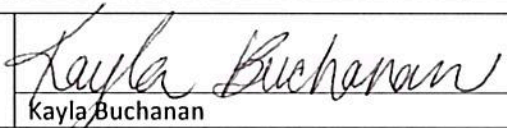


Region 6 - Enforcement & Compliance Assurance Division
INSPECTION REPORT

Inspection Date(s):	06/27-07/01/2022	
Media Program:	Air	
Regulatory Program(s)	RMP	
Company Name:	Shell Oil Products	
Facility Name:	Equilon Enterprises LLC dba Shell-Norco LA Refinery	
Facility Physical Location:	15536 River Road	
(city, state, zip code)	Norco, Louisiana, 70079	
Mailing address:	15136 River Road, P.O. Box 10, River Road	
(city, state, zip code)	Norco, Louisiana, 70079	
County/Parish:	St. Charles Parish	
Facility Phone Number	(504) 465-6837	
Facility Contact:	Benjamin White	Process Safety Manager
	Benjamin.white@shell.com	
FRS Number:	110000448864	
Identification/Permit Number:		
Media Identifier Number:	RMP: 100000026009	
NAICS:	32511- Petrochemical Manufacturing	
SIC:	2911 - Petroleum Refining	
Personnel participating in inspection:		
Benjamin White	Shell Norco Refinery	PSM Manager
Carla Giannattasio	Shell Norco Refinery	MOC Focal Point
Matthew Normand	Shell Norco Refinery	PSM MOC Coordinator
Tim Arnold	Shell Norco Refinery	Norco PSM
Kayla Buchanan	USEPA Region 6	Lead Inspector
Howard Cole	USEPA Region 6	Inspector
Keri Meyers	LDEQ	LDEQ CAPP Inspector
Jamie Vicknair	LDEQ	LDEQ CAPP Inspector
Bryn LeBlanc	LDEQ	LDEQ CAPP Inspector
EPA Lead Inspector Signature/Date	 Kayla Buchanan	9/7/2022 Date
Supervisor Signature/Date	SAMUEL TATES Digitally signed by SAMUEL TATES Date: 2022.09.07 14:17:09 -05'00' Samuel Tates	Date

Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

U.S. Environmental Protection Agency (EPA) Region 6 inspectors Kayla Buchanan and Howard Cole arrived at Equilon Enterprises LLC dba Shell-Norco LA Refinery (Shell Norco Refinery) at 9:00 AM on June 27, 2022, for an announced inspection. Louisiana Department of Environmental Quality (LDEQ) Chemical Accident Prevention Program (CAPP) inspectors also attended and participated in the inspection. EPA convened an opening conference and met with several representatives from the facility (*see Appendix 1*). Kayla Buchanan presented her credentials to the opening conference attendees and informed them that this was an EPA inspection to determine Shell Norco Refinery's compliance with the Clean Air Act Section 112r (1) and (7), the General Duty Clause and Risk Management Program (RMP) requirements, respectively. A union representative from the United Steel Workers (USW) attended the opening conference.

FACILITY DESCRIPTION

Shell Norco operates the Equilon oil refinery located at 15536 River Road, in Norco, Louisiana. The facility spans 1,000 acres and approximately 1,000 full time employees work at the facility. Shell Norco Refinery produces around 250,000 barrels of crude oil and 170,000 barrels of gasoline per day. There are nine RMP Program Level 3 processes at the facility. The following is a list of RMP toxic and flammable substances stored at Shell Norco Refinery in quantities and concentrations above applicable thresholds designated in the RMP regulation:

- Flammables: Butene, Propane, Propylene, Butane, Isobutane, Methane, Hydrogen, 1,3 Butadiene, Ethyl Mercaptan, 1-Pentene, 1-Butene
- Toxics: Hydrochloric Acid, Hydrogen Sulfide

Section II – OBSERVATIONS

40 C.F.R. Part 68 – CHEMICAL ACCIDENT PREVENTION PROVISIONS

Subpart A – General

On June 30, 2022, EPA and LDEQ conducted a driving tour of the Shell Norco Refinery and were accompanied by Benjamin White, Process Safety Management (PSM) Manager and Matthew Normand, PSM Management of Change (MOC) Coordinator. The group conducted a walking tour of the Naphtha Hydrotreating (NHT) unit and control room. EPA and LDEQ observed the covered process, equipment, operations, control rooms, and emergency equipment. EPA and LDEQ interviewed operators and asked questions about their training, their involvement in the Management of Change (MOC) and Process Hazard Analysis (PHA) processes, and the facility's normal operating and emergency procedures.

