

Region 6 - Enforcement & Compliance Assurance Division

INSPECTION REPORT

Inspection Date(s):	January 6 - 10, 2025	
Media Program:	Air	
Regulatory Program(s)	Clean Air Act Section 112(r) and 40 Code of Federal Regulations (C.F.R.) Part 68 Chemical Accident Prevention Provisions – Risk Management Program (RMP)	
Company Name:	Deer Park Refining, LP	
Facility Name:	Deer Park Refinery	
Facility Physical Location:	5900 Highway 225	
(city, state, zip code)	Deer Park, Texas 77536	
Mailing address:	(same as above)	
(city, state, zip code)	(same as above)	
County/Parish:	Harris County	
Facility Phone Number	(713)-245-7301	
Facility Contact:	Calvin Greene	Environmental Manager
	Calvin.greene@deerparkrefinery.com	
FRS Number:	110071434388	
Identification/Permit Number:	Air Permit ID: O-01669	
Media Identifier Number:	RMP: 1000 0013 1653	
NAICS:	32411 Petroleum Refineries	
SIC:	2911	
Personnel participating in inspection:		
Howard Cole	EPA Region 6	Inspector
Aimee Boss	EPA Region 6	Inspector
Charese Simpson	EPA Region 6	Inspector
Calvin Greene	Deer Park Refining, LP	Environmental Manager
Phyllis Rodriguez	Deer Park Refining, LP	Environmental Engineer
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Scott Elliot	Deer Park Refining, LP	Baker Botts - Counsel
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EPA Lead Inspector Signature/Date		
	Howard Cole	Date
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	Kayla Buchanan	Date

6ENFORM-019-R8.2 (02/12/2020)

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Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

United States Environmental Protection Agency (EPA) Region 6 inspectors Howard Cole (I), Aimee Boss, and Charese Simpson, (we) arrived at the Deer Park Refining, LP (DPR) facility at 9:30 AM on Monday January 6, 2025, for an announced inspection. We met with Calvin Greene, Phyllis Rodriguez, and other facility representatives for an opening meeting. We presented credentials and informed DPR personnel that this was an EPA inspection to determine compliance with the federal Chemical Accident Prevention Program. The scope of the inspection was a partial compliance evaluation (PCE), which included an evaluation of the facility's compliance with the Clean Air Act (CAA) Section 112(r) and the Chemical Accident Prevention Provisions in 40 C.F.R. Part 68 and the General Duty Clause. I inquired if an employee representative was available pursuant to section 112(r)(6)(L) of the CAA to participate in this inspection and was informed that the DPR plant is a union facility, U.S. Steel Workers local 13-1.

FACILITY DESCRIPTION

DPR operates a refinery located at 5900 Highway 225 in Deer Park, Texas, 77536, along the Houston Ship Channel some 20 miles east of downtown Houston. DPR has a variety of processes which produce products such as gasoline, jet fuel, kerosene, diesel fuel, heating oil, propane, butane, asphalt, petroleum coke, and chemical feedstocks. DPR has more than the threshold quantities of nineteen (19) flammable regulated substances in its processes; therefore, the RMP regulations are applicable. The following is a list of RMP flammable substances stored in quantities above applicable threshold as designated in the RMP regulation: Hydrogen, Methane, Ethane, Ethylene [Ethene], Propane, Propylene [1-Propene], Isobutane [Propane, 2-methyl], Butane, 1-Butene, 2-Butene-cis, 2-Butene-trans [2-Butene, (E)], 1,3-butadiene, Isopentane [Butane, 2-methyl-], Pentane, Butene, 1-Pentene, cis-2-pentene, trans-2-pentene, and 2-methyl-1-butene.

DPR has a CAA Title V permit, an Air Operating Permit, and is classified under the North American Industrial Classification System (NAICS) Code 32411 Petroleum Refineries. In addition, DPR is subject to the Occupational Safety and Health Administration's (OSHA) Process Safety

Management (PSM) Standard 29 C.F.R. §1910.119, and EPA regulations, which categorizes DPR as a Program 3 facility. Approximately 2,021 full time employees work at the site, in addition to the independent contractors that work at the plant.

Section II – OBSERVATIONS

On Monday January 6, 2025, DPR provided EPA with a tour of the facility and EPA conducted a walkthrough of the area at DPR where the October 10, 2024, incident occurred, accompanied by Phyllis Rodriguez (Environmental Engineer), Calvin Greene (Environmental Manager), and other DPR representatives. EPA observed the covered process, equipment, operations, and control rooms. EPA identified DPR employees and asked questions about their training, the management of change (MOC) process, process hazard analysis (PHA) process, mechanical Integrity, and the facility's normal operating and emergency procedures. EPA also interviewed DPR employees and a union representative addressing the October 10, 2024 incident.

Incident Summary – October 10, 2024

On October 10, 2024, an incident occurred at the DPR's Amine Regeneration Unit (ARU), where hydrogen sulfide (H₂S) gas is removed from the refining process. Hydrogen sulfide is transferred by process piping to the downstream Sulfur Recovery Unit (SRU) to convert the hydrogen sulfide into sulfur. DPR operations requested assistance from contractors and issued permits allowing the contractors to isolate piping segments in Amine Regeneration Unit 6 and 7 (ARU 6/7). On the day of the incident, maintenance contractors were removing piping isolation devices, called slip blinds, from ARU 6, which was not in operation. Amine Regeneration Unit 7 (ARU 7) which was in operation, has piping located directly adjacent to ARU 6. On the day of the incident, while performing the task, workers inadvertently opened a flange on the ARU 7 piping, which had already been returned to normal operations, was pressurized and contained approximately 90% hydrogen sulfide. Approximately 27,000 pounds of hydrogen sulfide gas was emitted into the air, and to the flare, during this accidental release at the DPR. Two contract workers were fatally injured as a result of the H₂S release.

Subpart A – General

40 C.F.R. § 68.10 Applicability – DPR is the owner/operator of a stationary source that has more than the threshold quantities of nineteen (19) flammable regulated substances in its processes; therefore, the RMP regulations are applicable. DPR has a CAA Title V permit, an Air Operating Permit, and is classified under the North American Industrial Classification System (NAICS) Code 32511 Petroleum Refineries. In addition, DPR is subject to the OSHA PSM Standard 29 C.F.R. §1910.119, and EPA regulations, which categorizes DPR as a Program 3 facility. DPR submitted a Risk Management Plan (RMP) to EPA on December 3, 2021.

40 C.F.R. § 68.12 General requirements – The owner or operator of a stationary source subject to this regulation must submit a RMP, as provided in 40 C.F.R. § 68.150 to § 68.185. The RMP plan must include a registration that reflects the covered processes. EPA reviewed DPR's RMP, and it lists the flammable regulated chemicals and the associated Program 3 processes.

40 C.F.R. § 68.15 Management – DPR developed a management system to oversee the implementation of risk management program elements, documented persons responsible for implementing the individual requirements of the risk management program and defined the lines of authority using its RMP Management Organizational Chart, which lists responsibilities.

Subpart B – Hazard Assessment

40 C.F.R. § 68.20 Applicability – DPR 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 – DPR employed the parameters specified by EPA in this rule by using the RMP*Comp™ and MARPLOT software. EPA reviewed the offsite consequence analysis and supporting documentation to assure the data was accurate and correct.

40 C.F.R. § 68.25 Worse-Case Release Scenario Analysis – DPR identified and analyzed worst-case scenarios for each flammable substance in its Program 3 process using the RMP*Comp™ and MARPLOT software, thus meeting the requirements of the regulation. DPR 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 differently from those potentially affected by other scenarios identified.

40 C.F.R. § 68.28 Alternative Release Scenario Analysis – DPR identified and documented the alternative release scenario to represent all flammable substances held in a covered process, using a scenario that is likely to occur. DPR utilizes the RMP* Comp™ software, MARPLOT, and off-site consequences guidance calculations; they maintain aerial photos showing the alternative release scenario endpoint distance radius and a circle centered on the approximate location of the unit that is considered in the alternative release scenario, thus meeting the requirements of the regulation.

