EPA United States Environmental Protection Agency

Region 6 - Enforcement & Compliance Assurance Division

INSPECTION REPORT

Inspection Date(s):	02/25-28/2020	
Media Program:	Air	
Regulatory Program(s)	RMP	
Company Name:	**Chevron Phillips Chemical Company LP**	
Facility Name:	**Chevron Phillips Chemical Company LP: Orange Plant**	
Facility Physical Location:	5309 Farm Market Road 1006	
(city, state, zip code)	Orange, Texas, 77630	
Mailing address:	PO Box 7400	
(city, state, zip code)	Orange, Texas,77631	
County/Parish:	Orange County	
Facility Phone Number	(409) 882-6200	
Facility Contact:	Craig Lemons	Plant Manager
	LEMONMC@cpchem.com	
FRS Number:	110034635367	
Identification/Permit Number:	Air Operating Permit ID:O-01310	
Media Identifier Number:	RMP # 100000049137	
NAICS:	325211	
SIC:	2821	
Personnel participating in inspection:		
Kate Dean	Chevron Phillips Chemical	Health and Safety Supervisor
Miranda Stansifer	Chevron Phillips Chemical	Engineering Superintendent
Davis Turner	Chevron Phillips Chemical	Technical Manager
Jason Woods	Chevron Phillips Chemical	Environmental, Health, Safety & Security (EHSS) Mgr.
D.A. Duggar	Chevron Phillips Chemical	EHSS Counsel
Heather Clark	Chevron Phillips Chemical	Process Safety Management (PSM) Engineer
Jim Dykes	Chevron Phillips Chemical	Asset Integrity
Shannon Richter	Chevron Phillips Chemical	Operation Excellence
Leonard Powell Jr.	Chevron Phillips Chemical	Operations Supervisor
Phil Cuevas	Chevron Phillips Chemical	PSM Superintendent
Moira Layman	Chevron Phillips Chemical	Environmental Superintendent
Gira James	Chevron Phillips Chemical	Environmental Specialist
Lisa Whitman	Chevron Phillips Chemical	EHSS Admin
Aurora Garcia	Chevron Phillips Chemical	PSM Engineer

EPA Lead Inspector Signature/Date	KAYLA BUCHANAN Digitally signed by KAYLA BUCHANAN DN: c=US, o=U.S. Government, ou=Environmental Protection Agency, cn=KAYLA BUCHANAN, 0.9.2342.19200300.100.1.1=68001003655805 Date: 2020.04.20 14:22:49 -05'00'	4/6/2020
	{Inspector name}	Date
Supervisor Signature/Date	SAMUEL TATES Digitally signed by SAMUEL TATES DN: c=US, o=U.S. Government, ou=Environmental Protection Agency, cn=SAMUEL TATES, 0.9.2342.19200300.100.1.1=68001003655433 Date: 2020.04.20 14:31:10 -05'00'	4/6/2020
	{Supervisor name}	Date

Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

I, U.S. Environmental Protection Agency (EPA) Region 6 Inspector Kayla Buchanan, arrived at Chevron Phillips Chemical Company LP: Orange Plant (Chevron Orange) for an announced inspection at 9:00 a.m. on February 25, 2020. The inspection was prompted by a regional priority. I convened an opening conference and met with several representatives from the facility ***(see Appendix 1)***. I presented my credentials to the opening conference attendees and informed them that this was an EPA inspection to determine Chevron Orange's compliance with the Clean Air Act (CAA) Sections 112(r)(1) and 112(r)(7). The scope of the inspection was a partial compliance evaluation of the facility pursuant to 40 CFR Part 68 – Chemical Accident Prevention Provisions. The Union of Operating Engineers Local 564 was present on site to participate in the inspection.

FACILITY DESCRIPTION

The Chevron Phillips Chemical Company LP Orange Plant is a manned facility located at 5309 Farm to Market Road 1006 in Orange, Texas. Chevron Orange operates two reactors to produce high density polyethylene (HDPE). The HDPE manufacturing process uses various regulated flammable chemicals such as ethylene, isobutane, propane, and isopentane to produce HDPE. Approximately 162 full time employees work at the site.