40 C.F.R. § 68.10 Applicability – Shell Norco Refinery is the owner/operator of a stationary source that has more than the threshold quantities of two toxic and eleven flammable regulated substances in its processes; therefore, the RMP regulations are applicable. Shell Norco Refinery has a Clean Air Act Title V permit and an Air Operating Permit and is classified under the North American Industrial Classification System (NAICS) Code 325110 (Petrochemical Manufacturing). In addition, this facility is subject to the Occupational Safety and Health Administration's (OSHA) PSM Standard (29 C.F.R. § 1910.119), which categorizes Shell Norco Refinery as a Program Level 3 facility. Shell Norco Refinery last submitted a Risk

Management Plan registration update to EPA on January 2, 2019, which describes the processes containing the regulated chemicals stored at more than threshold quantities.

40 C.F.R. § 68.12 General requirements – The owner or operator of a stationary source subject to this regulation must submit a Risk Management Plan, as prescribed in 40 C.F.R. § 68.150 to § 68.185. The RMP must include a registration that reflects the covered processes. I reviewed the re-submission of Shell Norco Refinery's RMP. It listed the toxic and flammable regulated chemicals and the associated Program Level 3 processes.

40 C.F.R. § 68.15 Management – Shell Norco Refinery developed a management system to oversee the implementation of the risk management program elements. It assigned an individual in a qualified position (Tammy Little, General Manager) who has overall responsibility for the development, implementation, and integration of the risk management program elements. Responsibility for implementing individual requirements of this part was assigned to individuals other than the person identified, so the names or positions of these people were documented, and the lines of authority were defined through an organization chart or similar document.

Subpart B – Hazard Assessment

40 C.F.R. § 68.20 Applicability – Shell Norco Refinery is a Program Level 3 stationary source subject to this subpart; therefore, it is required to prepare a worst-case release scenario analysis and complete the five-year accident history.

40 C.F.R. § 68.22 Off Site Consequence Analysis Parameters – Shell Norco Refinery employed the parameters specified by EPA in this rule by using the RMP*Comp™ software. EPA reviewed the off-site consequence analysis and supporting documentation to assure the data was accurate and correct.

40 C.F.R. § 68.25 Worse-case release scenario analysis – Shell Norco Refinery identified and analyzed worst-case scenarios for each toxic and flammable substance in its Program Level 3 processes using the RMP*Comp™ software, thus meeting the requirements of the regulation. Shell Norco identified and analyzed an additional worst-case scenario after determining that a release from another covered process at the stationary source could potentially affect public receptors different from those potentially affected by other scenarios identified.

40 C.F.R. § 68.28 Alternative Release Scenario Analysis – Shell Norco Refinery identified and analyzed at least one alternative release scenario for each toxic and flammable substance in its Program Level 3 processes using the RMP*Comp™ software, thus meeting the requirements of the regulation.

40 C.F.R. § 68.30 Defining Off Site impacts - Population – Shell Norco Refinery used the 2010 Census Bureau population data and the distances to endpoints, as specified in the regulation, to calculate the population numbers reported in their RMP. Shell Norco Refinery used the *Circular Area Profiles* application to define the population surrounding the facility. In addition, Shell Norco Refinery provided a map documenting the nearest public receptor.

40 C.F.R. § 68.33 Defining Off Site impacts – Environment – Shell Norco Refinery used US Geological Survey maps data to determine the environmental receptors and the distances to endpoints.

40 C.F.R. § 68.36 Review and Update – Review of available documentation confirmed that Shell Norco Refinery reviews and updates its off-site consequence analysis every 5 years.

40 C.F.R. § 68.39 Documentation – Shell Norco Refinery maintained records of the off-site consequence analyses in accordance with this subpart. These records included:

- a description of the vessel or pipeline and substance selected as worst case and alternate release scenarios, assumptions and parameters used, and the rationale for selection of specific substances;
- documentation of estimated quantity released, release rate, and duration of release;
- methodology used to determine distance to endpoint; and,
- data used to estimate population and environmental receptors.

40 C.F.R. § 68.42 Five-year accident history – The regulation requires Shell Norco Refinery to include a five-year accident history in its RMP submission. The accident history must describe all accidental releases of RMP chemicals from covered processes that resulted in deaths, injuries, or significant property damage on site, or known off-site deaths, injuries, evacuations, sheltering in place, property damage, or environmental damage. Shell Norco Refinery stated it did not have any reportable accidental releases in the past five years that met these criteria. EPA examined incident investigations conducted at the facility, as well as Shell Norco Refinery's OSHA Form 300 logs from 2017 to present, to ensure that additional releases from the facility which could possibly be included in the RMP five-year accident history, were not omitted.