40 C.F.R. § 68.30 Defining Off-Site Impacts - Population – DPR 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. In addition, DPR utilizes the MARPLOT mapping program to define the affected off-site population. It was noted that the most current data is in the 2020 Census Bureau; however, MARPLOT has not been updated to reflect the most recent census data.

40 C.F.R. § 68.33 Defining Off-Site Impacts - Environment – DPR identified environmental receptors in the distance to the endpoint or in the vicinity of the facility, as appropriate, in the area maps used for the modeling.

40 C.F.R. § 68.36 Review and Update – DPR reviewed and updated the off-site consequence analyses at least once every five years, as required by this subpart.

40 C.F.R. § 68.39 Documentation – DPR 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 DPR to include all accidental releases 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. EPA reviewed DPR's five-year accident history and OSHA 300 Logs from 2020 to present. A reportable incident occurred at the site on October 10, 2024, which resulted in two (2) onsite fatalities and a shelter-in place order. DPR failed to update their RMP within 6-months of the October 10, 2024, incident (**Appendix #1**) *see AOC 17- 40 C.F.R. § 68.195(a)*.

Subpart D – Program 3 Prevention Program

40 C.F.R. § 68.65 Process Safety Information – DPR compiled written process safety information, which includes 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. Safety Data Sheets (SDSs) for the process chemicals were provided. EPA reviewed documentation concerning the technology of the process, which included a block flow diagram, process chemistry, maximum intended inventory, safe upper and lower limits for such items as temperatures, pressures, flows, or compositions and, an evaluation of the consequences of deviation for each covered process. EPA reviewed documentation pertaining to the equipment of the process including piping and instrumentation diagrams (P&IDs), electrical classification maps, relief system design and design basis, ventilation system design, design codes and standards employed, and safety systems.

DPR had multiple findings from a 2011 pressure relief study which were identified during this inspection and in the DPR 2024 compliance audit that were not addressed prior to December 2024. (**Appendices #2 and #3**) *AOC 1 – 40 C.F.R. § 68.65(d)(1)(iv)*.

DPR did not document the design basis for ventilation systems present in pressurized buildings, designated as shelter-in-place or safe havens, and/or in electrically classified (Class 1 Division 2) areas such as but not limited to the Platformer 2 Control Room and Hydro-Processing Control Room. Some of these buildings are intended to be occupied during release events and other emergencies. DPR failed to document the adequacy or effectiveness of ventilation systems in buildings located in Class 1 Division 2 areas (**Appendix #3**) *AOC 2 – 40 C.F.R. § 68.65(d)(1)(v)*.

During the walk-through, EPA observed that the facility was missing proper markings on piping in the ARU 6, ARU 7, SRU 6, and SRU 7 areas – e.g., direction of flow, color-coding to identify the hazardous material present, placement of pipe labels, and type and size of letters on pipe labels, as required by the American National Standards Institute (ANSI) and the American Society of Mechanical Engineers (ASME) Standard ANSI/ASME A13.1, Scheme for the Identification of Piping Systems. This standard is considered

a recognized and generally accepted good engineering practice for above ground piping systems (see Photo Nos. 1-20, located in **Appendix #4**).

DPR's Document "Site Pipe Rack Piping O-101, Section 4.4 Cross-Sectional Audit Process Class 1 Lines", states the following requirements apply specifically to class 1 lines:

Line Identification: The same line identification should be maintained on all pipeline documentation and labeling. The line identification wording on the line labels, pipe rack cross-sectional drawings, and on the inspection report should be consistent. The cross-sectional drawings should be updated to correct any identified discrepancies.

Line Labels: The labels should be a maximum of 100 feet apart and should be closer as appropriate when necessitated by changes in direction, elevation, or position. The labels should have a yellow background with black letters and should meet the size requirements (length of label and size of letters) as given in ANSI A13.1 (1981), Scheme for the Identification of Piping Systems.

In addition, DPR has on site pressure vessels at the facility that have atmospheric pressure relief valves/devices, which have the potential to release flammable and toxic chemicals (hydrogen sulfide) into the environment. Based on their proximities within the covered process areas, DPR failed to ensure the relief devices vent to safe locations in accordance with recognized and generally accepted good engineering practices such as, but not limited to, American Petroleum Institute (API) Standard 521, the Center for Chemical Process Safety (CCPS) Guidelines for Pressure Relief and Effluent Handling Systems, and recommendations from the Chemical Safety Board (CSB)'s March 6, 2023 Safety Alert: "Hazards Posed by Discharges from Emergency Pressure-Relief Systems". The following Columns in sour service have pressure relief valves that would release flammable hydrocarbons and hydrogen sulfide to the atmosphere: Catalytic Cracking Main Fractionator Column, Gas Fractionator Column, Catalytic Feed Hydrotreater Column, Diesel Hydrotreater Column, and the Sour Water Stripper Column (**Appendix #5**) **AOC 3 - 40 C.F.R. §68.65(d)(2)**.

40 C.F.R. § 68.67 Process hazard analysis (PHA) – DPR has a comprehensive program to help ensure that hazards associated with the various processes are identified and controlled. Within this program, each covered process is systematically examined to identify hazards and ensure that adequate controls are in place to manage these hazards. The DPR facility primarily uses the hazard and operability (HAZOP) technique to perform these evaluations. The analyses are conducted using a team of people who have operating, maintenance, and engineering expertise. 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.

EPA reviewed the following PHAs at DPR, including but not limited to: HDU-1, HDU-2, Amine Regeneration Unit 6, Amine Regeneration Unit 7, Sulfur Recovery Unit, Alkylation Unit, Benzene Extraction Unit, C4/C5 Storage, and the 2020 Facility Siting study.

DPR did not conduct an evaluation and analysis of the hazards associated with the release of hazardous chemicals (flammables and toxics) and hazardous energy sources (e.g. steam) relieving to atmosphere from atmospheric pressure relief devices and process vents, as was identified in the EPA inspection and

supported by findings identified in the 2024 Compliance Audit (**Appendix #3) AOC 4 - 40 C.F.R. §68.67(a)**).

The 2020 Facility Siting Study identified buildings in which building occupants were exposed to substances which have fire, flammable and toxic impacts. An overall risk to building occupants was evaluated, which includes factors such as probability of fatality, building occupancy, weather, time of day, etc., and is based on a single scenario involving a 1" hole release of a flammable or toxic chemical from process equipment. The study does not address modifications of buildings required to protect building occupants from all hazards related to fire, flammable, and toxic release scenarios. Therefore, DPR failed to evaluate and control the hazards of the process identified in the 2020 Facility Siting Study (**Appendix #6) AOC 5 - 40 C.F.R. § 68.67(c)(1)**).

DPR utilizes Enablon, an Integrated Risk Management software platform, to address the team's findings and recommendations, to ensure the recommendations were implemented in a timely manner, and to ensure that the resolutions were documented. The findings in DPR's 2020 Facility Siting Study contained recommendations. DPR failed to address the recommendations. In addition, the buildings stated in table 4 are currently on DPR's "Deer Park HSSE Guidelines" (revised July 2021) that contains a map that includes the shelter-in-place (SIP) buildings (**Appendix #7**). In addition, EPA requested documentation of closed PHA action items for several units, including, but not limited to: Alkylolation Unit, ARU, HDU-2, BEU-SSU, SR-4/5, SR-6/7, and SR-8. Several PHA action items were marked as closed without a documented resolution (see table 1). Additionally, some action items lack a recorded closure date, and others were closed after their respective due dates had passed (see Table 2 and 3) (**Appendix #8) AOC 6 - 40 C.F.R. § 68.67(e)**).

40 C.F.R. § 68.69 Operating Procedures – EPA reviewed DPR's written procedures which addressed: the steps for each operating phase (initial and normal startup, normal operations, temporary operations, emergency operation and shutdown, normal shutdown, and startup following a turnaround or after emergency shutdown); 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. The covered units have a shared drive where operating procedures are stored electronically.

