

BEFORE THE HEARING BOARD OF THE
 BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 STATE OF CALIFORNIA

FILED
 AUG 10 2023
 HEARING BOARD
 BAY AREA AIR QUALITY
 MANAGEMENT DISTRICT

In the Matter of the)
)
 AIR POLLUTION CONTROL OFFICER of the)
 BAY AREA AIR QUALITY MANAGEMENT)
 DISTRICT)
)
 Complainant,)
)
 vs.)
)
 VALERO REFINING COMPANY -)
 CALIFORNIA)
)
 Respondent.)
)
 Re: Valero Refining Company - California,)
 Facility No. B2626)
 _____)

Docket No. **3743**
 ACCUSATION OF VIOLATION OF
 REGULATION 8-28
 AND
 REQUEST FOR ORDER FOR ABATEMENT

Pursuant to Sections 42451 and 42452 of the California Health and Safety Code, Complainant the Air Pollution Control Officer (the “APCO”) of the Bay Area Air Quality Management District (the “Air District”) requests that the Hearing Board issue an Order for Abatement directed to Respondent Valero Refining Company – California (hereinafter “Valero” or “Respondent”).

In support of this request, and upon information and belief, the APCO alleges as follows:

INTRODUCTION AND SUMMARY

1. The APCO seeks an Order for Abatement against Valero to address ongoing, long-standing violations of Air District Regulation 8-28-304.2 (“Rule 304.2”), which have resulted in illegal unabated emissions of harmful organic compounds from eight Pressure Relief Devices (“PRDs”) at the Hydrogen Compressor Unit at the Valero refinery in Benicia. Valero failed to take the appropriate, legally mandated actions to install emissions control equipment on these PRDs to prevent the organic compounds from being emitted into the atmosphere, despite knowing for years—in some cases, more than a decade—that the emission controls were required by Rule 304.2. Therefore, the APCO respectfully requests that the

1 Hearing Board issue an Order for Abatement requiring Valero to cease operations at the Hydrogen
2 Compressor Unit until such time as it routes all the affected PRDs to appropriate controls and achieves
3 full compliance with Air District Rule 304.2.

4 2. PRDs are used to release excess pressure in refinery process streams to avoid damage to
5 refinery equipment. At most times, the PRDs are sealed and do not release emissions. But, when excess
6 pressure occurs, the PRDs open and release the process stream gas to the atmosphere.

7 3. Under Rule 304.2, a PRD in organic compound service that has experienced two or more
8 release events within a five-year period must be routed to a vapor recovery or disposal system with at
9 least 95% by weight control efficiency. Control of the emissions must be completed within one year of
10 the second release event. Once the PRD is routed to the vapor recovery or disposal system, any further
11 releases will be controlled and will not be emitted into the atmosphere.

12 4. The Air District has identified eight PRDs at Valero's refinery that experienced multiple
13 release events in a five-year period. The earliest second PRD release event occurred on March 11, 2011,
14 meaning Valero was required to route that PRD to abatement by March 11, 2012. Valero's ongoing
15 failure to route any of the PRDs to the controls required by Rule 304.2 has resulted in substantial illegal
16 unabated emissions from the PRDs. Those illegal emissions have totaled approximately 165 tons of total
17 organic compounds since 2012. Any further releases from these PRDs will continue to be emitted directly
18 into the atmosphere unless and until Valero routes them to a vapor recovery or disposal system as
19 required by law.

20 5. Given Valero's persistent failure to properly route the PRDs to controls in ongoing
21 violation of Air District Rule 304.2 and the resulting illegal organic compound emissions that harm Bay
22 Area air quality, the APCO has determined that Valero must be compelled to route the subject PRDs to
23 control equipment that meets Rule 304.2 requirements. The APCO therefore seeks an Order from the
24 Hearing Board requiring Valero to cease operation of the Hydrogen Compressor Unit until it routes the
25 PRDs to controls that meet all Air District rule requirements.

