acid are not great options. Councilmember Mitchell differentiated the two acids since HF vaporizes upon release and travels long distances where sulfuric acid is likely to stay in one place. Dr. Tisopulos noted the solid acid and ionic liquid technologies do not have the same safety and hazard risk impacts compared to the other acids. Information on the cost of the new technologies are limited.

Local Agency Representatives

The sixth panel was comprised of Torrance Fire Chief Martin Serna and L.A. County Fire Chief Bill Jones. Chief Serna believes the refinery workers are highly trained to respond to incidents, but is disheartened with “misinformation” that generates fear in the community. He is encouraged by the proactive solutions being generated by other government agencies. Chief Serna noted there have been no off-site impacts with MHF in over 25 years and his team has worked hard to educate the public as to the safety systems in place, albeit he was unable to discuss the MHF additive due to it being proprietary information as agreed to in the Consent Decree. He intends on requiring a hazard analysis of the refinery with a focus on safer technologies. Top priorities are life safety, environmental protection and property conservation. Dr. Parker sought clarity as to the proprietary information in the Decree that was signed by the City of Torrance and Mobil refinery. Chief Serna announced that TRC and the maker of the additive are releasing a report that will provide more detailed information with regards to the makeup of MHF and its effectiveness.

Chief Jones described the Certified Unified Program Agency (CUPA) that enables a facility under one permit to be regulated for hazardous waste, storage tanks, hazardous material plans and accidental releases. Preventative measures are the priority. There are eight CUPAs in L.A. County that work closely with the refineries and local cities. Chairman Parker questioned why the refinery did not have a permit for hazardous waste material storage as mentioned earlier and Chief Jones clarified that his agency issues CUPA permits, in which U. S. EPA does not get involved. Dr. Burke complimented the work of fire departments for keeping their communities safe.

PBF Refinery

The seventh panel included representatives from the TRC refinery: Western Region President Jeffrey Dill, Refinery Manager Steven Steach, United Steelworkers Secretary/Treasurer David Campbell, and Building and Construction Trades Council Representative Chris Hannon. Mr. Dill said he recognized that refinery performance has to improve for worker and community safety, and TRC is working as expeditiously as possible to correct issues such as electrical reliability power. The EPA findings are preliminary and did not include information that was not available during the time of the inspections which he believes will clear up some of the findings. The unpermitted hazardous waste pit is actually a holding basin before pumping into a permanent tank, so any permit requirements will be cleared up with EPA in their responses. He stated that he is not aware of any other US conversions from HF to a different type of

alkylation but welcomes any information regarding conversions if available. Refineries in the Bay Area using sulfuric acid as the catalyst started their operations using sulfuric acid and did not convert from HF. Conversion by January 1, 2020 is just not possible when considering the need to engineer, design, procure, and permit a conversion. TRC did not agree with the equipment replacement, cost, and timeline assumptions in the Norton Engineering report. He said they have engaged with the unions and are the only refinery in California to sign an agreement with the building trades. If any worker feels unsafe or uncertain of a task, the job can be stopped to reassess. Mr. Steach discussed how seriously the workers implement safety measures at the refinery and compared the low injury frequencies (2015) to other workers in different industries such as police, fire and hospitals. He discussed the operating events that have occurred since acquiring the refinery from ExxonMobil such as flaring, fires and electrical shutdowns. Mr. Campbell encouraged emphasizing prevention over control. He also believed the cost to convert to sulfuric acid would be five times more than presented in the Norton study. Mr. Hannon emphasized the high level of training with the workforce, how commonly HF is used in a variety of products, and how communities are adversely impacted if industry leaves the area and jobs are lost. Mr. Dill outlined the TRC plans to further improve the safety of MHF by providing a direct signal from the sensors to the Torrance Fire Department, changing the water spray system, hiring a risk evaluation expert, and conducting training for the employees. He stressed that TRC provides a positive economic benefit to the region and community engagement.

Dr. Parker asked about backup electrical supply. Mr. Dill described the backup battery power available for critical safety devices and there is also 40 megawatts (MW) of generation capacity that can assist in keeping critical equipment operating. He stated that they are working with Southern California Edison (SCE) to address “power dips” before being forced to flare, and hooking up directly to the SCE system to ensure electrical reliability. If there is a loss of power, the backup supply could assist with some units in a few seconds but would need to begin to depressurize and flare since it is unable to power all equipment. Councilmember Mitchell asked about the timeline to hook up to the SCE system and TRC is currently in the permitting stage so he estimated another 2 -2½ years before operation. She also asked about how the refinery handles the maintenance of the equipment. Mr. Dill noted that TRC acquired the refinery in July and the EPA inspection was in November, so they are beginning to prioritize the changes needed to be made that will be led by a new maintenance manager. Mr. Steach viewed their maintenance approach as half preventative and half reactive, but their budget for maintenance is similar to other refineries. The inspection frequency varies depending on the equipment. Councilmember Mitchell was concerned that the equipment integrity could have been a cause for the recent fires. Mr. Steach responded that the bearing failure is rare, could not have been predicted, and there was no pre-warning. Mr. Dill stated they were reviewing all pumps to ensure no failure. Dr. Lyou wanted to know when TRC planned to respond to U.S. EPA’s findings. Mr. Dill stated that they planned to respond quickly and some of the issues have already been resolved.