40 C.F.R. § 68.65 Process Safety Information (PSI) – EPA and LDEQ reviewed Shell Norco Refinery's PSI. The written process safety information enables the owner or operator and the employees involved in operating the processes to identify and understand the hazards posed by those processes involving regulated substances. Shell Norco Refinery's compilation of written process safety information included information pertaining to the hazards of the regulated substances used or produced by the process, information pertaining to the technology of the process, and information pertaining to the equipment in the process. Shell Norco Refinery documented that its equipment complies with recognized and generally accepted good engineering practices (RAGAGEP).

40 C.F.R. § 68.67 Process Hazard Analysis (PHA) – EPA and LDEQ reviewed Shell Norco Refinery's PHAs. Shell Norco Refinery uses the Hazard and Operability Study (HAZOP) and Layer of Protection Analysis (LOPA) methodologies to determine and evaluate the hazards of the process being analyzed. EPA specifically examined Shell Norco Refinery's most recent PHA reports for the Sulfur 3 (S3), Alkylation, and NHT units. The PHAs reviewed addressed: (1) the hazards of the process; (2) the identification of any previous incident which had a likely potential for catastrophic consequences; (3) engineering and administrative controls applicable to the hazards, and their interrelationships; and, (4) consequences of failure of engineering and administrative controls. The PHAs were performed by a team with expertise in engineering and process operations. The team included at least one employee who had experience and knowledge that was specific to the process being evaluated, and one employee who was knowledgeable in the specific PHA methodology used.

Shell Norco Refinery is required to establish a system to promptly address the PHA team's findings and recommendations, to assure that the recommendations are resolved in a timely manner, and to verify that the resolutions are documented. The facility tracks action items generated during a PHA in an online system, *RADAR*. Shell Norco was unable to locate and provide records for the inspection team's

review from the 2017 Alkylation PHA recommendation action items in the *RADAR* system (**see Appendix 2**) [Area of Concern (AOC) 1 - 40 C.F.R. § 68.67(e)].

40 C.F.R. § 68.69 Operating Procedures – LDEQ reviewed Shell Norco Refinery’s operating procedures for the covered processes. The written operating procedures reviewed provided clear instructions for safely conducting activities involved in each covered process, consistent with the process safety information. The operating procedures reviewed addressed: the steps for each of the operating phases, the operating limits, including the consequences of deviation and mechanisms to correct and/or avoid deviation, safety and health considerations, and safety systems and their functions. Operating procedures are accessible by going to any Shell computer and downloading the procedures from the SharePoint computer network. There is also a binder containing paper copies of the operating procedures in the control room that can be used if the online system is down. Shell Norco annually certified that its operating procedures are current and accurate.

EPA reviewed Shell Norco Refinery’s safe work procedures, including lock out/tag out procedures and confined space safe entry procedures. The safe work procedures apply to both employees and contractors.

40 C.F.R. § 68.71 Training – Shell Norco Refinery is required to train each employee involved in operating a process in an overview of the process and in the operating procedures. Each employee presently involved in operating a process, and each employee before being involved in operating a newly assigned process, must be trained. In addition to initial training, employees must undergo refresher training at least every three years.

Each new Shell Norco Refinery employee must complete onboarding training, during which they receive required safety and health training and are informed about the hazards of the process. Once onboarding is completed, the newly hired operator is assigned a field job, and receives specific instruction about that job. The operator must complete and pass a training plan, which consists of both a graded skill and a knowledge component. Operators may be certified on multiple jobs and must receive refresher training for each job they certify on.

EPA randomly selected eight operators for a training records review (**see Appendix 3**). One operator was hired February 25, 2019, but did not complete his initial operator certification until January 6, 2020. This operator was working in the covered process without the required initial training during this period. Three other operators were late for their refresher training, and at least one of these operators was 21 months overdue [AOC #2/AOC #3 - 40 C.F.R. § 68.71(a) and (b)].

40 C.F.R. § 68.73 Mechanical Integrity – EPA reviewed the written procedures Shell Norco Refinery established to maintain the ongoing integrity of process equipment both onsite, and in further detail, after leaving the facility post-inspection. EPA examined the inspections and tests Shell Norco Refinery performed on its equipment to ensure that frequency of inspections and tests of process equipment are consistent with applicable manufacturers’ recommendations and good engineering practices.