Section II - OBSERVATIONS

On February 26, 2020, I participated in a driving tour of the Chevron Orange facility. Chevron Orange employee Shannon Richter, and EHSS Counsel, D.A. Duggar, accompanied me. I observed the covered processes, equipment, operations, control rooms, and emergency equipment. I interviewed operators and asked questions about their training, the Management of Change (MOC) and Process Hazard Analysis (PHA) processes, and the facility's regular operating and emergency procedures.

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

Subpart A – General

40 C.F.R. § 68.10 Applicability – Chevron Orange is a Title V stationary source that has an air operating permit and more than the threshold quantities of flammable regulated substances in its process streams; therefore, these regulations are applicable. Chevron Orange re-submitted an RMP on August 25, 2015, which describes the processes containing regulated chemicals stored at more than threshold quantities. In addition, this facility is subject to the Occupational Safety and Health Administration's (OSHA) Process Safety Management (PSM) Standard (29 CFR § 1910.119), which categorizes Chevron Orange as a Program 3 facility.

40 C.F.R. § 68.12 General requirements - I reviewed the re-submission of Chevron Orange's Risk Management Program (RMP), which was submitted on August 25, 2015. It listed the flammable chemicals for its Program 3 process.

40 C.F.R. § 68.15 Management - I reviewed the management system implemented at Chevron Orange that oversees the implementation of the RMP elements. The facility assigned a qualified person or position that has the overall responsibility for the development, implementation, and integration of the elements.

Subpart B – Hazard Assessment

40 C.F.R. § 68.20 Applicability – Chevron Orange is a Program 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 – Chevron Orange employed the parameters specified by EPA in this rule by using the RMP*Comp ™ software. I 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 – Chevron Orange identified and analyzed three worst-case scenarios for flammable substances in its Program 3 processes using the RMP*Comp™ software, thus meeting the requirements of the regulation.

40 C.F.R. § 68.28 Alternative Release Scenario Analysis – Chevron Orange identified and analyzed at least one alternative release scenario for each flammable substance in its Program 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 – Chevron Orange used the most current (2010) Census Bureau population data and the distances to endpoints, as specified in the regulation, to calculate the population numbers reported in their RMP. Chevron Orange used the Circular Area Profiles application to define the population surrounding the facility. In addition, Chevron Orange provided a Google Earth image documenting the nearest public receptor.

40 C.F.R. § 68.33 Defining Off Site impacts - Environment – Chevron Orange 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 – Chevron Orange's most recent documented updates to its off site consequence analyses occurred in 2015.

40 C.F.R. § 68.39 Documentation - In its 2015 RMP submission, Chevron Orange identified three worst case scenarios. Chevron Orange maintained records of the 2010 off site consequence analyses for two of its three worst case scenarios. The following documentation was missing for the third worst case scenario (**Appendix 2**) (***AOC #1***):

- information on vessels or pipelines;
- substances selected for worse case and alternative release scenarios;
- information on 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.

Chevron Orange did not produce additional documentation for the off-site consequence analyses completed after 2010. According to facility representatives, they no longer have access to the data which is stored in EPA's Central Data Exchange. The gatekeeper for this information is a former employee who did not share the information needed for current staff to be able to access it.

40 C.F.R. § 68.42 Five-year accident history - I reviewed Chevron Orange's five-year accident history, and I did not identify any accidental releases from covered processes that resulted in deaths, injuries, significant property damage on site, known off site deaths, injuries, evacuations, sheltering in place, property damage, or environmental damage. I examined Chevron Orange's OSHA Form 300 logs from 2015 to present to ensure that additional releases from the facility, which could possibly be included in the facility's five-year accident history, were not omitted.

40 C.F.R. § 68.65 Process safety information (PSI) - I reviewed Chevron Orange's PSI. The 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 of the process.