Dr. Lyou encouraged TRC to consider an alternative to HF, MHF and sulfuric acid, and to be innovative. Mr. Dill echoed an earlier comment that the “how and when” is what needs to be answered and plans to meet with Honeywell regarding the new technology, but asked that it be recognized that TRC is not a research and development company. Dr. Lyou would like to see any confidential research information be released so it can be determined if it is indeed viable for the TRC refinery. He asked about the recently repaired backup 40 MW turbine that is partly back in operation. Dr. Burke suggested reaching out to Honeywell to garner more information about the new technology. Dr. Parker concluded by noting the importance of a backup power system for a refinery.

Community Perspective

The eighth panel provided the community perspective from Dr. Sally Hayati, President of the Torrance Refinery Action Alliance (TRAA), Catherine Leys and Maureen Mauk, co-founders of Families Lobbying Against Refinery Exposures (FLARE). Dr. Hayati acknowledged that refineries pose inherent dangers and accidents do happen. She raised concern with the Consent Decree Safety Advisor who claimed the additive in the MHF caused the unit to fail, thus approving a reformulation of the ratio of additive to HF from 50-50 (in 1990) to 10-90 (in 1998), or 98 percent of HF by molecule count. An independent study conducted in Nevada found 100 percent of the release becomes airborne in a ground-hugging HF aerosol cloud when equipment temperatures reach 95 degrees Fahrenheit at 100 psi. The distance of the plume is dependent on the amount of the HF released and direction is wind dependent. She provided local scenarios based on different amounts of HF released and the percent of safety mechanism effectiveness. Ms. Leys provided a detailed overview of recent events at the Refinery and Ms. Mauk opined that sulfuric acid should be used and is willing to accept those consequences. She supports more air quality monitoring data and showed a video of various flare events at the refinery.

Public Comment

The following 25 speakers provided public comment on April 1, 2017. The speakers have been grouped into general categories of similar comments and in the order in which they spoke.

NADIA LEVIN
CLIFF HEISE
BILL REYNOLDS
CRAIG KESSLER
ANTONIE CHURG
ELAINE WILSON
GERGHUNUN ENG
CONNIE SULLIVAN
GERRY O'CONNOR
ULRICH BLAETTER
STEVEN GOLDSMITH
ROBBIE GLEICHMAN

The above Torrance/South Bay residents and scientists expressed concern with potential HF releases and the impact to nearby communities, support a ban of HF/MHF, and question the effectiveness of modified HF as a mitigation method to prevent the formation of a dangerous vapor cloud. Mr. Heise asserted that HF acid is much more dangerous than sulfuric acid and the concern is heightened due to the high quantity of HF stored on-site, which increases potential consequences. Mr. Reynolds supported a ban on MHF but wants to retain the jobs. Mr. Kessler agreed with Dr. Burke who is interested in knowing whether modifying HF actually works or not, and that substantial evidence is not proof. Ms. Wilson provided documents showing outside investment in the refinery, so he did not believe the statements that enforcing a ban will force the refinery to shut down. Mr. Eng suggested additional action such as regulating hydrogen cyanide (HCN), requiring a fire extinguishing system and adopting a rule similar to one in the Bay Area. Ms. Sullivan said she had learned that safer alternatives to HF are available and those alternatives reduce insurance premiums. Mr. O'Connor and Mr. Blaetter were concerned about the uncertainty as to what to do if there is an accidental release. In addition, Mr. Blaetter highlighted that software glitches, power outages, and fires are taking place under typical circumstances, but no one is addressing consequences from earthquakes, terrorist attacks, or cyber-attacks. Mr. Gleichman was concerned that the Torrance Fire Chief is relying on the proprietary information that cannot be peer reviewed or replicated as evidence that MHF is effective.