Inspection and Testing Schedule

EPA noted the following inspections and tests were not conducted as specified in the applicable standards [AOC #4 - 40 C.F.R. § 68.73(d)(1)]:

- Shell Norco Refinery did not conduct an internal inspection for the Primary Depropanizer Column 331 every ten years, in accordance with the Risk Based Inspection (RBI) Interval 2024 under American Petroleum Institute (API) Standard 510, Section 6.5.1.1. The last internal inspection was conducted in April 2009 and the next inspection was due in April 2019.
- Shell Norco Refinery did not conduct ultrasonic testing (UT) for the NHT Reactor PV00604 every ten years in accordance with API 510 6.5.1.1. The last UT inspection was March 17, 2012, and the next RBI inspection is scheduled for 2028. An inspection should have been completed in March 2022, or a reason documented for why an inspection could be delayed to 2028.
- Shell Norco Refinery did not conduct ultrasonic testing for the Claus Converter 6308 every ten years in accordance with API 510 6.5.1.1. The last ultrasonic testing was performed May 2011 and the next scheduled RBI ultrasonic testing is 2037. The internal Shell Norco Refinery specified maximum interval for ultrasonic testing is 30 years, which is not consistent with the API standard.
- Shell Norco Refinery did not perform ultrasonic testing for the pressure vessel Scot Stripper 6313 every ten years in accordance with API 510 Section 6.5.1.1. No ultrasonic testing data was provided for this pressure vessel for the inspection team's review.
- Shell Norco Refinery did not set the deadline for the next internal inspection for pressure vessel Scot Stripper 6313 to 10 years from the most recent inspection in accordance with API 510 Section 6.3.2.
API 510 6.3.2 states: *"When an RBI interval for the internal or on-stream inspection exceeds the 10-year limit, the RBI assessment shall be reviewed and approved by the engineer and inspector at intervals not to exceed 10 years"*
- The previous API 510 full internal inspection was conducted in April 2011 and the last "cursory" internal inspection was conducted in April 2019. API 510 does not define "cursory" inspection or partial inspection, and Shell Norco did not take credit for a full API 510 internal inspection in April 2019. The next scheduled internal inspection for this pressure vessel, per the Condition History-Inspection and Test Plan, is 2049 (30 years).
- Shell Norco Refinery did not conduct an on-stream inspection in lieu of an internal inspection in May of 2020 for the Blowdown Drum 633. There is no information to support that the 2020 ultrasonic testing performed was on-stream. Hence, no credit is appropriate for representing the 2020 UT results as an internal inspection conducted at a 10-year interval in accordance with API-510. Also, the unconfirmed on-stream inspection in lieu of an internal inspection was not approved until February 2022 ("2/11/2022- Ernie Barthe.")
- Shell Norco Refinery did not conduct an internal inspection for the Relief Header Knockout Drum PV06340 every ten years in accordance with the established Inspection and Test Plan for this pressure vessel. The previous inspection was conducted in October 2003. The established Inspection and Test Plan indicates that the next internal inspection date is May 2033 (30 years), but there is no basis documented for setting an inspection date that is not consistent with the applicable standard.
- Shell Norco Refinery did not set the next deadline for internal inspection for pressure vessel Relief Header Knockout Drum PV06340 at 10 years from the date of the previous inspection, in accordance with API 510 Section 6.3.2.
API 510 6.3.2 states: *"When a RBI interval for the internal or on-stream inspection exceeds the 10-year limit, the RBI assessment shall be reviewed and approved by the engineer and inspector at intervals not to exceed 10 years."* The previous API 510 internal inspection was conducted in October 2003. The next scheduled internal inspection for this pressure vessel, per the established Condition History-Inspection and Test Plan, is October 2033 (30 years), but there is no basis documented for setting an inspection date that is not consistent with the applicable standard.

- Shell Norco Refinery did not conduct an ultrasonic testing for the Relief Header Knockout Drum PV06340 every ten years in accordance with API 510 6.5.1.1. The previous ultrasonic testing was performed in April 2012 and the next testing was due in April 2022. The RBI calculated next ultrasonic testing date is April 2042 (30 years). There was no basis documented for setting the next inspection deadline for a time period that is inconsistent with the API standard.
- Shell Norco Refinery did not conduct an internal inspection for the Stripper Reboiler E000768 every 10 -years in accordance with API 510 6.5.1.1 and failed to schedule the next internal inspection for the Stripper Reboiler E000768 within 10 years of the most recent inspection in accordance with API 510 Section 6.3.2.