I reviewed PSI which included process chemistry, as well as the safe upper and lower limits and consequences of deviation from the limits for covered process units. I reviewed selected design codes and standards employed at the facility, specifically for pressure vessels, heat exchangers, piping, pumps, valves, electrical systems, and ventilation.

40 C.F.R. § 68.67 Process Hazard Analysis (PHA) – I discussed Chevron Orange's PHA process with Heather Clark and Phil Cuevas. The facility utilizes the Hazard and Operability (HAZOP) and Layer of Protection Analysis (LOPA) methodologies to conduct PHAs. I specifically reviewed the 2018 Loop Reactor PHA, the associated reports, and the action items that resulted from the PHAs. Chevron Orange performed initial PHAs on processes covered by this part, and maintained previously revalidated PHAs every five years after the initial completion dates.

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 person who was knowledgeable in the specific PHA methodology used. Chevron Orange developed a written schedule for action completion, established a system to address the team's findings and recommendations, and ensured that the resolutions were documented.

40 C.F.R. § 68.69 Operating Procedures – I reviewed several of Chevron Orange's operating procedures. The operating procedures I reviewed addressed: the steps for each of the operating phases; the consequences of deviation and mechanisms to correct and/or avoid deviation; safety and health considerations; the properties of, and hazards presented by chemicals used in the process; the

precautions necessary to prevent exposure; quality control for raw materials; and, the safety systems and their functions.

I also reviewed Chevron Orange's safe work procedures, including lock out/tag out procedures and safe confined space entry procedures. The safe work procedures apply to both employees and contractors. Chevron Orange performs daily audits on all issued safe work permits.

Chevron Orange's operating procedures were accessible to employees via the company's shared drive. While on the facility site tour, I requested randomly selected process operators to explain, as well as demonstrate, how to access the operating procedures. All selected process operators were knowledgeable about the various ways to access the procedures.

Chevron Orange is required to annually certify that operating procedures are current and accurate. I reviewed the operating procedure certifications for the covered process. Chevron Phillips was late certifying its procedures in 2019. The certification was due in December of 2019 and was not complete at the time of inspection **(*Appendix 3)* *(AOC #2)***.

40 C.F.R. § 68.71 Training – I reviewed Chevron Orange's training program and employee training records with Randy Guerro and Rob Turner. The facility's training program ensured that each employee operating a covered process had been trained and/or tested to qualify as competent in an overview of the process and in the operating procedures that pertain to their duties. The training the operators received included an emphasis on specific health and safety hazards, emergency operations, and safe work practices. The operator training program consists of new hire training to teach operators about their basic functions, corporate expectations, and regulatory compliance rules, and unit specific orientation to teach operators about the covered process and its associated hazards. The training culminates with area qualification, which is a final exam and review of an operator's knowledge and which determines if the operator can begin work in the unit.

I reviewed training records for six randomly selected employees to ensure that initial training was documented, that each employee involved in covered operations received and understood the training, and that refresher training was administered at least every three years. One of the six operators missed refresher training that was due by April 2017 **(*Appendix 4*) *(AOC #3)***.

40 C.F.R. § 68.73 Mechanical Integrity – I reviewed the written procedures for Chevron Orange's mechanical integrity program and discussed the program with Jim Dykes, James Cook, and Ben Gifford. Chevron Orange's mechanical integrity is governed by American Petroleum Institute's (API) 510 and 570 standards. There were no inspections overdue at the time of this inspection.

Chevron Orange's mechanical integrity staff is trained in an overview of the covered fixed equipment process, its hazards, and in the procedures applicable to employee job tasks. The facility utilizes contract employees who report to Chevron Orange inspectors and assist with mechanical integrity inspections. The number of contract employees fluctuates during turnarounds and special projects.

Chevron Orange uses *Meridian* Software to maintain its inspection program records. I reviewed mechanical integrity inspection documentation for reactors R-1402, R-2400, pressure vessel V-501, and their associated piping, as well as piping rack P-SH31. The documentation identified the date of the

inspection or test, the name of the person who performed the inspection or test, the serial number or other identifier of the equipment on which the inspection or test was performed, a description of the inspection or test performed, and the results of the inspection or test.