26 **COMPLAINANT**

27 6. The Air District is the governmental agency charged with the primary responsibility in the
28 San Francisco Bay Area for controlling air pollution from all sources other than motor vehicles, for

1 enforcing laws relating to air pollution, and for maintaining healthy air quality. The Air District is
2 organized pursuant to Division 26, Part 3, Chapter 11 of the Health and Safety Code.

3 7. The APCO is appointed by the Bay Area Air Quality Management District Board of
4 Directors to enforce all orders, rules and regulations prescribed by the Air District Board. (California
5 Health and Safety Code Section 40750 *et seq.*) The APCO is authorized to request that the Hearing Board
6 issue an order for abatement in accordance with Section 42451(a) of the California Health and Safety
7 Code.

8 **RESPONDENT**

9 8. Respondent Valero Refining Company – California is a corporation subject to the
10 jurisdiction of the Air District. Respondent operates the Benicia petroleum refinery located at 3400 East
11 Second Street in Benicia, Contra Costa County, California.

12 **The VALERO BENICIA REFINERY, ITS HYDROGEN SYSTEM, and the PRDs**

13 9. Valero’s Benicia Refinery (the “Refinery”) is a petroleum refinery primarily serving the
14 domestic United States market. It has the capacity to process up to approximately 165,000 barrels of crude
15 oil per day. The Refinery processes crude oil through a series of complex operations to produce refined
16 petroleum products such as gasoline and diesel fuel that are sold to the market.

17 10. Hydrogen is an essential component for various refining processes. It is used to de-
18 sulfurize process feedstock and to assist in breaking apart – or “cracking” – long-chain hydrocarbon
19 molecules into more useful shorter-chain molecules.

20 11. The Valero Refinery’s hydrogen system utilizes hydrogen produced from two sources: the
21 Hydrogen Unit, which produces relatively pure hydrogen free of air pollutants; and the Naphtha Reformer
22 Unit, which produces impure hydrogen as a byproduct from its primary purpose of processing heavy, low-
23 octane, naphtha (a petroleum feedstock) into high-octane reformate, a gasoline blending component. The
24 Naphtha Reformer Unit’s impure hydrogen is contaminated with organic compounds. The combined
25 contaminated hydrogen stream is routed through the Refinery’s Hydrogen Compressor Unit—where the
26 PRDs at issue in this Accusation are located—to achieve the necessary high pressure at which the
27 hydrogen can be used in the Refinery’s various hydrogen-consumer units.

28 12. Valero uses PRDs located in the Hydrogen Compressor Unit of the Refinery, along with

1 other venting points, to maintain the proper pressure for the hydrogen stream. The PRDs are safety
2 devices installed to prevent abnormal severe overpressures that could cause catastrophic equipment failure
3 – similar to the pressure relief valve on a home pressure cooker, but on an industrial scale. These PRDs
4 protect the hydrogen compressors and the three-stage hydrogen gas compression process.

5 13. Under normal conditions, these PRDs remain tightly closed and do not release any gas.
6 But, in the event of an upset or malfunction that causes pressure to rise to potentially dangerous levels, the
7 PRDs open to vent excess gas buildup that could rupture or otherwise damage the hydrogen compressors.
8 As a result, Valero has vented hydrogen gas laden with toxic contaminants through these PRDs.

9 14. Because the Refinery’s hydrogen stream that is compressed in the Hydrogen Compressor
10 Unit contains organic compounds originating in the Naphtha Reformer Unit, the PRDs within the
11 Hydrogen Compressor Unit are subject to Rule 304.2 and release organic compounds to the atmosphere
12 when they experience release events.

13 15. Under Air District Regulation 8-28-214, a “Release Event” is defined as: “Any release of
14 organic or inorganic pollutants greater than 10 pounds from a pressure relief device, subject to this Rule,
15 to the atmosphere.”