API 510 6.3.2 states: *"When an RBI interval for the internal or on-stream inspection exceeds the 10-year limit, the RBI assessment shall be reviewed and approved by the engineer and inspector at intervals not to exceed 10 years."* The previous API 510 internal inspection was conducted in November 2007. The next scheduled internal inspection for this pressure vessel, per the Condition History-Inspection and Test Plan, is October 2028 (21 years). There was no basis documented for setting the next inspection deadline for a time period that is inconsistent with the API standard.

EPA noted the following inspections and tests of process equipment were not consistent with applicable manufacturers' recommendations and/or good engineering practices to conduct inspections more frequently if determined to be necessary from prior operating experience **[AOC #5 - 40 C.F.R. § 68.73(d)(2)]**:

Pressure Vessels

Shell did not conduct an internal inspection of the Flash Gas Knockout Drum PV06338 in accordance with the Shell Norco internal Inspection and Test Plan for this pressure vessel. The previous inspection was in April 2019 and the recommendation was made to perform another internal inspection in October 2019, based on the high corrosion rate observed. At the time of this inspection, the additional internal inspection had not been completed.

Shell Norco Refinery also did not properly calculate the next ultrasonic testing due date for the Flash Gas Knockout Drum PV06338. This pressure vessel has a high corrosion rate and requires an additional inspection within six months of the previous internal inspection. The previous inspection was in October 2019, yet the Inspection and Test Plan still reflects an RBI interval for the next ultrasonic testing date of August 2044. The previous ultrasonic testing was conducted in June 2018. No ultrasonic testing data was provided for the inspection team's review.

Shell Norco Refinery did not establish proper maximum intervals for Class 1 pressure vessel ultrasonic testing and internal inspections for the Sour Water Stripper KO Drum 6305. Ultrasonic testing was performed in 1995 and 2013, and the next Shell-specified RBI is scheduled for 2043. An internal inspection was performed in 2013 and the next Shell specified RBI is scheduled for inspection for 2043.

Shell Norco Refinery did not properly classify the Blowdown Drum PV06333 and the Relief Header KO Drum PV06340, which are designated as Class 4 pressure vessels, in the Shell Norco RBI Inspection and Test Plans for each vessel. Shell Norco Refinery also did not properly classify the Claus Converter 6308 in the test plan, which is designated as a Class 3 pressure vessel.

Piping Circuits

- Shell Norco Refinery did not conduct an ultrasonic testing on Class 2 piping circuit P001295 Circuit A every ten years in accordance with API 570. The previous inspection was conducted in May 2012 and the next inspection should have been completed by May 2022. The next RBI scheduled inspection is 2027. The date is based solely on the baseline testing performed in 2012.
- Shell Norco Refinery did not conduct ultrasonic testing on any fittings for Class 2 piping circuit P001340 every ten years in accordance with API 570. The RBI 15-year testing interval is based only on one set of measurements collected in 2006.
- Shell Norco Refinery did not conduct ultrasonic testing on the elbow fittings for Class 1 piping circuit P001040 Circuit B every five-years in accordance with API 570. Ultrasonic testing was previously performed on the piping circuit elbows in April 2003, which was beyond the API 570 five-year interval (April 2008) and the next scheduled testing according to the 15-year RBI interval should have been completed in April 2018. No ultrasonic testing has been conducted on elbows on this piping circuit between 2003 and 2022.
- Shell Norco Refinery did not conduct ultrasonic testing on Class 1 piping circuit P001576 Circuit Z every five years in accordance with API 570. Ultrasonic testing performed between 2003-2009 provided anomalous and insufficient data to support an RBI analysis extending the inspection interval to 15 years for all piping and fittings on the circuit.
- Shell Norco Refinery did not conduct ultrasonic testing on Class 2 piping circuit P075009 Circuit B every ten years in accordance with API 570. Ultrasonic testing performed between 1997-2011 provided anomalous and insufficient data to support an RBI analysis extending the inspection interval to 30 years (2041) for all piping and fittings on the circuit.
- Shell Norco Refinery did not correctly calculate the next ultrasonic testing interval to include a proper maximum interval for piping circuit P075009 Circuit Z. Ultrasonic testing was performed in June 2019, and the next RBI calculated interval is 2042. Ultrasonic testing performed between 2006-2019 provided anomalous and insufficient data to support an RBI analysis extending the inspection interval to 23 years for all piping and fittings on the circuit. It is unclear from the records reviewed and the data furnished whether any fittings on the circuit were actually tested.
- Shell Norco Refinery did not conduct ultrasonic testing on Class 1 piping circuit P001009 Circuit Z every five-years in accordance with API 570. Ultrasonic testing was performed in August 2007, some time in 2008, and in April 2022. Testing was not performed between August 2012-March 2022. Ultrasonic testing conducted between January 1953-2008 provided anomalous and insufficient data to support an RBI analysis extending the inspection interval to 22 years for all piping and fittings on the circuit.
- Shell Norco Refinery did not conduct ultrasonic testing on Class 2 piping circuit P0075068 Circuit Z every ten years in accordance with API 570. Ultrasonic testing was performed between November 1988-September 2010, and the next RBI calculated testing interval is 2040. Ultrasonic testing performed between 1988-2010 provided anomalous and insufficient data to support an RBI analysis extending the inspection interval to 30 years. It is unclear from the records reviewed and the data furnished what type of equipment was tested.

