



Region 6 - Enforcement & Compliance Assurance Division
INSPECTION REPORT

Inspection Date(s):	May 13-May 17, 2024		
Media:	Air		
Regulatory Program(s)	Clean Air Act Section 112(r) and 40 C.F.R. Part 68 Chemical Accident Prevention Provisions - Risk Management Program (RMP)		
Company Name:	Calcasieu Refining Company		
Facility Name:	Calcasieu Refining Company		
Facility Physical Location:	4359 West Tank Farm Road		
(city, state, zip code)	Lake Charles, Louisiana 70605		
Mailing address:	4359 West Tank Farm Road		
(city, state, zip code)	Lake Charles, Louisiana 70605		
County/Parish:	Calcasieu Parish		
Facility Contact:	Shannon Gore	Safety Manager	
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FRS Number:	110000449505		
Identification/Permit Number:	1000 0007 1469		
NAICS:	32411 Petroleum Refineries		
Personnel participating in inspection:			
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Signature/Date	{Howard Cole}		Date
Supervisor Signature/Date			
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SECTION I - INTRODUCTION PURPOSE OF THE INSPECTION

United States Environmental Protection Agency (EPA) Region 6 inspector Howard Cole (“I”) and Kristen Latiolais arrived at the Calcasieu Refining Company LP, (“CRC”) facility in Lake Charles, Louisiana on May 13-17, 2024. Christopher Smith, Jamie Vicknair and Glen Jenkins from the Louisiana Department of Environmental Quality (LDEQ), Chemical Accident Prevention Program, arrived at the site on May 13, 2024, and participated in the inspection. I, Kristen, and the LDEQ inspectors met with Shannon Gore (Safety Manager), Edwin Young (Technical Manager), Marney Gillmore (Calcasieu Refinery- Compliance), and Eric Baldauf (Environmental Supervisor) for an opening conference. I presented my credentials and informed CRC 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. CRC's Risk Management Plan (RMP) is listed as a Program Level Three (3), Title V process facility. CRC has a Clean Air Act (CAA) Title V Air Operating Permit, No. 0520-00050-V14/0520-00050-V18 and a North American Industry Classification System (NAICS) code of 32411- Petroleum Refinery. 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 CRC is a non-union facility. CRC, Lake Charles employs approximately 118 employees and operates 24 hours per day, 7 days per week.

FACILITY DESCRIPTION

CRC operates “The Lake Charles Crude Oil Refinery”, which is located about five miles southwest of Lake Charles, Louisiana in Calcasieu Parish. CRC is a crude topping plant located on the east side of the Calcasieu River, 4359 West Tank Farm Road. Lake Charles, Louisiana.

The Lake Charles Crude Oil Refinery currently consists of two Atmospheric Distillation Units (ADUs - CDU No. 2 and CDU No. 5), two Vacuum Tower Units (VTUs), associated process equipment, a storage terminal, product loading operations, and support utility systems (e.g., boilers and wastewater treatment). The ADUs and VTUs separate crude oil into various petroleum fractions, including, but not limited to, liquefied petroleum gas (LPG), naphtha, kerosene, diesel, and vacuum tower bottoms (VTB) and vacuum gas oil (VGO). These refined petroleum products are sold and transported offsite by barge, product pipeline, and tanker truck. The facility operates 24 hours a day and may process up to approximately 135,000 barrels per day of crude oil.

Vacuum Gas Oil (VGO) is a semi-finished type of intermediate feedstock derived from crude oil refining. VGO is created through vacuum distillation, which is a process that heats residual oil in a vacuum to lower its boiling point. This allows for distillation at temperatures that are not possible in atmospheric distillation. VGO is fed into cracking units, which upgrades it into more valuable products like gasoline and diesel.

Vacuum Tower Bottoms (VTB) is the left-over bottom product of distillation, which can be processed in cokers and used for upgrading into gasoline, diesel and gas oil. Crude oil separation is performed in a series of distillation towers, with the bottom product from each tower feeding the next from the top down. The resulting products from the distillation tower process range from gases at the top to very heavy, viscous liquids at the bottom. In all cases, these “unfinished” product streams require further processing to become useful products. Vacuum Tower Bottoms (VTB) is the heaviest material in the refinery tower. If allowed to cool to room temperature, VTB would become a solid. VTB is used to make off road fuels, off-spec fuels, biodiesel fuels ASTM B100 & B99, specialty fuels, and blending stocks.

A majority of the crude oil is brought in by barge and stored in above ground storage tanks then processed through several Crude units, Vacuum units and Stabilizer units. The plant has a 150 lb. steam boiler that supplies steam throughout the plant, cooling tower system, plant air system, wastewater treatment plant and multiple treating units that support the processing units. Naphtha, Kerosene, Diesel, Heavy Vacuum Gas Oil (HVGO) and Vacuum Tower Bottoms (VTB) products are stored in aboveground storage tanks and then transferred onto barges. LPG is stored in 2 bullet tanks which can be pumped to TARGA by pipeline or by truck using one of 2 LPG truck loading racks. The plant can also bring in crude oil by truck at one of many truck unloading racks.

CRC indicated that there is only one affected process with a regulated substance present above its threshold quantity. This process is the distillation and storage of Liquefied Petroleum Gas "LPG" in storage tanks TK- 2001A and TK-2001B. LPG is a mixture of various hydrocarbon compounds including propane, butane, and pentane. The CRC facility does not have any processes that contain any regulated toxics above threshold quantities. Hydrogen sulfide is present in the crude oil but at concentrations of less than one percent by weight of the mixture.