MICHAEL PATTERSON
JOAQUIN SANTOS
STEVEN MACALLER
DANIEL BANAS
ANDREW MAYORGA
ALEX LAFARGA
LYDIA GRINN
STEVEN MENDOZA
BRITNEY ROMAN
JULIE BOFINGER
JOEL THURWACHTER
VALERIE TSE
JULIAN JIMENEZ

The above union representatives and refinery workers expressed support for the refinery because they believe TRC makes safety a priority, they have been proactive in correcting what was wrong with the refinery, and there is trust amongst the co-workers to do the right thing when incidents occur. They also noted there are effective safety mechanisms (e.g., barriers, water cannons) in place at the refinery to mitigate the risk. The speakers did not support an HF ban, want to keep the refinery in business, and retain good jobs. They also requested that the normal course of action in the upcoming SCAQMD rulemaking process be followed. Mr. MacAller, Ms. Grinn, and Ms. Roman highlighted the philanthropic contributions by TRC. Mr. LaFarga added a ban would require planning and execution and this process seems like execution without a plan.

The meeting was adjourned at approximately 4:15 p.m, but was continued to the following Saturday to accommodate the remaining public speakers that had submitted a Request to Speak card. In addition to verbal comments, the numerous emails received between April 1 and April 8 were provided to the Committee members.

APRIL 8, 2017

The continued meeting of the Refinery Committee reconvened at 9 a.m. on April 8, 2017 at the Torrance City Council Chambers to conduct an investigative hearing into matters concerning the Torrance Refinery.

Attendance

Dr. Clark E. Parker, Sr., and Dr. Joseph Lyou were in attendance; however, Dr. Lyou was only able to stay until 10:15 a.m. Councilmember Judith Mitchell and Mayor Pro Tem Benoit were absent due to conflicts with their schedule. Dr. William Burke was named Ad Hoc member of the committee for purposes of this meeting.

Dr. Parker provided introductory comments before Mr. Nastri summarized the April 1, 2017 meeting.

Continuation of Public Comment Period

The public testimony reopened and the following 33 speakers provided comments. The speakers have been grouped into general categories of similar comments and in the order in which they spoke.

ALAN HARRIS
MITCH LAMBERT
DAVID BARTH
AMY FORREST
PAM COMBAR
CANEY ARNOLD
PETER BURGIS
HARRY STUVER
AL SATLER
CINDY ANNULI
CHARLES ORLOWSKI
LAURA RUBIO
BRICE BARADEL
DAVID HANNUM
WAI LIM
JOAN JONES
MARYANN MC FARLAND
CHRISTIE O’ROURKE
DEREK LAZZARO
SOPHIE DREIFUSS
ADELE GLEICHMAN
MELANIE COHEN
AMY JOSEFEK

The above Torrance/South Bay residents raised concerns regarding the consequences of a potential release of HF in a large populated community, the lack of monitoring and availability of data, as well as the lack of adequate safety protocols (e.g., alert system, notification process, disaster drills). The speakers support a safer alternative to HF usage. Ms. Forrest and Mr. Burgis were concerned about the uncertainty as to what to do in the event there is an accidental release. Ms. Combar and Ms. Josefek believe HF risk can be mitigated without the loss of jobs. Mr. Satler noted HF that can penetrate bone and is much more dangerous than sulfuric acid. Ms. Jones was concerned about the large quantity of HF on-site and Ms. O’Rourke questioned how to quickly seal off a home and shelter in place during an HF release. Mr. Lazzaro listed a number of local polluting companies to make the point that regulatory agencies need to force companies

to be held accountable for their pollution. Ms. Dreifuss requested to make material online easier to find, and for Norton Engineering to update the study to include the UK and Chevron refineries that have converted from HF to an alternative technology.

TIM SHEPPARD
DWIGHT SCOTT
TOM MORTON
JERRY ELLIOTT
JOHN HANNA
RAY LAWSON
JORGE QUINTERO
WILLIAM BAXTER
FRANK ZAMBRANO
AL GARCIA

The above union members, refinery workers, consultants, and trade representative support the TRC refinery, want to protect the workers' jobs, and provide the time to fix any problems. Mr. Sheppard regarded the ionic liquid technology as very new and that it needs more time for development. Mr. Hanna was concerned about the impact to the economy, jobs, and the gasoline market if HF is banned and the refinery was unable to operate. He encouraged the SCAQMD to work with the refinery on a long-term solution. Mr. Baxter and Mr. Zambrano highlighted the refinery's emphasis on worker safety training and to let the rulemaking process take place. Mr. Garcia noted that HF has been used at Torrance refinery since 1966 and there has been no HF release past the fence-line.

Dr. Parker reminded the audience that a solution to the issues raised will take some time to resolve, recognizing that there is a process and legal requirements that need to be met. He emphasized the need to do it right or the process will take even longer if certain obligations are not met appropriately.

The meeting was adjourned at approximately 11:30 a.m.

Attachments

All the presentations have been posted online and can be accessed from the following webpage: <http://www.aqmd.gov/home/regulations/compliance/torrance/hearing-on-torrance-refining-co>