40 C.F.R. § 68.75 Management of Change (MOC) – Shell Norco Refinery has established, but has not consistently implemented, its written procedures to manage change, except for “replacements in kind”, for changes to process chemicals, technology, equipment, procedures, and changes to stationary sources that affect a covered process. The established documented procedures are intended to assure that the following considerations were addressed prior to implementing any change: technical basis for the change, impact of the change on safety and health, associated modifications to operating procedures, the necessary time period to complete the change, and authorization requirements for a proposed change. EPA noted that Shell Norco did not initiate MOCs for equipment taken out of service.

All out-of-service equipment should require either a temporary MOC or a permanent MOC. When a vessel and/or piping is taken out of service, and requires a change in the Process & Instrumentation Drawing (P&ID) (e.g. vessel ID, piping configuration, pressure or temperature indicators, adding pumps, etc.), a change in the operating procedure, a change in the process itself, a change in technology, or a change in equipment (i.e., a replacement or new vessel) or other instrumentation, an MOC should be generated. Shell failed to complete a management of change for the following out-of-service equipment identified in Table 1 [AOC 6 - 40 C.F.R. § 68.75(a)]:

Table 1

Equipment ID:	Equipment Description:
P030527	Vessel Trim at E-1827
B001853	Debutanizer Reboiler
TH00438	Pyrolysis Residue Storage
P030116	DEA Circulation Pump
RD02803	Relief Protect for E-2293B
E001027	Sour Water Cooler
P001117	PV-386 to Reactors
R001987	N2 to SWS Surge Feed Tank
RD02802	Relief Protection for E-2293A
PV00579	Gibson Knockout Pot
VB02807	TK-H-438
R002988	S-416/RV
R002917	S-416/RV
R002916	S-416/RV
R002915	S-416/RV
PV00650	S-416TV

Shell Norco Refinery employees involved in operating a process, and maintenance and contract employees whose job tasks will be affected by a change in a process, must be informed of and trained in the change prior to start-up of the process or an affected part of the process. Shell Norco Refinery could not produce documentation that affected employees or contractors receive such training. The facility explained that affected employees receive MOC awareness notification and/or training electronically through a mechanism called “daily orders.” Daily orders include pertinent information each operator is expected to review prior to starting work. There is no mechanism for employees to document acknowledgement that they have received awareness notification or other training on MOCs, and Shell Norco Refinery does not currently have a tracking system to ensure this is done. In its 2021 Compliance Audit, Shell Norco also noted this as a finding (**Appendix 4**) [AOC 7- 40 C.F.R. § 68.75(e)].

40 C.F.R. § 68.77 Pre-startup review (PSSR) - EPA reviewed Shell Norco Refinery’s written PSSR procedures, as well as various PSSRs completed by the facility within the past five years. The PSSRs reviewed confirmed that, prior to the introduction of a regulated substance into the process, the construction and equipment design were completed in accordance with design specifications, the required safety, operating, maintenance and emergency procedures were in place, and that training of each employee involved in operating a process was completed.

40 C.F.R. § 68.79 Compliance audits – EPA reviewed Shell Norco Refinery’s two most recent compliance audits, conducted July 11-13, 2018, and June 14-17, 2022, respectively. Shell Norco Refinery certified

compliance with the provisions of this subpart at least every three years to verify that procedures and practices developed under this subpart are adequate and are being followed. Both compliance audits were conducted by at least one person knowledgeable in the process. The audit team consists of corporate employees as well as employees from other Shell sites. When conducting its RMP compliance audits, Shell Norco Refinery uses a sample size of various units to assess different records and data. The facility determined and documented an appropriate response to each of the findings of the compliance audits and documented that deficiencies have been corrected.