Process Description

The processing of crude oil into various intermediate products is based primarily on the application of heat to the feedstock materials in the distillation tower in which the crude oil is fractionated and split into various products, based on temperatures and pressures. The crude is charged to the process from crude oil storage, washed with water in the desalters to remove salt from the crude, heated through a series of heat exchangers, heated to charging temperature in the heaters, and charged to the distillation tower where various raw products are produced.

Light naphtha is the fraction boiling between 86 °F and 194 °F and consists of molecules with 5–6 carbon atoms. Liquefied petroleum gas "LPG" is a fuel gas which contains a flammable mixture of hydrocarbon gases, specifically propane, n-butane and isobutane; and can sometimes contain some propylene, butylene, and isobutene. Propylene, butylenes and various other hydrocarbons are usually also present in small concentrations.

SECTION II - OBSERVATIONS

On Wednesday, May 15, 2024, accompanied by Shannon Gore, Eric Baldauf, and Marney Gillmore, EPA and LDEQ conducted a tour of the refinery.

Incident Summary

This EPA inspection was initiated because of a tank fire which occurred on June 3, 2023. At approximately 2:00 PM on June 3, a tank containing naphtha caught fire after being struck by lightning. When the fire started, the tank contained about 46,000 barrels of naphtha. A shelter-in-place was initially mandated for a 5-mile radius and then reduced to 3 miles from the plant. A 1.5-mile mandatory evacuation order was also enacted. At approximately 5:37 a.m. June 4, 2023, the shelter-in-place and the mandatory evacuation order were lifted around the plant, and at the end of West Tank Farm Road. Roughly 7,225 barrels of naphtha was recovered from the tank once the fire was extinguished.

CRC failed to submit the data required under §§ 68.168, 68.170(j), and 68.175(l) within six months of the June 3, 2023, incident with respect to an accidental release of naphtha which resulted in an explosion and fire resulting in significant property damage on site and a shelter-in-place action off-site. Calcasieu Refining Corporation failed to submit the data required after an explosion and fire that occurred because of a lightning strike on Storage Tank 320 containing approximately 46,000 barrels of naphtha. Data was not submitted to update the RMP within 6- months, by December 3, 2023, in accordance with § 68.190.

The final incident investigation report had not yet been completed upon EPA's departure.

Subpart A - General

40 C.F.R. §68.10 Applicability – CRC is the owner/operator of a stationary source that has one process (1000115592) with more than the threshold quantity of six regulated flammable substances in a process (methane, ethane, propane, butane, pentane and isopentane) listed in 40 C.F.R. § 68.130, and as such, CRC is subject to the provisions of the Chemical Accident Prevention Program requirements.

According to CRC's Risk Management Plan, this RMP covered process involves the distillation and storage of LPG in storage tanks TK-2001A and TK-2001B. The entire LPG mixture is considered to be a regulated substance because it has a NFPA flammability hazard rating of four (4). LPG contains the following listed regulated substances: methane (0.2 weight percent), ethane (1.6 weight percent), propane (11.98 weight percent), isobutane (9.5 weight percent), normal butane (22.0 weight percent), isopentane (20.5 weight percent), normal pentane (19.3 weight percent), and heavy hydrocarbons (15.1 weight percent).

CRC also is subject to the Occupational Safety and Health Administration (OSHA) process safety management standard, 29 C.F.R. § 1910.119, and is an EPA RMP Program Level 3 facility.

40 C.F.R. §68.12 General requirements – CRC re-submitted their 5-year updated Risk Management Plan as required by 40 C.F.R. 68.190(b)(1) on April 13, 2021. This re-submission listed one covered process containing six regulated flammable chemicals. This requires CRC to implement the program requirements of 40 C.F.R. 68.65 - 68.87, develop and implement an emergency response program in accordance with 40 C.F.R. 68.90 - 68.96, and submit the data elements from 40 C.F.R. 68.175.

40 C.F.R. §68.15 Management – CRC developed a management system to oversee the implementation of the risk management program elements, documented persons responsible for implementing the individual requirements of the risk management program and defined the lines of authority. The Compliance Manager and the Safety Manager have overall responsibility for the development and implementation of the risk management program for EPA-regulated processes at this facility. Specific responsibilities for certain aspects of that program are delegated to other personnel.

Subpart B - Hazard Assessment

40 C.F.R. §68.20 Applicability – CRC has one Program Level 3 process subject to this subpart. CRC is required to prepare an offsite consequence analysis and complete the five-year accident history.

40 C.F.R. §68.22 Offsite Consequence Analysis Parameters - EPA reviewed CRC's offsite consequence analysis and supporting documentation. CRC used appropriate wind speeds and stability classes, ambient temperatures and humidity values, values for height of the release, and surface roughness values for the release scenario analyses. These values are within parameters specified by EPA for the regulated flammable substances.

40 C.F.R. §68.25 Worse-case Release Scenario Analysis – CRC analyzed and reported in the RMP one worst-case scenario, estimated to create the greatest distance to an endpoint from an accidental release of a regulated flammable substance from a covered process under worst-case conditions.

40 C.F.R. §68.28 Alternative Release Scenario Analysis – CRC identified and analyzed at least one alternative release scenario for a regulated flammable substance stored in a covered process, using a scenario that is more likely to occur, and which will reach an endpoint off-site.

40 C.F.R. §68.30 Defining Offsite Impacts - Population – CRC 's off-site impacts documentation identified the presence of private residences on a map within a circle. The RMP hazard assessment documentation provided in the 2021 RMP included the distance to endpoint based on a circle with the release point at the center.

40 C.F.R. §68.33 Defining Offsite Impacts - Environment - CRC off-site impacts documentation did not identify the presence of affected environmental receptors.