The regulation requires that operating procedures be reviewed to assure that they reflect current operating practices and any changes to the process. It is extremely important to the safe operation of covered processes that operating procedures remain current and accurate. Paragraph 68.69(c) has two sentences which are related to each other and should not be separated to produce a different interpretation. The intent is to assure that operating procedures **at-all-times** be current and accurate. The second sentence requires they be certified annually to assure that if any procedures have been changed, they would be identified in the annual certification. Annual is the "floor" when defining "as often as necessary" for reviewing and certifying procedures. If a procedure is changed during the year, a review and certification is necessary to ensure that the operating procedures are current and accurate. DPR reviews their procedures every three (3) years and certifies them annually. This results in operating procedures being certified that have not been reviewed. The precaution against the use of outdated or inaccurate operating procedures is for the employer to review and certify annually that the operating procedures are current and accurate (see Table 7) (**Appendix #9) AOC 7 – 40 C.F.R. § 68.69(c)**).

During the inspection, EPA reviewed DPR's safe work procedures, including lock out/tag out procedures/energy isolation and opening process equipment procedures. The safe work procedures apply to both employees and contractors. However, the facility failed to develop and implement safe work practices to provide for the control of hazards during operations such as opening process equipment and lockout/tagout.

DPR H₂S procedure (S-152) requires all employees, contractors and visitors to wear a portable personal H₂S monitor placed in the breathing zone when entering the various process units. The DPR H₂S procedure also requires that employees and contractor wear portable personal H₂S monitors who perform line-opening of process equipment that may involve exposure to H₂S.

However, S-152 requires employees and contractors working in process areas to **remove their H₂S monitors** once they don supplied-air respirators or self-contained breathing apparatus (SCBA). This is not safe a work practice and is contrary to the basic principles of exposure monitoring. The OSHA standard 1910.134(d)(1)(iii) requires the employer to identify and evaluate the respiratory hazard(s) in the workplace; **this evaluation shall include a reasonable estimate of employee exposures to respiratory hazard(s)** and an identification of the contaminant's chemical state and physical form.

The purpose of the H₂S portable device (or area fixed or portable monitors) is to monitor the concentration of H₂S in the work area to determine the concentration of H₂S in the employees' breathing zone. It is most necessary when employees are working in H₂S environments which exceed the OSHA permissible exposure limit or National Institute of Occupational Safety and Health (NIOSH) and American Conference of Governmental Industrial Hygienists (ACGIH) exposure limits, or in H₂S environments which equal or exceed the H₂S concentrations which are immediately dangerous to life and health level (IDLH). **The use of respiratory protection such as supplied-air respirators does not eliminate the need for exposure monitoring.** The effectiveness of respiratory protection is dependent on several factors, including failure of the respirator, and exposure of the wearer to a life-threatening H₂S environment. Most importantly olfactory fatigue begins at approximately 100 ppm at which point the employee can no longer smell H₂S, which could lead to additional exposure resulting in death. By removing the H₂S monitor, the employee or contract employee cannot ascertain the threat of H₂S exposure in the event respiratory protection fails, or is worn incorrectly, or if a significant H₂S release is occurring during the work (**Appendix #10) AOC 8 - 40 C.F.R. § 68.69(d).**

40 C.F.R. § 68.71 Training – EPA reviewed DPR's training program and employee training records. The facility's training program ensured that each employee presently operating a covered process, and each employee newly assigned to a covered process trained or tested to qualify as competent in an overview of the process and in the operating procedures that pertain to their duties. DPR provides new operators initial training which includes an overview of the process and in the operating procedures as specified in § 68.69. The training includes specific safety and health hazards, emergency operations including shutdown, and safe work practices applicable to the employee's job tasks.

During the inspection, EPA reviewed training records for five randomly selected employees to ensure that initial and refresher training were documented, that each employee involved in covered operations received and understood the training, and refresher training was administered at least every three (3) years.

40 C.F.R. § 68.73 Mechanical Integrity – EPA reviewed the documentation of DPR’s mechanical integrity process and procedures, and inspection records. The mechanical integrity program ensures that processes continue to operate as designed. DPR has established practices and procedures to maintain pressure vessels, piping systems, relief and vent systems, controls, pumps and compressors, and emergency shutdown systems in a safe operating condition. The basic aspects of this program include: (1) conducting training, (2) developing written procedures, (3) performing inspections and test, (4) correcting identified deficiencies, (5) applying quality assurance measures, and (6) monitoring completion of required inspection and maintenance duties. In combination, these activities form a system that maintains the mechanical integrity of the process.

EPA reviewed the DPR 2024 Compliance Audit which identified several mechanical integrity items which were not compliant with API codes or the DPR mechanical integrity procedures (**Appendix #3) AOC 9 - 40 C.F.R. § 68.73(b)**).

EPA requested, and DPR provided, inspection and testing documentation for fixed equipment at the facility including pressure vessels, piping, pressure relief valve. EPA reviewed inspection and tests records (internal inspection, external inspection, inspection and test plan, ultrasonic testing) for thirty-five (35) pressure vessels. DPR failed to conduct internal inspections on nineteen (19) pressure vessels (see Table 8) in accordance with API 510 – Internal and On-stream inspection 6.5.1.1, which states “the period between internal or on-stream inspections shall not exceed one half the remaining life of the vessel or 10 years, whichever is less.” The facility also failed to comply with its own DPR Risk Based Inspection procedure I-40 – “Inspection Schedule” which provides a maximum interval for inspection of 20 years (**Appendices #11 - #14) AOC 10 - 40 C.F.R. § 68.73(d)(3)**).

40 C.F.R. § 68.75 Management of Change (MOC) – EPA reviewed DPR’s MOC procedure. The written MOC procedure assured the facility managed changes to process chemicals, technology, equipment, procedures, and changes to stationary sources that effect a covered process. The procedure assures that the following considerations are 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. EPA reviewed several MOCs that required such a change, and the information was updated as required by the regulation. However, DPR failed to implement procedures to manage changes involving the implementation and installation of pipe clamps (**Appendix #15) AOC 11 – 40 C.F.R. § 68.75(a) and § 68.75(b)**).

40 C.F.R. § 68.77 Pre-startup Safety Review (PSSR) – EPA reviewed DPR’s selected PSSR’s for the associated MOCs. DPR’s PSSRs should document when an existing source is significantly modified, a review is conducted prior to the introduction of a regulated substance into the process to assure that the construction and equipment design is completed in accordance with design specifications, and the required safety, operating, and maintenance procedures. DPR utilizes Evotix, a compliance management platform, to house their MOCs and PSSRs. DPR failed to follow their MOC Work Process (TE-04) outlining the requirements of PSSR as required by this subpart. EPA identified PSSRs that were not completed in accordance with the procedure (**Appendix #16) AOC 12 - 40 C.F.R. § 68.77(a)**).

40 C.F.R. § 68.79 Compliance Audits – EPA reviewed DPR’s two most recent compliance audits, conducted April 5-18, 2021, and April 1-4, 2024. DPR 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 DPR's employees and contractors from a process safety consulting firm. When conducting its RMP compliance audits, DPR uses procedural reviews, interviews, field verifications, and a representative sampling of records which provide insight into the adequacy of the design and implementation of the program relative to the requirements of EPA's RMP rule and OSHA PSM standards. DPR failed to promptly determine and document an appropriate response to the findings and document that the deficiencies have been corrected in the 2021 compliance audit. The 2024 compliance audit included a repeat finding (Action ID: 1287 and 1309) that had previously been identified in the 2021 compliance audit (ACTID: 086195, 087708, 087709, 087710, 087711, and 086191) (**Appendices #3) AOC 13 – 40 C.F.R. § 68.79(d)**).

40 C.F.R. § 68.81 Incident Investigation – DPR is required to investigate each incident which resulted in or could reasonably have resulted in a catastrophic release of a regulated substance. EPA reviewed the DPR incident investigation procedure to ensure 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. However, DPR failed to determine a start date and time when three (3) incident investigations began (**Appendices #3 and #17) AOC 14 – 40 C.F.R. § 68.81(b)**).

40 C.F.R. § 68.83 Employee Participation – DPR developed a written plan of action regarding the implementation of the employee participation required by this section, which is integrated into the program elements. DPR's written plan describes how they consult with employees on the performance and development of process hazard analyses, and on the development of other elements of RMP rule. The action plan provides employees access to process hazard analyses and to all other information that must be developed under this rule.