40 C.F.R. § 68.81 Incident investigation – Shell Norco Refinery is required to investigate each incident which resulted in, or could reasonably have resulted in, a catastrophic release of a regulated substance. EPA reviewed Shell Norco's incident investigation procedure to determine that, if such an incident occurred, the facility would initiate the investigation, prepare the report, and document, correct, and communicate the incident investigation findings according to the RMP regulations. EPA determined that, when required, Shell Norco prepared reports at the conclusion of investigations which included at a minimum: (1) the date of the incident; (2) the date the investigation began; (3) a description of the incident; (4) the factors that contributed to the incident; and, (5) any recommendations resulting from the investigation. Based on the records reviewed, Shell Norco Refinery promptly addressed and resolved investigation findings and recommendations and documented the resolutions and corrective actions.

40 C.F.R. § 68.83- Employee Participation – LDEQ reviewed Shell Norco Refinery's written plan of action regarding the implementation of the employee participation. This plan outlines how Shell Norco Refinery consults with employees and their representatives on the conduct and development of process hazards analyses and on the development of the other elements of process safety management. The plan appeared to meet rule requirements.

40 C.F.R. § 68.85 Hot work permit – LDEQ reviewed hot work permits issued by Shell Norco Refinery. Each permit reviewed properly documented that fire prevention and protection requirements were implemented prior to beginning hot work operations. The permits reviewed also indicated the dates authorized for hot work and identified the object on which the hot work was performed.

40 C.F.R. § 68.87 Contractors – Shell Norco Refinery uses the online system *Avetta* to obtain and evaluate information regarding a contract owner or operator's safety performance and programs when selecting a contractor. Shell Norco developed a system to ensure contractors are informed of the known potential fire, explosion, or toxic release hazards related to the contractors' work and the process. All contractors receive training through the local safety council and receive site orientations before starting work. EPA reviewed examples of Shell Norco's audits of contractor performance.

Subpart E- Emergency Response

40 C.F.R. § 68.90 Applicability – Shell Norco Refinery is a responding stationary source and must comply with the requirements of §§ 68.93, 68.95, and 68.96.

40 C.F.R. § 68.93 – Emergency response coordination activities – Shell Norco Refinery coordinates response needs with local emergency planning and response organizations to determine how the stationary source is addressed in the community emergency response plan, to ensure that local response organizations are aware of the regulated substances at the stationary source, their quantities, the risks presented by covered processes, and the resources and capabilities at the stationary source to respond to an accidental release of a regulated substance. Shell Norco Refinery attends the St. Charles

Parish Local Emergency Planning Committee meetings. EPA and LDEQ noted that Shell Norco Refinery did not properly document its coordination with local authorities. Records did not include the names of individuals involved, their contact information (phone number, email address, and organizational affiliations), the dates of coordination activities, or the nature of coordination activities [**AOC #8 - 40 C.F.R. § 68.93**].

40 C.F.R. § 68.95 Emergency response program – EPA reviewed Shell Norco Refinery’s emergency response plan. The plan includes: procedures for informing the public and local emergency response agencies about accidental releases; documentation of proper first aid and emergency medical treatment necessary to treat accidental human exposures; and, procedures and measures for emergency response after an accidental release of a regulated substance. The plan also includes procedures for the use of emergency response equipment, and for its inspection, testing, and maintenance, and training for employee responders in relevant emergency response procedures. Shell Norco Refinery employs 20 professional full time emergency responders, and other employees voluntarily serve on the emergency response team (ERT). Starting in 2021, Shell Norco Refinery required all newly hired operators to receive fire training and to serve on the ERT. EPA and LDEQ reviewed inspection and testing records for various emergency response equipment as well as training records for those who serve on the ERT.

40 C.F.R. § 68.96 Emergency response exercises – As a part of coordination with local emergency response officials required by 40 C.F.R. § 68.93, Shell Norco Refinery will be required to conduct an emergency response tabletop exercise before December 21, 2026, and at a minimum of at least once every three years thereafter.

Subpart G- Risk Management Plan

40 C.F.R. § 68.190 Updates – Shell Norco Refinery resubmitted its RMP on January 2, 2019.

40 C.F.R. § 68.195 Required corrections – Shell Norco Refinery’s next RMP re-submission is due by January 2, 2024, unless an update or correction is required by 40 C.F.R. § 68.190 and 40 C.F.R. § 68.195.