40 C.F.R. §68.36 Review and Update - CRC's most recent off-site consequence analysis was completed in April 2021 during the last RMP re-submission. CRC ensures that this documentation is reviewed and updated at least once every five years.

40 C.F.R. § 68.39 Documentation - For the worst-case and alternate release scenarios, a description of the vessel or pipeline, the substance selected as worst-case, and the rationale for selection was included; likewise, assumptions included use of any administrative controls and any passive mitigation that were assumed to limit the quantity that could be released, estimated quantity released, release rate, and duration of release.

40 C.F.R. § 68.42(a)/68.168 Five-year accident history – CRC is required to 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 off-site deaths, injuries, evacuations, sheltering in place, property damage, or environmental damage. CRC did not report any accidents from a covered process within the last five years in their April 13, 2021, Risk Management Plan re-submission. However, CRC failed to submit in the April 2021, RMP information on each accident covered by § 68.42(a). On September 17, 2020, a release occurred during a maintenance operation involving metal cutting on the south side convection section of the 501-Heater. Metal cutting using an angle grinder generated sparks which ignited hydrocarbons vapors in the area and caused a fire resulting in the death of a contract employee [AOC #1: 68.42(a) and 68.168].

Subpart D - Program 3 Prevention Program

40 C.F.R. § 68.65 Process Safety Information – CRC keeps a variety of technical documents that are used to help maintain safe operation of the process. These documents address chemical properties and associated hazards, limits for key process parameters and specific chemical inventories, and equipment design basis/configuration information. Chemical-specific information, including exposure hazards and emergency response/exposure treatment considerations, is provided in Safety Data Sheets (SDS). CRC documented safety-related limits for specific process parameters (e.g., temperature, pressure, level, composition) in the operation manuals for each process unit. CRC ensures that the process is maintained within these limits by using process controls and monitoring instruments, operating procedures, highly trained personnel, and safety instrument systems (e.g., automated shutdown systems). CRC also maintains numerous technical documents that provide information about the design and construction of process equipment. This information includes materials of construction, design pressure and temperature ratings, electrical rating of equipment, etc.

EPA reviewed 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.

EPA reviewed the Safety Data Sheets for the following chemicals: naphtha, crude oil, and liquefied petroleum gas to confirm toxicity information, permissible exposure limits, physical data, reactivity data, corrosivity data, thermal and chemical stability data, and the hazardous effects of inadvertent mixing of materials that could foreseeably occur. CRC documented information pertaining to the technology of the process, including block flow diagrams, process chemistry, maximum intended inventory inside the process, safety information procedures, safe upper and lower limits, and an evaluation of consequences of deviation from operating parameter limits.

EPA reviewed information that contained materials of construction, piping, and instrumentation diagrams (P&IDs), electrical classification, relief system design and design basis, ventilation system design, design codes and standards employed, and safety systems.

CRC failed to document the correct set pressure for PSV-781, correct the set point for PSV 321B and PSV-321D, or document the Safety Requirements Specifications for the Safety Instrumented Systems (SIS) application **[AOC #2: 68.65(d)(1)(iv)]**.

CRC failed to ensure and document that the process is designed and maintained in compliance with recognized and generally accepted good engineering practices such as NFPA 25 2020 Paragraph 5.2.6/NFPA 2023 5.2.5/5.2.5.1. which addresses hydraulic nameplate information **[AOC #3: [68.65(d)(2)]**. **40 C.F.R. § 68.67 Process Hazard Analysis (PHA)** – CRC has a comprehensive PHA program to help ensure that hazards associated with the various processes are identified and controlled. Within this program, each existing covered process and future processes are systematically examined to identify hazards and ensure that adequate controls are in place to manage those hazards. CRC primarily uses the hazard and operability (HAZOP) analysis technique to perform these evaluations. The analyses are conducted using a team of people who have operating and maintenance experience as well as engineering expertise. This team identifies and evaluates hazards of the process as well as recommends accident prevention and/or mitigation measures when the team believes such measures are necessary. The PHA team recommendations are forwarded to management for approval.

To help ensure that the process controls and/or process hazards do not eventually deviate significantly from the original design safety features, CRC periodically updates and revalidates its process hazard analyses of affected units. These periodic reviews are conducted at least every five years and will be conducted at this frequency until the process is no longer operating.

A November 2019 ABS Consulting Facility Siting Study CRC identified hazards of the process involving the flammable risks to occupied buildings, building occupants and employees present outside of buildings, addressed in. CFC failed to address the hazards identified in this facility siting study **[AOC #4: 68.67(c)(1) and 68.67(c)(5)]**.

CRC did not 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 **[AOC #5: 68.67(e) and 68.67(g)]**.

40 C.F.R. § 68.69 Operating Procedures - CRC maintains written operating procedures that address various modes of process operations, such as (1) unit startup, (2) normal operations, (3) temporary operations, (4) emergency shutdown, (5) normal shutdown, and (6) initial startup of a new process. These procedures can be

used as a reference by experienced operators and provide a basis for consistent training of new operators. The written operating procedures are readily available to all refinery personnel to use as necessary to safely perform their job tasks.

However, CRC failed to ensure that some operating procedures were certified annually **[AOC #6 68.69(c)]**.

CRC failed to develop and implement safe work practices when opening process equipment to provide for the control of flammable vapors during the removal of the metal convection section on the 501-Heater. During the job, sparks ignited hydrocarbon vapors in the area resulting in a fire and the death of a contract worker **[AOC #7: 68.69(d)]**.