40 C.F.R. § 68.85 Hot Work Permit – EPA reviewed hot work permits issued by DPR. Each permit that was reviewed documented that fire prevention and protection requirements were 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 – EPA reviewed DPR's contractor procedure. DPR utilizes the *Avetta* contractor database to evaluate information regarding a contractor's safety performance and programs. Contractors subscribing to the *Avetta* system are graded on the following components within the database: OSHA citation verification status, safety records, insurance verification status, and deficiencies. All contractors must go through the site-specific training through the Houston Area Council. However, DPR failed to implement safe work practices for contractor employees when conducting work while using supplied-air respirators **See AOC 7 - 40 C.F.R. § 68.87(b)(4)**.

Subpart E – Emergency Response

40 C.F.R. § 68.90 Applicability – DPR is designated as a responding stationary source in case of an accidental release of a regulated substance, therefore, the facility must comply with the requirements of part 68.93, 68.95, and 68.96.

40 C.F.R. § 68.93 Emergency Response Coordination Activities – DPR maintains an emergency response program to protect employees, the public, and the environment in the event of loss of containment of hazardous materials or any other adverse consequences. The program consists of a highly trained contingent of emergency responders, fixed and mobile equipment, and arrangements with community and private organizations to either support or coordinate response and recovery. The location emergency response program is coordinated with three (3) area Local Emergency Planning Committees (LEPC).

40 C.F.R. § 68.95 Emergency response program – EPA reviewed DPR’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, for its inspection, testing, and maintenance, and for training for employees in relevant emergency response procedures. EPA reviewed inspection and testing records for various emergency response equipment and training records for those who serve on the Emergency Response Team (ERT). EPA requested inspection records from January 2024 to January 2025 for SCBAs, specifically in the ARU 6 and ARU 7 Units. DPR failed to provide SCBA inspections for March 2024 through January 2025. According to DPR, SCBAs are inspected monthly. DPR failed to maintain seven (7) fixed water pumps, considered critical equipment (**Appendices #3 and #18) AOC 15 - 40 C.F.R. § 68.95(a)(2)**).

40 C.F.R. § 68.96 Emergency Response Exercises – DPR conducts periodic emergency drills in cooperation with the area LEPC, local municipal fire departments, and the Channel Industries Mutual Aid Organization (CIMA). DPR coordinates response needs with local emergency planning and response organizations to ensure that they 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. As a part of coordination with local emergency response officials required by 40 C.F.R. § 68.93, DPR 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. § 68.115(a) Threshold determination and 40 C.F.R. § 68.160(a) Registration

DPR did not consider H₂S as a regulated toxic substance in their process and failed to list or update December 3, 2021, RMP to include H₂S as a toxic substance present above the threshold quantity. According to 40 C.F.R 68.3, the definition of process means any activity involving a regulated substance including any use, storage, manufacturing, handling, or on-site movement of such substances, or combination of these activities. For the purposes of this definition, any group of vessels that are interconnected, or separate vessels that are located such that a regulated substance could be involved in a potential release, shall be considered a single process (**Appendix #1) AOC 16 – 40 C.F.R. §68.160(a)**).

40 C.F.R. § 68.190 Updates – DPR’s RMP was re-submitted on December 3, 2021.

40 C.F.R. § 68.195 Required corrections – DPR’s next RMP registration re-submission is due by December 3, 2026, unless an update or correction is required by 40 C.F.R. 68.190 or 40 C.F.R. Section 68.195 required an update prior to the five-year renewal deadline. DPR failed to submit the data required under §§ 68.168, 68.170(j), and 68.175(l) within six months of the accidental release of a regulated substance and extremely hazardous substance which occurred on October 10, 2024. Additionally, DPR failed to report the October 10, 2024, incident in their 2024 OSHA 300 Log. However, it was documented on a spreadsheet provided to EPA during the inspection (**Appendices #1 and #19) AOC 17 – 40 C.F.R. § 68.195(a).**

40 C.F.R. § 68.210 Availability of information to the public – DPR is required to hold a public meeting to provide information required under § 68.42(b), no later than 90 days after any RMP reportable accident at the stationary source with any known offsite impact (e.g. known evacuations or sheltering in place), specified in § 68.42(a). During the inspection, EPA requested information documenting whether DPR held a public meeting regarding the October 10, 2024, incident. DPR failed to provide any information asserting that a public meeting had been held **AOC 18 – 40 C.F.R. § 68.210.**

CAA Section 112(r)(1) General Duty Clause: “Section 112(r)(1) states: Prevention of Accidental Releases (1) Purpose and General Duty - It shall be the objective of the regulations and programs authorized under this subsection to prevent the accidental release and to minimize the consequences of any such release of any substance listed pursuant to paragraph (3) or any other extremely hazardous substance.

DPR failed to properly implement their own procedures S-102, S-104, and S-114, and developed a procedure S-152, representing an unsafe work practice, which failed to identify hazards and did not minimize the consequences of accidental releases which do occur” (**Appendix #20) AOC 19 – General Duty Clause.**

Section III – AREAS OF CONCERN

AOC 1 – Process Safety Information - 40 C.F.R. § 68.65(d)(1)(iv) requires information pertaining to the equipment in the process to include relief system design and design basis.

- i. Prior to 2025, DPR failed to address and document findings from a 2011 pressure relief study that identified sizing issues for twenty-one (21) pressure relief devices which needed to be analyzed, risk assessed and given due dates for strategies and implementation of mitigation as identified in the 2024 compliance audit.
- ii. DPR failed to document mitigation of multiple relief system gaps, concerns, and unresolved data identified in 2011 SR8 Safeguarding Revalidation Study by 120 days post turnaround.
- iii. DPR failed to document the installation of thermal expansion relief valve RVN-94956 to protect the shell side of E-99608 to mitigate a finding identified in the 2011, Sulfur Recovery Unit 8, pressure relief valve safeguarding revalidation study.

AOC 2 – Process Safety Information - 40 C.F.R. § 68.65(d)(1)(v) requires information pertaining to the equipment in the process shall include the ventilation system design.

- i. DPR failed to document the design process safety information for ventilation systems present in pressurized buildings, designated as shelter-in-place or safe havens, and/or in electrically classified (Class 1 Division 2) areas such as but not limited to the Platformer 2 Control Room and Hydro-Processing Control Room. Some of these buildings are intended to be occupied during release events and other emergencies. This was an audit finding in the 2024 Compliance Audit.
- ii. DPR failed to document the adequacy or effectiveness of ventilation systems in buildings located in Class 1 Division 2 areas. Inspection and testing to ensure sufficient ventilation, proper sealing of doors and windows, monitoring and alarms to confirm that positive pressure for the building is maintained; in accordance with good engineering practices recognized in NFPA 496. This was an audit finding in the 2024 Compliance Audit.

AOC 3 – Process Safety Information (Information pertaining to the equipment in the process) - 40 C.F.R. § 68.65(d)(2) requires the owner or operator to document that equipment complies with recognized and generally accepted good engineering practices complies with recognized and generally accepted good engineering practice.

- i. DPR failed to properly label process equipment piping (see Photo Nos. 1-20, located in **Appendix #4**). During the walk-through, EPA observed that the facility was missing proper markings on piping in the ARU 6, ARU 7, SRU 6, and SRU 7 areas – e.g., direction of flow, color-coding to identify the hazardous material present, placement of pipe labels, and type and size of letters on pipe labels, as required by the American National Standards Institute (ANSI) and the American Society of Mechanical Engineers (ASME) Standard ANSI/ASME A13.1, Scheme for the Identification of Piping Systems. This standard is considered a Recognized and Generally Accepted Good Engineering Practice for above ground piping systems.
- ii. DPR has on site pressure vessels at the facility that have atmospheric pressure relief valves/devices, which have the potential to release flammable and toxic chemicals (hydrogen sulfide) into the environment. Based on their proximities within the covered process areas, DPR failed to ensure the relief devices vent to safe locations in accordance with recognized and generally accepted good engineering practices such as, but not limited to, American Petroleum Institute (API) Standard 521, the Center for Chemical Process Safety (CCPS) Guidelines for Pressure Relief and Effluent Handling Systems, and recommendations from the Chemical Safety Board (CSB)'s March 6, 2023 Safety Alert: "Hazards Posed by Discharges from Emergency Pressure-Relief Systems". The following Columns in sour service have pressure relief valves that would release flammable hydrocarbons and hydrogen sulfide to the atmosphere:
 - 1. Catalytic Cracking Main Fractionator Column
 - 2. Gas Fractionator Column
 - 3. Catalytic Feed Hydrotreater Column
 - 4. Diesel Hydrotreater Column
 - 5. Sour Water Stripper Column

AOC 4 –Process Hazard Analysis - 40 C.F.R. § 68.67(a) requires that the process hazard analysis shall be appropriate to the complexity of the process and shall identify, evaluate, and control the hazards involved in the process.