I spoke with Jim Dykes about Chevron Orange's preventative maintenance program. Chevron Orange has a vibration monitoring system that monitors its rotating equipment. Preventative maintenance inspections are set based on the criticality of the equipment. I reviewed a maintenance plan for pump P-702.

40 C.F.R. § 68.75 Management of Change (MOC) - I reviewed Chevron Orange's MOC procedure and various MOCs. The written MOC procedure assured the facility managed changes to process chemicals, technology, equipment, procedures, and changes to stationary sources that affect a covered process. The procedure assured that the following considerations were addressed prior to any change: technical basis for change**;** impact of change on safety and health; modifications to operating procedures; necessary time period for the change; and, authorization requirements for a proposed change.

The facility must ensure that Chevron Orange and contract employees involved in operating and maintaining a covered process, and whose jobs are affected by a change, are informed of and trained in the change prior to startup of an affected part of the process. The facility requires, at a minimum, completion of a computer-based awareness training. For each MOC I reviewed, I also reviewed the training records for employees whose jobs were affected by that MOC. *eSOMS*, an electronic operations management system, is used to communicate changes due to MOCs, as well as other information that must be reviewed by operators before starting their shifts. Awareness training for MOC# M20183597 was issued via *eSOMS* a month after the startup date **(*Appendix 5*) *(AOC #4)***.

If a change also resulted in a change to safety information, this subpart requires such information be updated accordingly. I reviewed several MOCs that required such a change, and the necessary information was updated, as required by the regulation.

40 C.F.R. § 68.77 Pre-startup review (PSSR) - I reviewed Chevron Orange's written PSSR procedures, as well as, various PSSRs completed by the facility in 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, required safety, operating, and maintenance procedures, and with adequate emergency procedures in place. The PSSRs also ensured that training of each employee involved in operating a process was completed prior to the startup of the process

40 C.F.R. § 68.79 Compliance audits - I reviewed Chevron Orange's two most recent compliance audits for its RMP process. Chevron Orange certified that they evaluated 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. Chevron Orange's compliance audits were conducted by at least one person knowledgeable in the processes and they developed a report of the audit findings. The facility determined and documented an appropriate response to each of the findings of the compliance audits.

40 C.F.R. § 68.81 Incident investigation – Chevron Orange is required to investigate each incident which resulted in or could reasonably have resulted in a catastrophic release of a regulated substance. Chevron

Orange risk-ranks each incident by actual and potential severity level. Each incident ranked 1 or higher is investigated. Incidents with a risk ranking of 3 or 4 have the potential to be catastrophic.

I reviewed four incident investigations that received a risk ranking of 3 or higher. The investigation team for these incidents included at least one person knowledgeable in the processes involved, and the incident investigation reports included the date of incident, the date the investigation began, a description of the incident, the factors that contributed to the incident, and any recommendations resulting from the investigation. Each incident investigation is required to start within 48 hours of the incident occuring. The incident investigation report did not reflect that incident 1501 was not started within this time frame. **(*Appendix 6*) *(AOC #5)***. I spoke with members of the incident investigation team for incident 1501 who stated that although the documentation was incorrect, the investigation did start on time.

40 C.F.R. § 68.83- Employee Participation - I reviewed Chevron Orange's written plan of action regarding the implementation of employee participation at its facility. Chevron Orange's written plan describes how they consult employees and their representatives on the performance and development of process hazard analyses, and on the development of the other elements of process safety management required under the rule. The action plan indicates that employees have access to process hazard analyses and to all other information that must be developed under this rule; however, during the plant tour, operators who were questioned were not familiar with how to access PHAs.

40 C.F.R. § 68.85 Hot work permit - I reviewed hot work permits issued by Chevron Orange. Each permit that I reviewed documented that fire prevention and protection requirements had been implemented prior to beginning hot work operations. The permits 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 - I reviewed Chevron Orange's contractor procedure. The facility utilizes the *Avetta* online system as an initial screening tool for contractors.