40 C.F.R. §68.71 Training – To complement the written procedures for process operations, CRC implemented a training program for all employees involved in operating a process. New CRC operations employees receive basic training and after successful completion of the classroom and field training program, a new operator is paired with a senior operator (Trainer) to learn process-specific knowledge, process-specific equipment & instrumentation, duties, and tasks (skills). After operators demonstrate (e.g., through tests, skills demonstration, shadowing, walkthroughs) adequate knowledge, understanding, and ability to perform the duties and tasks in a safe manner on their own, they can work independently. In addition, all operators periodically receive refresher training to ensure that their skills and knowledge are maintained at an acceptable level. This refresher training is conducted every 3 years. Operators are given the opportunity to take part in more frequent refresher training if desired.

All this training is documented for each operator, including the means used to verify that the operator understood the training.

40 C.F.R. §68.73 Mechanical Integrity – CRC has well-established practices and procedures to maintain their process equipment. The procedure covers the requirements necessary to ensure the mechanical integrity of the following types of process equipment:

- Fixed Equipment (pressure vessels, fired heaters, heat exchangers and storage tanks)
- Pumps and other rotating equipment such as cooling fans.
- Piping, Components (valves, cathodic protection, etc.) and Hoses
- Process Support Utilities and Infrastructure
- Relief and Vent Devices (including Flare System)
- Emergency Response System
- Emergency Shutdown Devices/Systems
- Electrical Systems (such as UPS, grounding, etc.)
- Instrumentation and Controls (Monitoring Devices, Sensors, Alarms, Interlocks)

To execute the program effectively, the Maintenance Reliability Manager is responsible for the inspection and testing on fixed equipment; he is also responsible for quality assurance for new and replaced fixed equipment and piping, as well as preventive maintenance activities for relief and vent devices, emergency shutdown devices/systems, instrumentation and controls, electrical systems, pumps and other rotating equipment, process support utilities and infrastructure. Mechanical integrity inspectors in the fixed equipment department are certified in American Petroleum Industry (API) standards API 510, 521, 570, and 653. EPA conducted interviews with employees who manage CRC's mechanical integrity program. CRC failed to establish written procedures for functional/proof testing of

emergency shutdown devices for the HIPPS and SIS systems, to implement a requirement in their mechanical integrity program that audits be performed on a periodic basis on all installed SIS/SIFs, to establish a written procedure to manage deferrals for HIPPS and SIS that were past due for inspection, and to develop an inspection and replacement program for rupture disks [AOC #8: 68.73(b)].

CRC failed to ensure that inspection and tests of polyethylene tanks (125, 126, 127, 250-253, and 550-552) were performed consistent with applicable manufacturers' recommendations and good engineering practices. CRC did not ensure that Safety Instrumented Systems, including the High Integrity Pressure Protection Systems, were inspected and tested at a frequency consistent with applicable manufacturers' recommendations and good engineering practices [AOC #9 68.73(d)(3)]. CRC did not ensure that the documentation for the following heaters: H-701, H-204, H-501/H-501A, H-901 5 shutdown inspections an High Integrity Pressure Protection Systems (HIPPS)testing when Heaters are Shutdown, HIPPS for #5 OverheadP-210A/B HIPPS Test Procedure, C-3601 Liquid Ring Compressor Shutdown Procedure inspection included the date of the inspection or test, the name of the person who performed the inspection or test and the results of the inspection or test [AOC #10: 68.73(d)(4)].

40 C.F.R. §68.75 Management of Change (MOC) – CRC established written procedures to manage changes that affect a covered process. This system requires that changes to items such as process equipment, chemicals, technology (including process operating conditions), procedures, and other facility changes be properly reviewed and authorized before being implemented. Changes are reviewed to (1) ensure that adequate controls are in place to manage any new hazards and (2) verify that existing controls have not been compromised by the change. CRC did not ensure that a management of change document was prepared for the installation of Leak Repair Clamp #2014-1: 3/28/2014 on P2C discharge piping located in the crude unit. CRC could not produce the MOCs that were required to resolve recommendations from the 2017 #2 CDU Unit [AOC #11: 68.75(a)].

40 C.F.R. §68.77 Pre-Startup Safety Review – CRC conducts a pre-startup safety review for any new facility or facility modification that requires a change in the process safety information. The purpose of the review is to ensure that safety features, procedures, personnel, and the equipment are appropriately prepared for startup prior to placing the equipment into service. This review provides one additional check to make sure construction is in accordance with the design specifications and that supporting systems are operationally ready. The review team uses checklists to verify all aspects of readiness. A review involves field verification of the construction and serves a quality assurance function.

40 C.F.R. § 68.79 Compliance Audits – Compliance audits are performed to help ensure that the accident prevention program is being implemented and functioning properly. Compliance audits are conducted at least every 3 years. These audits are led by a third-party contractor with assistance by CRC employees as necessary. The findings are forwarded to the CRC Refinery Leadership Team for review. Corrective actions taken in response to the audit team's findings are tracked.

CRC provided the two most recent Risk Management Plan Compliance Audits which were completed December 2019 and October 2022. I reviewed the audit findings outlined in the reports for each audit. CRC had not promptly determined and documented an appropriate response to the findings in the 2019 and 2022 compliance audits. Also, recommendations and proposed actions for other findings from the 2019 audit had still not been completed [AOC #12: 68.79(d)]**40 C.F.R. § 68.81 Incident Investigation**. CRC promptly investigates all incidents that resulted in, or reasonably could have resulted in, a fire/explosion, toxic material release, major property damage, environmental loss, or personal injury. CRC assembles an investigation team depending on the initial assessment of the event. The goal of each

investigation is to discover the facts and develop corrective actions to prevent a recurrence of the incident or a similar incident. The investigation team documents its findings and develops recommendations to prevent a recurrence. Corrective actions taken in response to the investigation team's findings and recommendations are tracked until they are complete. The final resolution of each finding or recommendation is documented, and the investigation results are reviewed with all employees who could be affected by the findings. Incident investigation reports are retained for at least 5 years so that the reports can be reviewed during future PHA revalidations.