DPR failed to perform a process hazard analysis that was appropriate to the complexity of the process. DPR did not conduct an evaluation and analysis of the hazards associated with the release of hazardous chemicals (flammables and toxics) and hazardous energy sources (e.g. steam) relieving to atmosphere from atmospheric pressure relief devices and process vents. This was discovered by EPA during the inspection and identified as a finding in the 2024 Compliance Audit.

AOC 5 – Process Hazard Analysis - 40 C.F.R § 40 C.F.R. § 68.67(c)(1) requires that the process hazard analysis shall address the hazards of the process.

The PHA shall address the hazards associated with facility siting and be appropriate to the complexity of the process and shall identify, evaluate, and control the hazards involved in the process. DPR failed to evaluate and control the hazards of the process identified in the Deer Park 2020 Facility Siting Study. The facility siting study included major findings:

1. FN Curve for CB 84 OP-III Control Room (Board-Field) crosses the intolerable line
2. Flammable and fire impact assessment shows that:
 - a. Nineteen (19) occupied buildings are in the flammable gas impact area.
 - b. Sixteen (16) occupied buildings are in the 9.5 kW /m2 fire heat impact area.
 - c. Seventeen (17) occupied buildings are in the 6.3 kW /m2 fire heat impact area. (This includes the sixteen (16) buildings above).
3. Toxic impact assessment show that:
 - a. Twenty-six (26) occupied buildings are in the H₂S toxic impact area.
 - b. About one hundred thirty-nine (139) occupied buildings are in the H₂S toxic impact area.
 - c. RB 120 SHCU Control Room (Field) is in the NH₃ toxic impact area.
 - d. Aromatics Training Blast Resistant Modules is in the Benzene toxic impact area.
4. Third party toxic impact assessment show that:
 - a. The whole Deer Park site is in the OXY chlorine (Cl₂) toxic impact area.
 - b. There are sixty-six (66) occupied buildings are in the HEXION (Methyl Mercaptan) (MESH) impact zone for F2 (with sixteen (16) buildings having occupants during nighttime) & sixty (60) occupied buildings for D5.
 - c. There are eight (8) occupied buildings are in the OXY (ethylene dichloride) EDC impact zone for F2 (with three (3) buildings having occupants during nighttime) & five (5) occupied buildings for D5.
 - d. There are six (6) occupied buildings are in the OXY hydrogen chloride (HCl) impact zone for F2 (with three (3) buildings having occupants during nighttime) & two (2) occupied buildings for D5.
5. Fire and toxic impacts are present in the emergency plan Assembly Areas.

AOC 6 – Process Hazard Analysis - 40 C.F.R. § 68.67(e) requires that the owner or operator shall 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.

DPR failed 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; and develop a written schedule of when these actions are to be completed. EPA requested documentation of closed PHA action items for several units, including, but not limited to: Alkylation Unit, ARU, HDU-2, BEU-SSU, SR-4/5, SR-6/7, and SR-8. Several PHA action items were marked as closed without documented resolution (see Table 1). Additionally, some action items lack a recorded closure date, and others were closed after their respective due dates had passed (see Table 2 and 3).

Table 1 – Action items closed without documented resolution

Action ID	Assessment Type	Date Closed
123	2022 Alky PHA	4/6/2023
171	2018 Alky PHA	1/15/2023
366	2022 Alky PHA	8/14/2023
451	2023 ARU PHA	1/15/2024
453	2023 ARU PHA	1/15/2024
499	2022 Alky PHA	7/19/2024
500	2022 Alky PHA	8/5/2024
501	2022 Alky PHA	5/21/2024
502	2022 Alky PHA	8/7/2024
932	2023 HDU-2 PHA	4/11/2024
933	2023 HDU-2 PHA	3/20/2024

Table 2 – Action items closed after due date

Action ID	Assessment Type	Due Date	Date Closed
ACTID-084301	2021 BEU-SSU PHA	3/23/2023	3/29/2023
ACTID-084299	2021 BEU-SSU PHA	3/23/2023	3/30/2023
ACTID-084300	2021 BEU-SSU PHA	3/23/2023	3/30/2023
ACTID-084303	2021 BEU-SSU PHA	3/23/2023	3/30/2023
ACTID-084301	2021 BEU-SSU PHA	3/23/2023	3/29/2023
ACTID-084299	2021 BEU-SSU PHA	3/23/2023	3/30/2023
ACTID-084300	2021 BEU-SSU PHA	3/23/2023	3/30/2023

ACTID-084303	2021 BEU-SSU PHA	3/23/2023	3/30/2023
ACTID-200108	2022 ALKY PHA	4/3/2023	4/6/2023
ACTID-200108	2022 ALKY PHA	4/3/2023	4/6/2023
ACTID-200193	2023 SR-4 PHA	10/15/2023	10/16/2023
ACTID-200176	2023 SR-5 PHA	10/28/2023	11/16/2023

Table 3 – No closing date

Action ID	Assessment Type	Due Date	Date Closed
ACTID-200205	2023 SR-8 PHA	2/20/2024	None listed
933	2023 HDU-2 PHA	4/5/2024	None listed
934	2023 HDU-2 PHA	4/5/2024	None listed
935	2023 HDU-2 PHA	4/5/2024	None listed
937	2023 HDU-2 PHA	4/5/2024	None listed
939	2023 HDU-2 PHA	4/5/2024	None listed
941	2023 HDU-2 PHA	4/5/2024	None listed
942	2023 HDU-2 PHA	4/5/2024	None listed
944	2023 HDU-2 PHA	4/5/2024	None listed
947	2023 HDU-2 PHA	4/5/2024	None listed
941	2023 HDU-2 PHA	4/5/2024	None listed
ACTID-200190	2023 SR-4 PHA	4/15/2024	None listed
ACTID-200195	2023 SR-4 PHA	4/15/2024	None listed
ACTID-200111	2022 ALKY PHA	8/15/2024	None listed
915	2023 SR-6/7 PHA	5/28/2024	None listed
917	2023 SR-6/7 PHA	5/28/2024	None listed
921	2023 SR-6/7 PHA	5/28/2024	None listed
922	2023 SR-6/7 PHA	5/28/2024	None listed
924	2023 SR-6/7 PHA	5/28/2024	None listed
926	2023 SR-6/7 PHA	5/28/2024	None listed
932	2023 HDU-2 PHA	6/5/2024	None listed
ACTID-200113	2022 ALKY PHA	8/15/2024	None listed

In addition, the DPR 2020 Facility Siting Study findings contained the following recommendations (see Table 4). These recommendations were not addressed. The buildings stated in the table below are currently on DPR's "Deer Park HSSE Guidelines" (revised July 2021) that contains a map that includes the SIPs.

Table 4

Gaps	Recommendations	Buildings Impacted
Shelter-In-Place cannot meet SIP conditions even with improved air tightness	Delist the SIP from the List	(1) RB 64 Automotive Garage (SIP) (2) RB 72 CCU CR (SIP Field) (3) CB 42 Chemical Distribution Office (CDO)
Notes for each building		
(1) RB 64 Automotive Garage (SIP): This building is not a suitable SIP for Flammable Gas impact. High H₂S toxic impact during daytime is unlikely; improve the airtightness (Door/ceiling sealing) of the SIP room designate it for Toxic SIP only (not for fire and flammable gas impact) and if it is occupied at night. (2) RB 72 CCU CR (SIP Field): Current building status cannot maintain a safe environment with the flammable liquid release from CCU. So, the SIP should be removed from SIP list, or at most be designated for H₂S Toxic impact only with significant improvement on the ceiling and vent sealing of the SIP room. (3) CB 42 Chemical Distribution Office (CDO): Impacted by H₂S high concentration toxic cloud both in daytime and nighttime. Toxic H₂S can infiltrate into the building in minutes or less. Escape pack should be provided for safe evacuation.		