Contractors receive training through the Industrial Safety Training Center or another similar safety council. Once on site, the contractors receive additional training to refresh them on the hazards present and to indoctrinate them in the Chevron Orange culture. The Chevron Orange security gate maintains a list of approved contractors, and controls the entry and exit of contract employees on site. A contactor's badge expires if they are absent for over 30 days or if their training expires.

Chevron Orange audits its contractors regularly. I reviewed the safety audit for two contractors, Emissions Monitoring Services, Inc. and Echo Maintenance Services, Ltd.

Subpart E- Emergency Response

40 C.F.R. § 68.90 Applicability- Chevron Orange employees are first responders that respond to fires and releases on site.

40 C.F.R. § 68.95 Emergency response program- I reviewed Chevron Orange's emergency response plan. The plan included: 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 included procedures for the use of emergency response equipment, and for its inspection, testing, and maintenance. I reviewed inspection records for various emergency response equipment, including fire hydrants, monitors, and the fire truck. All operators are trained in basic first aid. Emergency Response Team (ERT) members may receive fire and hazardous materials (HAZMAT) training, rescue training, or medic training. I reviewed training records for employees on the ERT to ensure they were receiving training as prescribed in the emergency response plan.

Chevron Orange is a part of the Orange County Local emergency planning committee (LEPC) and attends meetings once a month.

Subpart G- Risk Management Plan

40 C.F.R. § 68.190 Updates- Chevron Orange resubmitted its RMP on August 26, 2015.

40 C.F.R. § 68.195 Required corrections- Chevron Orange's next RMP re-submission is due by August 26, 2020, unless an update or correction is required by 40 CFR § 68.190 and 40 CFR § 68.195.

Section III – AREAS OF CONCERN

1. **40 C.F.R. § 68.39** requires Chevron Orange to maintain specific documentation for its worst-case and alternative release scenarios. Chevron Orange did not maintain all of the required documentation for the scenarios in its 2015 RMP submission.

2. **40 C.F.R. § 68.69 (c)** requires Chevron Orange to certify annually that its operating procedures are current and accurate. Chevron Orange has not certified its operating procedures for 2019.

3. **40 C.F.R. § 68.71(b)** requires Chevron Orange to provide refresher training at least every three years to each employee involved in operating a process. In 2017, at least one employee did not receive refresher training when it was due.

4. **40 C.F.R. § 68.75(c)** requires Chevron Orange to inform and train employees whose job tasks will be affected by a change in the process prior to start-up of the process. Chevron Orange did not inform and train employees about a change that occurred prior to the start up of the process for MOC# M20183597.

5. **40 C.F.R. § 68.81(b)** requires Chevron Orange to initiate its incident investigation as promptly as possible, but not later than 48 hours following the incident. Chevron did not initiate incident investigation 1501 within 48 hours.

I conducted a closing conference for the inspection at Chevron Phillips Chemical Company LP: Orange Plant at 4:00 pm on February 27, 2020. During the closing conference, I reviewed the five Areas of Concern noted during the inspection. I discussed the circumstances that lead to AOC #5 with facility representatives during the inspection; however, it wasn't until further review after the conclusion of the

inspection that I determined it would be an AOC. Before concluding the inspection, I provided D.A. Duggar a list of all documents I took off site for further review.

Section IV – FOLLOW UP

The following information was received by EPA on March 5 and 23, 2020, respectively, after exiting the Facility on February 27, 2020:

- 2015-2018 Operating procedure certifications
- 2019 Operating procedure certifications

Section V – LIST OF APPENDICES

Appendix 1 – Opening Conference Sign-in Sheet

CBI Appendices (not included in published version of the report

Appendix 2 – 2015 RMP Submission
Appendix 3 – 2019 Procedure Certification Statement
Appendix 4 – Training Records for Select Employees
Appendix 5 – MOC# M20183597
Appendix 6 – Incident Investigation Report #1501