EPA reviewed the incident investigation log for the time period between January 2022-April 2024 to ensure that investigations were initiated no later than 48 hours following the incident, there was a description of the incident and the factors that contributed to the incident. Following the inspection, we requested the final investigation report and other additional information related to a few of the incidents.

40 C.F.R. § 68.83 Employee Participation- CRC implemented work processes in each PSM/RMP element in which employee input is a key expectation in the development as well as the execution of the work processes. Employee input and participation from a diverse work group allows CRC to develop appropriate PSM/RMP work processes which provide a safety net in the prevention of a catastrophic event. CRC developed an action plan to actively seek and address employee input in the development and execution of the RMP. Participation includes:

- direct participation by interested employees on a voluntary basis
- active consultation with affected employees
- anonymous communication to any supervisor pertaining to any element of our process safety management program
- site procedures are developed using the input from interested hourly and salary employees
- employees formed the Calcasieu Refining Advancement in Safety and Health (CRASH Committee); every department is represented, and safety concerns are addressed on a bi-weekly basis.

EPA reviewed the CRC Employee Participation Plan and Trade Secrets Procedure, and implementation of the employee participation element as required by this subpart. All documentation met the requirements of the standard.

40 C.F.R. §68.85 Hot Work Permit - EPA reviewed CRC's hot work procedure. Before hot work begins, an operation's representative inspects the equipment that will be used prior to sign-off. The facility issues hot work permits for hot work operations conducted on or near a covered process for the duration of the current shift. The following shift can revalidate a hot work permit if the work must continue, and the scope of work has not changed. EPA reviewed several hot work permits and determined that some hot work permits were missing information required by the form and failed to document if the fire prevention and protection requirements of 29 C.F.R. 1910.252(a) were being implemented.

The following Calcasieu Refining hot work permits were not properly completed: 47636, 47998, 47259, 47988, 47986, 47987, 48990, 49097, 47697, 49176, 49079, 49122, 44682, 47478, 48441, 49378, 49443, 49389, 49428, 49566, 49576, 51049, 51211, 51340, 51555, 51662 **[AOC #13: 68.85(b)]**.

40 C.F.R. §68.87 Contractors – CRC uses contractors to supplement its work force throughout the year, as well as during periods of increased maintenance or construction activities. Because some contractors work on or near process equipment, CRC has procedures in place to ensure that contractors perform

their work in a safe manner, have the appropriate knowledge and skills, are aware of the hazards in their workplace, understand what they should do in the event of an emergency, understand and follow site safety rules, and inform CRC personnel of any hazards that they find during their work. This is accomplished by providing contractors with a process overview, information about safety and health hazards, emergency response plan requirements, safe work practices, and the work permit process (i.e., for hot work, confined space, etc.) prior to their beginning work. In addition, CRC evaluates contractor safety programs and performance during the selection of a contractor. CRC personnel periodically monitor contractor performance to ensure that contractors are fulfilling their safety obligations.

Subpart E - Emergency Response

40 C.F.R. §68.90 Applicability - CRC is designated as a "first responder" in case of an accidental release of regulated substances or other extremely hazardous substance.

40 C.F.R. 68.93 Emergency Response Coordination Activities - The Emergency Response Plan contains emergency notification procedures and telephone numbers for the local fire district and other agency contacts (e.g., Calcasieu LEPC). As part of its Risk Management Program, CRC implemented an automatic calling service that notifies CRC personnel if an emergency upset has the potential to cause an off-site impact.

CRC did not provide documentation of the annual coordination of response needs with local emergency planning and response organizations to determine how the stationary source is addressed in the community emergency response plan and to ensure that local response organizations are aware of the regulated substances at the stationary source, their quantities, the risks presented by covered processes, and the resources and capabilities at the stationary source to respond to an accidental release of a regulated substance **[AOC #14: 68.93]**.

40 C.F.R. §68.95 Emergency Response Program – The primary objective of CRC's Emergency Response Plan is to address what actions CRC employees should take in the event of an accidental release of hazardous chemicals. CRC has an emergency response team and requires members to complete annual refresher training. The refresher training includes Incident Command System (Emergency Response Team Leaders), Emergency Planning and Response, Self-Contained Breathing Apparatus (SCBA), HAZWOPER, Personal Protective Equipment, Chemical Protective Equipment, First Aid/CPR, Spill Response, MSA gas detector, Fire Brigade and Confined Space Rescue training.

CRC failed to ensure that the procedures and measures of the emergency response plan are implemented consistent with notification, emergency actions and the safe evacuation or shelter-in-place of employees in response to an accidental release **[AOC #15: 68.95(a)(1)(iii)]**. CRC failed to implement the inspection and testing intervals as prescribed in their emergency response program for the following self-contained breathing apparatus, fire monitors, and Water Spray Systems. CRC also identified deficiencies in the inspection, testing (as per NFPA 25) and preventative maintenance of emergency response equipment in their 2022 compliance audit **[AOC #16: 68.95(a)(2)]**.