AOC 7 –Operating Procedures - 40 C.F.R. § 68.69(c) requires that the operating procedures shall be reviewed as often as necessary to assure that they reflect current operating practice, including changes that result from changes in process chemicals, technology, and equipment, and changes to stationary sources. The owner or operator shall certify annually that these operating procedures are current and accurate.”

- i. DPR failed to ensure that operating procedures were certified annually in 2021 and 2022; as identified in the 2024 compliance audit.
- ii. DPR failed to ensure that operating procedures are reviewed annually. DPR conducts a review of operating procedures every three (3) years.
- iii. DPR failed to review the following standard operating procedures (SOPs) annually:

Table 5

Unit	SOPs:	Review date:
ARU	- Testing of H ₂ S Monitors	12/26/2021
SRU 3/4	- Testing of H ₂ S Monitors - Thermal Reactor Acid Gas to Hot Standby - SCOT Blower KO Pot Decon - SCOT Unit Decontamination - CAG KO Pot Decontamination	12/26/2021 12/22/2021 12/23/2021 12/21/2021 12/21/2021
SR-5	- Testing of H ₂ S Monitors - SRS SIS Bypass Procedure and Mitigation Plan	12/26/2021 12/26/2021

SR6/7	- Testing of H ₂ S Monitors	12/26/2021
SR-8	- NSU-SUL-020 23 Type Seal Startup - Testing of H ₂ S monitors	10/10/2021 12/26/2021

iv. DPR failed to certify the following operating procedures are current and accurate annually:

- DPR certified operating procedures in the COKER sub-units on April 17, 2024. However, the next review date for thirty-four (34) operating procedures was after April 17, 2024; therefore, these operating procedures were certified as current before they were reviewed.
- DPR certified operating procedures in the Catalytic Cracking Unit and Alky/sub- units-units on April 8, 2024. However, the next review date for approximately 260 operating procedures was after April 8, 2024; therefore, these operating procedures were certified as current before they were reviewed.
- DPR certified the following operating procedures in the Distilling and subunits on April 24, 2024. However, the next review date for the following operating procedures was after April 24, 2024; therefore, these operating procedures were certified as current before they were reviewed.

Table 6

Distilling/sub-units:	SOPs:	Review date:
CPOP-044	RC-36200 and RC-36201 Compressor Packing Seal Drips	8/4/2024
D2SD-057	DU2 Crude Steam Out/Decontaminate	8/4/2024
DU7 Naphtha System	DU7 Naphtha System	7/7/2024
OPI60HVI	HVI Seal Oil Tank Filling	10/26/2024
VF-3 Start-up Tracking	VF-3 Start-up Tracking	10/25/2024

v. DPR certified the following operating procedures in the Dispatching SIS on April 18, 2024. However, the next review date for the following operating procedures was after April 18, 2024; therefore, these operating procedures were certified as current before they were reviewed (see Table 7, below).

Table 7

Procedure number:	Procedure name:	Next review date:
Logistics-SIS-I40	Sphere R314 I-40 SIS Mitigation Plan	10/19/2024
Logistics-SIS-I41	Sphere R315 I-41 SIS Mitigation Plan	10/19/2024
Logistics-SIS-I42	Sphere R319 I-42 SIS Mitigation Plan	10/19/2024
Logistics-SIS-I43	Sphere R321 I-43 SIS Mitigation Plan	10/6/2024
Logistics-SIS-I44	Sphere R322 I-43 SIS Mitigation Plan	10/10/2024

Logistics-SIS-I45	Sphere R324 I-45 SIS Mitigation Plan	10/17/2024
Logistics-SIS-I46	Sphere R325 I-46 SIS Mitigation Plan	10/17/2024
Logistics-SIS-I47	Sphere R342 I-47 SIS Mitigation Plan	10/19/2024
Logistics-SIS-I49	Sphere R344 I-49 SIS Mitigation Plan	10/19/2024

AOC 8 – Operating Procedures - 40 C.F.R. § 68.69(d) requires that the owner or operator shall develop and implement safe work practices to provide for the control of hazards during operations such as lockout/tagout; confined space entry; opening process equipment or piping; and control over entrance into a stationary source by maintenance, contractor, laboratory, or other support personnel. These safe work practices shall apply to employees and contractor employees.

Contractors (Owner or operator responsibilities) - 68.87(b)(4) requires that the owner or operator shall develop and implement safe work practices consistent with § 68.69(d), to control the entrance, presence, and exit of the contract owner or operator and contract employees in covered process areas.

DPR failed to develop and implement safe work practices for employees and contractor employees to provide for the control of hazards during operations such as opening process equipment and lockout/tagout. DPR requires that all personnel wear portable H₂S monitors positioned in their breathing zone when entering the various process units. However, Hydrogen Sulfide (H₂S) Procedure (S-152 Section 3.2 and 4.2) states and requires that employees and contractor employees utilize the following unsafe work practice which requires the worker to discontinue the use of the personal H₂S monitor when supplied-air respirators (SAR) or self-contained breathing apparatus (SCBA) are in use:

DPR procedure S-152 3.2 Maintenance: Job activities that are likely to involve an H₂S hazard:

- Wear respiratory protection
- Discontinue the use of personal H₂S monitor if SAR or SCBA are in use

4.2 Determining the Presence of H₂S:

- In non-exempted work areas, wear a personal H₂S monitor.
- In situations where a SAR or SCBA is required, such as investigating an H₂S leak, discontinue the use of personal H₂S monitor and upgrade to a pumped multi-gas detector to find the leak.

In situations where concentrations of H₂S may exist at 0.1% or greater, such as in process equipment, or where decontamination activities were likely not effective or cannot be attempted, utilize colorimetric sampling tubes to measure H₂S concentrations.

Once the personal H₂S monitor is removed, the worker cannot determine the concentration of H₂S in the work area and is then unaware of the risk and consequences posed by H₂S exposure in the event respiratory protection fails, is worn incorrectly, or if a significant H₂S release is occurring during the work.

AOC 9 – Mechanical Integrity- 40 C.F.R. § 68.73(b) requires the owner or operator shall establish and implement written procedures to maintain the on-going integrity of process equipment.

- i. DPR failed to perform forty-three (43) Pressure Equipment Integrity audits at the intervals prescribed in the mechanical integrity procedure as identified in their 2024 compliance audit.
- ii. DPR failed to perform eleven (11) Category 1, Corrective Action Inspection Requests and eighteen (18) Category 2, Corrective Action Inspection Requests which were overdue in accordance with DPR procedure O-154. A documented deferral must be in place when inspections have exceeded their assigned due dates as identified in their 2024 compliance audit.
- iii. DPR failed to establish a procedure to mitigate or escalate the risk to management for two (2) pressure vessels classified as "Extreme Risk", according to the DPR Risk Based Inspection matrix as identified in the 2024 compliance audit.
- iv. DPR failed to establish inspection procedures addressing approximately 126, Class 1 piping circuits with soil-air interface as identified in the 2024 compliance audit.
- v. DPR failed to establish an ITPM, and necessary inspection and testing tasks, for three (3) instrumented systems: LC21138, TI89180- TI89189, LC89430 as identified in the 2024 compliance audit.
- vi. DPR failed to develop a written procedure establishing an interval to monitor the pressure in the interstitial space between the rupture disk and a pressure relief valve, in accordance with ASME, API 576 and S-122; and as identified in the 2024 compliance audit.
- vii. DPR failed to implement DPR's procedure I-28:
 - a. Wet H₂S Phase 4 and 5 evaluate the results of the inspections and to plan/initiate required mitigations and corrective actions.
 - b. Underground Piping Phase 3 and 4: Establish inspection strategies and intervals. Inspection strategies will be established using BP&G 33, underground piping inspection, as a guide and entered IMS. Phase 4: Develop mitigation or replacement guidelines.