16 16. Rule 304.2 requires a refinery operator to route PRDs to either a vapor recovery system or
17 a disposal system with at least 95 percent by weight organic compounds control efficiency within one
18 year of a second release event within a five-year period, in order to limit harmful emissions. PRDs are
19 intended to vent excess pressure only in very rare circumstances. The rule ensures that, if they are venting
20 more frequently, abatement action is effectuated to control the emissions. If the PRDs are experiencing
21 release events more than once every five years, the potential for emissions is significant enough that the
22 operator should implement measures to ensure that any organic compounds are not emitted directly into
23 the atmosphere, where they can harm public health and the environment.

24 **VALERO’S FAILURE to CONTROL EMISSIONS from the PRDs**

25 17. According to Valero’s own data, the eight PRDs that are the subject of this Accusation
26 each experienced multiple release events within a five-year period. The date of each PRD’s second release
27 event within five years was between March 12, 2010 and July 23, 2014. Valero was therefore required to
28 route the PRDs to abatement between March 12, 2011 and July 23, 2015. Valero’s failure to do so

1 constitutes a violation of Air District Regulation 8-28-304.2, and it has resulted in significant illegally
2 unabated organic compound emissions when those PRDs have experienced subsequent releases that were
3 not controlled by abatement equipment as required by Rule 304.2.

4 18. The table below identifies the eight PRDs at issue here, their first and second release
5 events as indicated by the data, and the resulting abatement deadline to route the PRDs to a vapor
6 recovery or disposal system with at least 95 percent by weight organic compounds control efficiency that
7 Valero failed to meet.

Pressure Relief Device	First Release Event	Second Release Event	Abatement Deadline
<i>SV313-1</i>	3/12/2010	3/14/2011	3/14/2012
<i>SV313-3</i>	2/12/2010	4/10/2010	4/10/2011
<i>SV313-4</i>	2/22/2010	3/12/2010	3/12/2011
<i>SV314-1</i>	11/8/2011	8/9/2013	8/9/2014
<i>SV314-2</i>	8/17/2013	7/5/2014	7/5/2015
<i>SV314-3</i>	3/12/2010	3/1/2011	3/1/2012
<i>SV383</i>	3/15/2010	12/28/2010	12/28/2011
<i>SV384</i>	7/22/2014	7/23/2014	7/23/2015

8
9
10
11
12
13
14
15 19. The APCO was not aware of these release events, or that Valero had triggered the
16 requirement to route the PRDs to a vapor recovery or disposal system, because Valero failed to notify the
17 APCO of the release events as required under Regulation 8-28-401. Instead of notifying the APCO no
18 later than the next working day, as required by the regulation, Valero kept the existence of these release
19 events secret and quietly kept operating the Hydrogen Compressor Unit without routing the PRDs to the
20 required controls, in violation of Rule 304.2. It was only when Air District inspectors began investigating
21 a series of ongoing violations involving Valero's hydrogen system that these PRD violations came to
22 light.

23 20. Valero's failure to route the PRDs to a vapor recovery or disposal system in violation of
24 Rule 304.2 means that whenever one of these eight PRDs experiences a release, the emissions go directly
25 into the atmosphere instead of being controlled. To date, the eight PRDs at issue here have experienced a
26 combined total of at least 55 further releases after the deadlines for routing the PRDs to controls. Those
27 releases resulted in at least approximately 330,286 pounds, or approximately 165 tons, of illegal organic
28 compound emissions that would have been abated if Valero had complied with Rule 304.2. To the extent

1 that these PRDs experience further releases in the future, those emissions will similarly go directly into
2 the atmosphere and harm air quality and public health, unless Valero routes the PRDs to control
3 equipment as required by Rule 304.2.

4 21. Valero's PRD releases, which have been and will continue to be emitted directly into the
5 atmosphere because of Valero's failure to route the PRDs to the required controls, are the result of the
6 company's plainly egregious violations of Rule 304.2.

7 22. In May of this year, Air District enforcement staff contacted Valero to confirm whether the
8 PRDs had been routed to controls. Valero responded that none of the eight PRDs had been routed to a
9 vapor recovery or disposal system.