Subpart G - Risk Management Plan

40 C.F.R. § 68.190 Updates – CRC re-submitted its 5-year RMP update on April 13, 2021.

40 C.F.R § 68.195 Required Corrections – CRC is required to update the RMP by submitting data following any accidental release of a regulated substance or extremely hazardous substance (see 68.3)

within six months of the release. CRC did not update their RMP within six months of the chemical release that occurred on June 3, 2023 [AOC #17: 68.195(a)].

40 C.F.R § 68.210 Availability of information to the public – The standard requires the owner 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 specified in § 68.42(a). CRC failed to hold a public meeting to provide information to the public, no later than 90 days after a RMP reportable accidental release of naphtha which resulted in a fire, a shelter-in-place, and an evacuation action off-site [AOC 18 68.210(b)].

General Duty Clause: Section 112(r)(1) Prevention of Accidental Releases

(1) Purpose and General Duty - 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.

In two cases, involving accidental releases, CRC failed to identify hazards which may result from such releases using appropriate hazard assessment techniques, and/or failed to design and maintain a safe facility by taking such steps as are necessary to prevent releases [AOC #19: 68.210(b)].

1. In September 2020, CRC failed to maintain a safe facility by not taking such steps as are necessary to ensure that the atmosphere around the location of metal-cutting operation was free of hazardous flammable hydrocarbons. Sparks from the operation ignited producing a fire which resulted in the death of a contract employee.
2. In June 2023, CRC failed to design and maintain a safe facility by not taking such steps as are necessary to prevent lightning strikes on atmospheric storage tanks containing hazardous and flammable hydrocarbons.

SECTION III - AREAS OF CONCERN

AOC 1 – Five-Year Accident History - 40 C.F.R. §68.42(a) and 68.168 requires the owner or operator to 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. **40 C.F.R. §68.168** requires the owner or operator to submit in the RMP the information provided in §68.42(b) on each accident covered by § 68.42(a).

CRC failed to include in their April 2021 Risk Management Plan submittal, Five-year Accident History, an accidental release of an extremely hazardous substance from a covered process which occurred on September 17, 2020. A contract worker used an angle grinder to cut a metal section of process heater H-501. Sparks from the metal cutting operation ignited residual flammable hydrocarbon vapor present in the equipment resulting in a fire and the death of the contract worker.

AOC 2 – Process safety information - 40 C.F.R. §68.65(d)(1)(iv) requires the owner or operator to maintain information pertaining to the relief system design and design basis.

1. CRC failed to ensure that for PSV-781, the design basis set pressure matched the stamped set pressure on the PSV as identified in the CRC 2022 Compliance Audit. The PSV stamped in the field was 20 psig and the design basis documented set pressure was 50 psig.

2. As of November 2022, and at times prior to, CRC failed to document the correct set point information for PSV- 321B and PSV-321D on the relief valve nameplate and P&IDs as identified in the CRC 2022 Compliance Audit.
3. As of November 2022, and at times prior to, CRCs High Integrity Pressure Protection System (HIPPS) did not meet the requirements of the SIS application in that it did not have documented Safety Requirements Specifications as identified in the CRC 2022 Compliance Audit.
4. As of November 24, 2022, CRC failed to update and use the correct P&ID referencing PSV-602.

AOC 3 – Process Safety Information - 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.

CRC failed to ensure and document that the process is designed and maintained in compliance with recognized and generally accepted good engineering practices in accordance with NFPA 25 2020, Paragraph 5.2.6/NFPA 2023 5.2.5/5.2.5.1.

An inspection of the water deluge system was performed in 2022 for all Unit Deluge Systems around the facility. The corresponding report is entitled “Water Spray System I.T.M. Report” The inspection determined that the hydraulic name plate was not available and legible for the following:

- LPG Unit- Z7 Diesel, 901/903 Pumps
- Unit 2- Pump system 1, #4
- Unit 2- Z1 System, Z2 System, Z3 System, Z4 System, Z5 System
- North Unit- Z1 System, Z5 System, Z6 System, Z7 System
- Middle Unit- Z1 System, Z2 System, Z3 System and Z4 System.

AOC 4 - Process Hazard Analysis - 40 C.F.R. §68.67(c)(1) and (c)(5) requires the process hazard analysis to address: (1) The hazards of the process; including (5) stationary source siting.

CRC failed to address the hazards of the process involving the flammable risks to occupied buildings, building occupants and employees present outside of buildings, addressed in the November 2019 ABS Consulting Facility Siting Study.

- November 2019 ABS Facility Siting Study: Key elements of the study were to assess hazards to on-site personnel associated with operation of the plant and evaluate the resulting vulnerabilities for potential fire, toxic, and explosion hazards associated with the facility's operation.
- Fire Hazards (buildings for evacuation): Flash Fire Exposure: Buildings 23 and 24 should include PPE and flammable detection equipment for personnel use during evacuation. Procedures and training should address evacuation when flammable clouds may be present. Alternately, the buildings may be evaluated for use as an Emergency Shelter for the duration of hazard.
- Jet Fire Exposure: November 2019 Final Report Buildings 23 and 24 should consider whether a more detailed evaluation that considers jet impingement could be of benefit. Alternately, shield walls near the source can be effective. Due to proximity of Building 24 to releases 13 and 19, moving the building to a safer location may be a better option.

CRC failed to document the blast resistant rating for the Control Room and Permit Trailer buildings.

Table 8, Explosion Hazard Results indicate that the Control Room is susceptible to a maximum blast load of 14.1 psi and the Permit Trailer could experience a maximum blast load of 7.3 psi.