AOC 10 – Mechanical Integrity (Inspection and testing) - 40 C.F.R. § 68.73(d)(3) requires that the frequency of inspections and tests of process equipment shall be consistent with applicable manufacturers' recommendations and good engineering practices, and more frequently if determined to be necessary by prior operating experience

- i. DPR failed to conduct internal inspections on multiple pressure vessels. According to API 510 – Internal and On-stream inspection, "unless justified by a Risk-based assessment (RBI), the period between internal or on-stream inspections shall not exceed one half the remaining life of the vessel or 10 years, whichever is less. However, DPR procedure I-40, "Risk Based Inspection-

Inspection Schedule, sets a maximum interval of 240 months (20 years). The following pressure vessels are overdue for an internal inspection.

Table 8

Pressure Vessels:	Last Internal Inspection Date:	Overdue:
V-5607 DIB	2001	24+ years
VN05605 Depropanizer Column	1/27/1999	26+ years
VN0570/05071/5072/5073 Propane Bullet NW Bank	4/2001	24+ years
VN05082/5083/5084/5085 Propane Bullet SE Bank	4/2001	24+ years
VN05074/5075/5076/5077 Propane Bullet SW Bank	4/2001	24+ years
VN05112 DIH Column	3/31/2013	12+ years
V-93505 Amine Regenerator Reflux Drum	2/2001	24+ years
E-93001A ARU 6 Heat Exchanger	2/2007	18+ years
E-93001 Sour Water Flash Drum	2/2001	24+ years
V-93101 Sour Water Flash Drum	2/1999	26+ years

- ii. DPR failed to conduct maintenance in response to a Corrective Action Inspection Request addressing the West Property Flare Tip by the due date of April 21, 2024
- iii. DPR failed to conduct a corrosion and non-destructive examination/ultrasonic thickness inspection and testing on the Number 2 Reactor 4 by the due date of August 22, 2024. DPR is currently using a Risk Based Inspection interval of 30 years, although the DPR RBI procedure sets a maximum interval for pressure vessels of 20 years. The last inspection for this pressure vessel was prior to 1995.
- iv. DPR failed to conduct an inspection and non-destructive examination/ultrasonic thickness testing on the 2nd Stage Settler Overhead piping by the due date of August 7, 2024.
- v. DPR failed to conduct an external infra-red scan on the H-1000 Platformed Heater Furnace by September 13, 2024.

AOC 11 –Management of Change - 40 C.F.R. § 68.75(a) requires that the owner or operator shall 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. 40 C.F.R § 68.75(b) requires that the procedures shall assure that the following considerations are addressed prior to any change: the technical basis for the proposed change, the Impact of change on safety and health, modifications to operating procedures, necessary time period for the change; and, authorization requirements for the proposed change.

DPR failed to implement procedures to manage changes of equipment including piping systems and pressure vessels. A management of change was not implemented for the installation of pipe clamps. Pipe clamps were installed on the following piping systems without documenting the date of installation (*labeled in the pipe clamp spreadsheet as "undetermined"*); hence, the following documentation could not be established: impact of change on safety and health, modifications to operating procedures, necessary time period for the change, and authorization requirements for the proposed change.

Piping:

1. PO86109	2. PO86302	3. PO8303	4. PO86317	5. P300304	6. P303303
7. P355302A	8. P355309	9. P355315	10. P355318	11. P360311	12. P363301
13. P802317	14. P802331	15. PB17013	16. PB29371	17. PB66637	18. PB37288
19. P355312	20. PB49199	21. PB24863	22. P331203	23. NSPCFH	24. PO83301
25. PB17012					

Pressure Vessel:

TNG00324-R1 - Sour Crude External Floating Roof VN00546
- R-316 Volatiles KO to Sphere

AOC 12 – Pre-startup Safety Review (PSSR) - 40 C.F.R. § 68.77(a) requires that the owner or operator shall perform a pre-startup safety review for new stationary sources and for modified stationary sources when the modification is significant enough to require a change in the process safety information.

DPR failed to follow their MOC Work Process (TE-04) outlining the requirements of prestartup safety review as required by this subpart. EPA reviewed MOC-63510 which required a PSSR. EPA reviewed the OPS Rep Copy of #5473_PSSR checklist, and it was missing the Person Executing the Change (PEC) information and signature.

EPA reviewed MOC-63562. EPA requested the PSSR for this MOC, and it was unavailable at the time of inspection. The Evotix checklist indicated "Yes" that the PSSR was completed. Startup for this MOC was on July 11, 2024. The MOC procedure, MOC Work Process (TE-04), requires 180 days to complete B actions (post start-up action) from this date, which would be January 7, 2025.

AOC 13 – Compliance Audits - 40 C.F.R. § 68.79(d) requires that the owner or operator shall promptly determine and document an appropriate response to each of the findings of the compliance audit, and document that deficiencies have been corrected.

DPR failed to promptly determine and document an appropriate response to the findings and document that the deficiencies have been corrected in the 2021 and 2024 Compliance Audits. The 2024 Compliance Audit included repeat findings (Action ID: 1287 and 1309) that had previously been identified in the 2021 Compliance Audit (ACTID: 086195, 087708, 087709, 087710, 087711, and 086191).

AOC 14 –Incident Investigation - 40 C.F.R. § 68.81(b) requires that an incident investigation shall be initiated as promptly as possible, but not later than 48 hours following the incident.

DPR failed to determine a start date and time when the following incident investigations began, hence it cannot be determined that the following incident investigations were initiated within 48 hours as was identified in the 2024 compliance audit.

1. 2830416 – A310 venting due to SHCU upset causing product on roof
2. 2967432 – Leak on sour naphtha line from CFH/DHT tops to DU-2
3. EIMS 393 – DU-1 E-7400/01 fire

AOC 15 –Emergency Response Program - 40 C.F.R. § 68.95(a)(2) requires that the owner or operator shall develop and implement an emergency response program for the purpose of protecting public health and the environment. Such program shall include the following elements:
Procedures for the use of emergency response equipment and for its inspection, testing, and maintenance.

- i. DPR failed to provide SCBA inspections for March 2024 through January 2025. EPA requested inspection records from January 2024 to January 2025 for SCBAs, specifically in the ARU 6 and ARU 7 Units. According to DPR, SCBAs are inspected monthly.
- ii. DPR failed to inspect, test, or maintain, seven (7) fixed water pumps, considered critical equipment, which had not passed the annual performance tests for the past three (3) years (2022, 2023, and 2024). These fire water pumps were either not tested, out of service, or received an unsatisfactory rating as identified in the 2024 compliance audit.

AOC 16 – Threshold determination - 40 C.F.R. § 68.115(a) states a threshold quantity of a regulated substance listed in § 68.130 is present at a stationary source if the total quantity of the regulated substance contained in a process exceeds the threshold. **Registration - 40 C.F.R. § 68.160(a)** requires that the owner or operator shall complete a single registration form and include it in the RMP. The form shall cover all regulated substances handled in covered processes.

DPR did not consider H₂S as a regulated toxic substance in their process and failed to list or update their December 3, 2021, RMP, to include H₂S as a toxic substance present above the threshold quantity of 10,000 pounds. On October 10, 2024, DPR had an accidental release of approximately 27,000 pounds of hydrogen sulfide from the Amine Recovery Units and Sulfur Recovery Unit.

AOC 17 – Required corrections - 40 C.F.R. § 68.195(a) requires the owner or operator of a stationary source for which a RMP was submitted shall correct the RMP as follows: for any accidental release meeting the five-year accident history reporting criteria of § 68.42 and occurring after April 9, 2004, the owner or operator shall submit the data required under §§ 68.168, 68.170(j), and 68.175(l) with respect to that accident within six months of the release or by the time the RMP is updated under § 68.190, whichever is earlier. **Five-Year accident history - 40 C.F.R. § 68.42(a)** requires that the owner or operator shall include in the five-year accident history all accidental releases from covered processes that resulted in deaths, injuries, or significant property damage on site, or known **offsite** deaths, injuries, evacuations,

sheltering in place, property damage, or environmental damage.” **Five-year accident history – 40 C.F.R. § 68.168** requires that the owner or operator shall submit in the RMP the information provided in § 68.42(b) on each accident covered by § 68.42(a).

A reportable incident had occurred at the site on October 10, 2024, which resulted in two onsite fatalities and a shelter-in place order. DPR failed to update their RMP within 6-months of an incident that occurred on October 10, 2024.