Section III – AREAS OF CONCERN

EPA Region 6 inspectors Kayla Buchanan and Howard Cole, along with LDEQ inspectors Keri Meyers, Jamie Vicknair, and Glen Jenkins, conducted a closing conference at Shell Norco Refinery on Thursday, June 30, 2021. During the closing conference, we reviewed the following Areas of Concern noted during the inspection. The mechanical integrity areas of concern (AOCs #4 and #5) were identified post-inspection and were not discussed during the closing meeting.

AOC # 1: Process Hazard Analysis – 40 C.F.R. § 68.67(e) requires Shell Norco Refinery to establish a system to promptly address the team's findings and recommendations; assure that the recommendations are resolved in a timely manner and that the resolution is documented; document what actions are to be taken; complete actions as soon as possible; develop a written schedule of when these actions are to be completed; communicate the actions to operating, maintenance and other employees whose work assignments are in the process and who may be affected by the recommendations or actions.

Shell Norco Refinery tracks all action items generated during a PHA in an online system, RADAR. Shell Norco Refinery was unable to locate some the 2017 Alkylation action items in the RADAR system.

AOC #2: Training - 40 C.F.R. § 68.71(b) requires Shell Norco Refinery to train each employee presently involved in operating a process, and each employee before being involved in operating a newly assigned process, in an overview of the process and in the operating procedures.

One operator was hired February 25, 2019, but did not complete his initial operator certification until January 6, 2020. This operator was working in the covered process without the required initial training during this period.

AOC #3: Training - 40 C.F.R. § 68.71(b) requires Shell Norco Refinery to provide refresher training at least every three years, and more often, if necessary, to each employee involved in operating a process to assure that the employee understands and adheres to the current operating procedures of the process.

Three operators were late for their refresher training, and at least one operator was 21 months overdue.

AOC #4, 5: Mechanical Integrity – 40 C.F.R. § 68.73(d)(1) and (d)(2) requires Shell Norco Refinery to perform inspections and test on process equipment, and the inspections and testing procedures must follow recognized and general accepted good practices.

Shell Norco Refinery failed to perform inspections and tests on some equipment and failed to ensure its inspection and testing procedures followed referenced standards and/or recognized and generally accepted good engineering practices, as outlined in the mechanical integrity narrative on pages 5 – 8 in Section II Observations of this report.

AOC #6: Management of Change – 40 C.F.R. § 68.75(a) requires Shell Norco Refinery to establish and implement written procedures to manage changes (except for “replacements in kind”) to process chemicals, technology, equipment, and procedures; and changes to stationary sources that affect a covered process

Shell Norco Refinery failed to complete a management of change for the out-of-service equipment as outlined in the management of change narrative and Table 1 on pages 8 - 9 in Section II Observations of this report.

AOC #7: Management of Change – 40 C.F.R. § 68.75(c) requires Shell Norco Refinery to inform and train employees involved in operating a process, and maintenance and contract employees whose job tasks will be affected by a change, on the change prior to start-up of the process or affected part of the process.

Shell Norco Refinery was unable to provide documentation that employees and contractors affected by changes to the covered the processes received training for MOCs.

AOC #8: Emergency response coordination activities – 40 C.F.R. § 68.93(c) requires Shell Norco Refinery to document coordination with local authorities, including: the names of individuals involved and their contact information (phone number, email address, and organizational affiliations); dates of coordination activities; and nature of coordination activities.

Shell Norco Refinery could not produce this documentation.

Section IV – FOLLOW UP

- On July 20, 2022, and August 3, 2022, EPA met with Shell Norco Refinery to provide further clarity on AOCs #6 and #7.
- On August 30, Shell Norco Refinery provided EPA with additional documentation that they believe supports compliance with API 510 and 570 and addresses the mechanical integrity AOCs #4 and #5.

Section V – LIST OF APPENDICES

All Appendices other than Appendix 1 are classified as Confidential Business Information (CBI) or Sensitive Appendices and are not included in the online published inspection report. CBI Appendices include documents that are claimed CBI by the facility. Sensitive Appendices may include appendices that will not be posted but are not explicitly CBI. These could include Personally Identifiable Information (PII) or Homeland Security sensitive information.

Appendix 1 – Opening and closing conference sign-in sheets

Appendix 2 – 2017 Alkylation action

Appendix 3 – Training Records

Appendix 4 – 2021 Compliance Audit