AOC 5 - Process Hazard Analysis - 40 C.F.R. §68.67(e) and 68.67(g) requires the owner or operator to establish a system to promptly address the team's findings and recommendations; assure that the recommendations are resolved in a timely manner and that the resolution is documented; document what actions are to be taken; complete actions as soon as possible; develop a written schedule of when these actions are to be completed; communicate the actions to operating, maintenance and other employees whose work assignments are in the process and who may be affected by the recommendations or actions. The owner or operator is required to retain process hazards analyses and updates or revalidations for each process covered by this section, as well as the documented resolution of recommendations described in paragraph (e) of this section for the life of the process.

1. CRC failed to establish a system to promptly address findings and recommendations from the 2017 and 2018 PHAs which were identified in their 2019 Compliance Audit. Nine (9) PHA recommendations were recorded but no documentation was provided to EPA indicating what actions were taken to resolve the recommendation; assuring that the recommendations were resolved in a timely manner and the resolution is documented; and the actions were completed as soon as possible.
2. CRC failed to retain the documented resolution of recommendations from previous process hazards analyses and updates or revalidations for each process covered by this section for the life of the process.
3. CRC failed to provide the documented resolution for the following recommendations contained in the:
 - i. 2016 #5 CDU, Kerosene and Diesel Treating Units PHA (5 of 22 recommendations resolved)
 - ii. 2018 OMS and Dock Area PHA: three (3) recommendations were accepted and resolved but did not have completion dates. Nine (9) recommendations were rejected, seven (7) recommendations were not resolved, and (1) was modified but not resolved.
 - iii. OMS and Dock Area Revalidation HAZOP Report 2023: Received the resolution for all recommendations. However, some action items are still open.
 - iv. 2017 #7 Vacuum Unit PHA
 - v. LPG Tanks 2020 Revalidation PHA Report 2020
4. CRC Naphtha Tank TK-320 Project HAZOP Report:
 - i. Recommendation #1: Provide suitable relief path(s) for discharge of PSV-316A and PSV-316B when line-up to tank TK-316 is not available. Comment: PSV-316A, and PSV-316B had an original line-up to TK-316, if there was an operating scenario only flowing to TK-320 (TK-316 out of service) the path CSO to TK-320 could be implemented. One caveat that was addressed outside of the project, was relieving to the tanks for a fire case should be evaluated further. There was some preliminary work (routing and tie-in to flare from the treaters) but was not funded past concept. See excerpt from PSV package. As far as the HAZOP recommendation, TK-316 and TK-320 had a relief path albeit to the tanks
 - ii. Recommendation #4: Consider need for a thermal relief on lines 18"-K-120131 and 18"-K-120132. Comment: Early FEED stage of the project was to make TK-316 a swing

tank for Kero service with a booster pump from Kero treating, and piping to transfer to the ETF. This was included in the HAZOP but was not implemented in out detailed design. No PSV sizing or design was progressed on this scope beyond the HAZOP.

AOC 6 - Operating Procedures - 40 C.F.R. §68.69(c) requires the operating procedures to 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.

CRC failed to certify that operating procedures were certified annually. The #5 Crude Unit operating procedures were not certified in 2022 or 2023, and the #28 LPG Unit operating procedures were not certified in 2023 to assure they were current and accurate.

AOC 7 - Operating Procedures - 40 C.F.R. §68.69(d) requires the owner or operator to 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.

CRC failed to develop and implement safe work practices to provide for the control of hazards when performing operations on open process equipment requiring a hot work permit. On September 9, 2020, at the #5 Crude Unit, CRC failed to remove flammable hydrocarbon gas and liquids from all process equipment attached to heater H-501 prior to allowing hot work to be performed in the area. A contractor employee used a portable saw to cut a metal convection section located on the north side of the 501 Heater. Sparks developed from the operation which ignited hydrocarbon vapors in the area resulting in a fire. The contractor employee was badly burned, was required to be hospitalized, and later died.

AOC 8 - Mechanical Integrity - 40 C.F.R. §68.73(b) requires the owner or operator of a stationary source to establish and implement written procedures to maintain the on- going integrity of process equipment.

- On or about March 2024, and at times prior to, Calcasieu failed to establish written procedures for functional/proof testing of emergency shutdown devices for the HIPPS and SIS systems as identified in the 2022 compliance audit.
- CRC failed to implement a requirement in their mechanical integrity program that audits be performed on a periodic basis on all installed SIS/SIFs.
- On or about April 30, 2024, and at times prior to, CRC failed to establish a written procedure to manage deferrals for HIPPS and SIS that were past due for inspection as identified in the 2022 compliance audit.
- On or about December 2023, and at times prior to, CRC failed to develop an inspection and replacement program for rupture disks which would include: confirming the marked disk set pressure is equal to or less than the vessel MAWP, checking for signs of damage like dents, scratches, corrosion, or pitting on the disk surface and developing an inspection plan for rupture disks consistent with the manufacturer's guidelines and the operating conditions of the system.
- On or about August 23, 2023, and at times prior to, CRC failed to implement a car seal program to ensure that PCV-251 did not block-in the relief path to the flare.

AOC 9 - Mechanical Integrity - 40 C.F.R. §68.73(d)(3) requires the frequency of inspections and tests of process equipment to be consistent with applicable manufacturers' recommendations and good

engineering practices, and more frequently if determined to be necessary by prior operating experience.