10 23. On July 18, 2023, Valero informed Air District staff that it is planning a project to pipe the
11 eight PRDs currently operating in violation of Rule 304.2, as well as eleven other PRDs at the Hydrogen
12 Compressor Unit, to the refinery's main flare header in order to comply with Rule 304.2. Valero
13 submitted that this project would be exempt from Air District permitting requirements. The APCO is
14 currently evaluating the situation to determine how the Air District's permitting regulations will apply to
15 this project.

16 24. To the best of the Air District's knowledge, Valero's Rule 304.2 violations are ongoing.

17 **ENVIRONMENTAL and PUBLIC HEALTH CONCERNS**

18 25. Organic compounds are pollutants that have significant adverse air quality and public
19 health impacts. When released to the atmosphere and exposed to sunlight, organic compounds combine
20 with oxides of nitrogen to create smog. Due to the significant harms caused by smog, the Air District has
21 enacted more than 50 regulations to control and reduce the emissions of organic compounds from
22 operations within its jurisdiction.

23 26. Organic compounds emitted from refineries typically include many toxic air contaminants
24 associated with both non-cancer and cancer health effects. The potential for associated health effects
25 depends on the specific chemical compounds released, the quantities of the toxic compounds released, and
26 the distance to the community.

27 27. Volatile organic compounds and oxides of nitrogen (NOx) chemically react in the
28 atmosphere to form ground level ozone. Pollutants from cars and industrial sources, such as the volatile

1 organic emissions from Valero, react in the presence of sunlight to form ozone. Tropospheric or ground
2 level ozone is not emitted directly into the air. The concentration levels of ozone in the ambient air in the
3 San Francisco Bay Area are currently in violation of several health-based state and federal air quality
4 standards. Specifically, for ozone the Bay Area is in violation of both state air quality standards (1)
5 measured over an 8-hour period of 0.070 ppm and (2) measured over a 1-hour period of 0.09 ppm. The
6 Bay Area is also designated as nonattainment for the federal 8-hour standard of 0.070ppm.¹

7 28. Breathing elevated levels of ozone causes serious public health problems. Many decades of
8 epidemiological studies have demonstrated that inhalation of ozone causes increased respiratory irritation
9 with inflamed and damaged airways, decreased lung function, increased susceptibility to respiratory
10 infection, increased frequency of asthma attacks, and aggravation of other lung diseases, such as
11 emphysema and bronchitis. In addition, ozone has harmful effects on the environment. Studies have
12 shown that ozone can negatively affect sensitive vegetation and ecosystems, such as forests, parks,
13 wildlife refuges and wilderness areas. Specifically, in sensitive plants, ozone reduces photosynthesis
14 thereby slowing the plant's growth and increases the risk of disease and damage by insects and other
15 harmful elements.

16 29. Volatile organic compounds can also serve as precursors to the atmospheric formation of
17 fine particulate matter. Breathing elevated levels of fine particulate matter causes many of the same
18 respiratory health effects as ozone, in addition to causing premature death in people with heart or lung
19 disease and a wide array of health effects to other organ systems.

20 30. The gas in Valero's Hydrogen System which was emitted into the atmosphere contains
21 highly toxic and carcinogenic compounds such as benzene, toluene, ethylbenzene, and xylene,
22 collectively known as "BTEX" compounds. Exposure to BTEX compounds is known to cause cancer,
23 reproductive harm, damage to the immune system, neurological impairment, and other health hazards
24 including developmental and respiratory harm. For benzene in particular, there is no safe threshold
25 exposure level below which no significant adverse health effects are anticipated.

26
27 ¹ On November 7, 2022, the U.S. Environmental Protection Agency (U.S. EPA) determined that the San Francisco Bay Area
28 attained the 2015 ozone National Ambient Air Quality Standards (NAAQS) by the attainment date, suspending certain
requirements. However, the area remains designated as nonattainment until the Air District submits and EPA approves a
redesignation request and other requirements including a maintenance plan. Given interannual variations in ozone levels and
increasing temperatures and other changing weather patterns, the area could violate the NAAQS in future years.