AOC 18 – Availability of information to the public (Public Meetings) - 40 C.F.R. § 68.210 requires that owner or operator of a stationary source shall hold a public meeting to provide information required under § 68.42(b), no later than 90 days after any RMP reportable accident at the stationary source with any known offsite impact specified in § 68.42(a).

DPR failed to hold a public meeting to address the October 10, 2024, accidental release of H₂S which necessitated a shelter-in-place order issued for Deer Park and Pasadena, Texas. DPR failed to provide any information addressing the requirement for a public meeting being held relating to the incident.

AOC 19 – Clean Air Act (CAA) §112(r)(1) – General Duty Clause - *“Section 112(r)(1) states: Prevention of Accidental Releases (1) Purpose and General Duty - It shall be the objective of the regulations and programs authorized under this subsection to prevent the accidental release and to minimize the consequences of any such release of any substance listed pursuant to paragraph (3) or any other extremely hazardous substance. The owners and operators of stationary sources producing, processing, handling or storing such substances have a general duty, in the same manner and to the same extent as section 654, title 29 of the United States Code, to identify hazards which may result from such releases using appropriate hazard assessment techniques, to design and maintain a safe facility taking such steps as are necessary to prevent releases, and to minimize the consequences of accidental releases which do occur.”*

On October 10, 2024, an incident occurred at the DPR’s Amine Regeneration Unit (ARU), where hydrogen sulfide (H₂S) gas is removed from the refining process. Hydrogen sulfide is transferred by process piping to the downstream Sulfur Recovery Unit (SRU) to convert the hydrogen sulfide into sulfur. DPR operations requested assistance from contractors and issued permits allowing the contractors to isolate piping segments in Amine Regeneration Unit 6 and 7 (ARU 6/7). On the day of the incident, maintenance contractors were removing piping isolation devices, called slip blinds, from ARU 6, which was not in operation. Amine Regeneration Unit 7 (ARU 7) which was in operation, has piping located directly adjacent to ARU 6. On the day of the incident, while performing the task, workers inadvertently opened a flange on the ARU 7 piping, which had already been returned to normal operations, was pressurized and contained approximately 90% hydrogen sulfide. Approximately 27,000 pounds of hydrogen sulfide gas was emitted into the air, and to the flare, during this accidental release at the DPR. Two contract workers were fatally injured as a result of the H₂S release.

A contract worker performing the work, employed by Repcon, died due to exposure to H₂S. Another contract employee, who was at the site, employed by Isc Constructors, LLC., but not involved in the work performed, and located approximately 250 feet away from the point of the release, also died because of their exposure to H₂S.

Based on interviews, photos, and documents collected, including, but not limited to, procedures S-102, S-104, S-114, EPA concluded and asserts the following:

- i. DPR failed to maintain a safe facility by not using appropriate hazard assessment techniques to identify hazards resulting from the release of hydrogen sulfide, preventing the accidental release of H₂S and not minimizing the consequences of any such release of H₂S.

DPR included in Hydrogen Sulfide (H₂S) procedure (S-152 Section 3.2 and 4.2) an unsafe work practice which requires that a worker discontinue the use of their personal H₂S monitor (a hazard assessment technique) if supplied-air respirators (SAR) or SCBA are in use.

The procedure indicates when conducting maintenance (job activities that are likely to involve an H₂S hazard): Wear respiratory protection, discontinue the use of personal H₂S monitor if SAR or self-contained breathing apparatus (SCBA) are in use, and follow the respiratory protection requirements as indicated by the operator and/or work Permit. In addition, during first openings of a line or equipment that contains H₂S, personnel must use respiratory protection (minimum full face supplied air respirator or a full face SCBA).

Contract employees performing the work involving the slip blinds were wearing supplied air respirators but were not wearing H₂S monitors. There was no air monitoring performed for H₂S in and around the work area of pipes containing 90% H₂S. Without an H₂S monitor, the contract employees were unaware of the presence of H₂S, as they began removing the slip blind from the live pipe containing H₂S, until most of the flange bolts were loosened or removed. This resulted in a concentration of H₂S above levels immediately dangerous to life and health. In addition, DPR failed to provide clear instructions for contractors to safely isolating piping segments in ARU 6.

- ii. DPR failed to control the entrance and presence of contract employees in covered process areas and failed to prevent the accidental release and minimize the consequences of any such release.
 - a) The contractor employees performing the work did not sign in on the unit log prior to entering the ARU 6/7 unit to conduct work. According to DPR's S-102 procedure, "A Unit Entry Log (UEL) is used to account for people that are in an operating unit at any given time. All persons entering an operating unit other than Operations or OnShift PTLs' assigned to that operating unit must sign the UEL for accountability purposes and obtain authorization to enter the unit."
 - b) DPR procedure S-104 states that, "The Permit Issuer (PI) confirms that maintenance personnel (with tools and safety equipment) are present and ready to start. During the Joint Jobsite Inspection with craftworkers, confirms craftworkers know the work location and equipment to be worked on and all other relevant parties have been consulted and have provided their input and/or signatures authorizing the work, if applicable."
 - c) In addition, DPR procedure S-114 procedure describes the process of isolation and the lock-out/tag-out (LOTO) of process energy from plant equipment and piping. The procedure applies to the isolation of process energy before maintenance work begins on plant equipment and piping where the accidental release of process energy or the accidental activation of equipment could result in injury. S-114 states (steps 14-15), "If the task was to

- remove slip blinds, the Designated Craftworker and the Equipment Owner shall visit each blind point and remove the Energy isolation tag that corresponds to the updated Energy Isolation Folder (EIF) and initial that the blind(s) is out.”
- d) DPR did not ensure an operator was available to confirm with the contractor the correct piping equipment to be worked on prior to the incident.
 - e) DPR failed to implement safe work practices by not ensuring that the operator and contractor employees walked the job after shift change.
 - f) DPR failed to implement their S-114 procedure on October 10, 2024, to ensure safe work practices in the covered process area.
 - g) DPR failed to label piping no more than 50 feet apart on straight sections or 25 feet apart in congested areas and place labels near all valves and flanges.
- iii. DPR failed to design and maintain a safe facility by not taking such steps as are necessary to prevent H₂S from releasing into the ambient environment resulting in fatalities and injuries. DPR did not ensure that prior to the contractors performing maintenance activities that the line was properly isolated which could have prevented the hazardous chemical from releasing. In addition, DPR failed to implement safe work practices. Supporting documentation for this area of concern is provided in Appendix 20.

Closing Meeting – EPA Region 6 inspectors Howard Cole, Aimee Boss, and Charese Simpson conducted a closing conference at Deer Park Refining, LP on January 10, 2025. During the closing conference, Howard Cole reviewed the area of concerns that were noted during the inspection. Additionally, there were several AOCs identified after the conclusion of the inspection and were not included in the closing conference.

Section IV – FOLLOW UP

Additional documents were provided by Deer Park Refining, LP via SharePoint post inspection.

Section V – LIST OF APPENDICES (Confidential Business Information (CBI) appendices is not included in published version of the report)

- Appendix 1 – RMP
- Appendix 2 – 2011 SR8 Revalidation Study
- Appendix 3 – RQ2-01 RMP Compliance Audits
- Appendix 4 – Photos Nos. 1-20
- Appendix 5 – Standard Operating Procedures for CCU
- Appendix 6 – 2020 Facility Siting Study
- Appendix 7 – Deer Park HSSE Guidelines
- Appendix 8 – PHA Action Items and All PHAs
- Appendix 9 – RQ3-8 Operating Procedures
- Appendix 10 – S-152 Procedure
- Appendix 11 – Procedure I-40
- Appendix 12 – Heat Exchanger Procedure
- Appendix 13 – RQ6-1 to RQ6-23 Mechanical Integrity
- Appendix 14 – RQ3-03 Equipment Inspections

- Appendix 15 – RQ3-05 Pipe clamps
- Appendix 16 – RQ7-01 Management of Change
- Appendix 17 – Incident Investigation
- Appendix 18 – RQ5-02 SCBA inspections
- Appendix 19 – OSHA 300 logs
- Appendix 20 – GDC Supporting Documents

Note: The maintenance activities on process equipment in ARU 6 were not part of the work the contractors were performing for the turnaround.