1 31. Valero's failure to route its Hydrogen Compressor Unit PRDs to required controls has
2 resulted in substantial harm to the Bay Area's air quality and the health of its residents when those PRDs
3 have experienced unabated releases. These releases have inarguably degraded the region's air quality and
4 increased the likelihood that Bay Area residents suffer from asthma, respiratory inflammation and
5 increased respiratory infections, lung disease aggravations, and the various other health impacts. This has
6 all occurred, and is likely to continue to occur, because of Valero's knowing failure to abate the emissions
7 from the PRDs in violation of Rule 304.2. Despite Valero's knowledge that these rule violations continue,
8 it has yet to take any corrective action.

9 **GOOD CAUSE TO ISSUE ORDER OF ABATEMENT**

10 32. Valero is operating the subject PRDs in violation of Rule 304.2 due to its failure to route
11 those PRDs to abatement following their second release event within a five-year period. That duty arose
12 at various points between 2011 and 2015, but Valero has failed to take the required action to prevent the
13 resulting harmful organic compound emissions for any of the PRDs.

14 33. Valero will remain in violation of Rule 304.2 as long as it continues to operate the PRDs
15 without routing them to a vapor recovery or disposal system with at least 95 percent by weight organic
16 compounds control efficiency. The APCO seeks, through this Accusation, an Order for Abatement
17 directing Valero to cease operations at the Hydrogen Compressor Unit until such time as it routes the
18 PRDs to the required controls.

19 34. It is not unreasonable to require Valero to implement such measures immediately or as
20 soon as practically possible. Valero realizes an enormous economic benefit through operating the Benicia
21 Refinery, and it is not unreasonable to expect the company to spend the time and resources necessary to
22 ensure that it will comply with the law and prevent the illegal air pollution that it emits every time its
23 uncontrolled PRDs experience releases. Moreover, fixing this problem will have a substantial
24 corresponding benefit in air quality by reducing or eliminating these unabated organic compound
25 emissions, which have caused and are likely to continue to cause harm to the environment and the public
26 health and welfare. Furthermore, other refineries within the Air District's jurisdiction are complying with
27 the requirements of Regulation 8-28-304.2; it is not unreasonable to expect Valero to do the same.
28 Allowing Valero to persist in its continuing extensive non-compliance provides an unjustified advantage

1 over those facilities that have expended the time, effort, and expense associated with regulatory
2 compliance.

3 35. The issuance of an Order for Abatement upon a noticed hearing would not constitute a
4 taking of property without due process of law.

5 36. The issuance of an Order for Abatement is not expected to result in the closing or
6 elimination of an otherwise lawful business but, if it does result in a closure or elimination, it would not
7 be without a corresponding benefit in reducing air contaminants.

8 37. The requested Order for Abatement is not intended to act as a variance.

9 38. The APCO therefore submits that the requirements for issuance of an Order for Abatement
10 under Health and Safety Code sections 42451(a) and 42452 are satisfied and that such an Order is
11 appropriate under the circumstances.

12 **REQUEST FOR ORDER FOR ABATEMENT**

13 WHEREFORE, the APCO respectfully requests as follows:


14 1. That this Hearing Board issue an Order for Abatement prohibiting Respondent from
15 operating the Hydrogen Compressor Unit unless and until the eight PRDs identified herein are routed to a
16 vapor recovery or disposal system with at least 95 percent by weight organic compounds control
17 efficiency and full compliance with Rule 304.2 is achieved.

18 2. For such other and further relief as the Hearing Board deems just and proper.
19

20 Dated: August 10, 2023

ALEXANDER G. CROCKETT
District Counsel
SOMERSET PERRY
Assistant Counsel

23 Attorneys for
24 PHILIP M. FINE
Executive Officer/APCO
25 BAY AREA AIR QUALITY MANAGEMENT DISTRICT

26
27 By: 
28 _____
SOMERSET PERRY
Assistant Counsel