- On or about November 2023, and at times prior to, CRC failed to ensure that inspection and tests of polyethylene tanks (125, 126, 127, 250-253, and 550-552) were performed consistent with applicable manufacturers' recommendations and good engineering practices. Periodic examination of polyethylene tanks shall be performed to identify possible evidence of environmental damage such as ultraviolet attack, chemical exposure, extreme temperatures, impacts, and other environmental conditions which limit the useful life expectancy of all tanks. The inspection should include all fittings, identify broken parts, excessive corrosion, deteriorated surface texture, and cracks, wear marks, or other signs of potential leaks. Inspect all gaskets for signs of deterioration, identify discoloration, bulges, and inspect all valves and/or pumps that may be connected to, or installed in/on, the tank.
- On or about June 2024, and at times prior to, CRC did not ensure that Safety Instrumented Systems, including the High Integrity Pressure Protection Systems, were inspected and tested at a frequency consistent with applicable manufacturers' recommendations and good engineering practices (e.g. such as ANSI/ISA - S84.00.01, Parts 1-3) as identified in the 2022 compliance audit.
- On or about 5/25/2022, and at times prior to, CRC failed to conduct sufficient inspection and testing of the #2 heater emergency shutdown device (ESD) located in the control; the shutdown device was determined to be inoperable during a 2022 turnaround.
- On or about 5/25/2022, and at times prior to, CRC failed to conduct sufficient inspection and testing of the #4 heater emergency shutdown device located in the control room. During a 2022 turnaround it was determined that the shutdown device, when depressed, only activated 1 of 2 emergency isolation valves.

AOC 10 - Mechanical Integrity - 40 C.F.R §68.73(d)(4) *requires the owner or operator to document each inspection and test that has been performed on process equipment. The documentation shall identify 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.*

Calcasieu Refining Company did not ensure that the documentation for the following heaters included the date of the inspection or test, the name of the person who performed the inspection or test and the results of the inspection or test:

- H-701, H-204, H-501/H-501A, H-901 - shutdown inspections and HIPPS testing when heaters are shutdown,
- HIPPS for #5 Overhead P-210A/B HIPPS Test Procedure inspection
- C-3601 Liquid Ring Compressor Shutdown Procedure inspection

AOC 11 - Management of Change - 40 C.F.R §68.75(a) *requires the owner or operator to establish and implement written procedures to manage changes (except for "replacements in kind") to process chemicals, technology, equipment, and procedure, and changes to stationary sources that affect a covered process.*

CRC did not ensure that a management of change document was prepared for the installation of Leak Repair Clamp #2014-1: 3/28/2014 on P2C discharge piping located in the crude unit. Written procedures were not implemented which addressed prior to any change:

1. The technical basis for the proposed change
2. Impact of change on safety and health

3. Modifications to operating procedures
Necessary time period for the change
4. Authorization requirements for the proposed change

CRC Mechanical Integrity Procedure - Leak Repair Device Installation and Removal (5/10/2013) requires that 7.5 Inspection/7.5.4 Inspection "Department" will be responsible for tracking all leak repair devices and creating a work request to remove the leak repair clamp. All leak repair clamps will be reexamined every 90 days by inspection to ensure leak repair clamp controlling leak and pressure.

CRC failed to document that leak repair clamps, such as but not limited to, Clamp #2014-1 were reexamined every 90 days by inspection to ensure the leak repair clamp controlling the leak and pressure was still functioning as designed.

CRC could not produce the MOCs that were required to resolve the following recommendations from the 2017 #2 CDU Unit:

- Recommendation #2 was to re-rate E-204 from 480 psi to 300 psi.
- Recommendation #11 was to add relief valves to the shell-side of the following exchangers: E207A/B, E- 204, E-221A/B, E-212A/B/C, E-209, E-210, E-214A/B, E-220, E-513, E-522, and E-211A/B. These relief
- valves will protect a case of a "fire" scenario.

AOC 12 - Compliance Audit - 40 C.F.R §68.79(d) requires the owner or operator to promptly determine and document an appropriate response to each of the findings of the compliance audit, and document that deficiencies have been corrected.

- CRC failed to determine and document an appropriate response to the 2019 Compliance Audit finding addressing the development of calculations and datasheet information for the flare to determine the impact on adjacent equipment and personnel during a maximum relief incident.
- CRC did not document that a finding identified in the 2019 Compliance Audit had been corrected. The 2019 Compliance contained a finding and recommendation that CRC establish a system to ensure that operating procedures were certified annually. This EPA inspection identified that the #5 Crude Unit operating procedures had not been certified in 2022 or 2023, and the #28 LPG Unit operating procedures had not been certified in 2023.
- CRC did not document that a finding identified in the 2019 Compliance Audit had been corrected. The 2019 Compliance contained a finding and recommendation stating that the PHA revalidation shall include a review of the resolution status of previous PHA recommendations. EPA identified findings and recommendations from previous PHAs that were still open, and some had not been resolved.
- CRC failed to document those deficiencies identified in the 2019 Compliance Audit addressing the review and resolution of the previous recommendations has been corrected. The following PHAs still had recommended open action items:
 - OMS and Dock Area 2018 PHA:
 - Three (3) recommendations were accepted and resolved but did not have completion dates.
- Nine (9) recommendations were rejected, seven (7) recommendations were not resolved, and (1) was modified but not resolved
- As of May 2024, CRC did not ensure that a finding contained in the 2022 Compliance Audit related to errors in some P&IDs was promptly addressed and documented that deficiencies have

been corrected.

- As of May 2024, CRC did not document that a deficiency identified in the 2022 Compliance Audit had been corrected. The 2022 Compliance Audit contained a finding and recommendation that the High Integrity Pressure Production System (HIPPS) did not meet the requirement of SIS application per IEC 61511 in that it did not have documented Safety Requirement Specifications.
- CRC failed to document that the discrepancy identified in the 2022 Compliance Audit related to the correct set pressure for PSV-781 had been promptly corrected.
- CRC's 2019 and 2022 Compliance Audits do not indicate completion dates, allowing EPA to evaluate if CRC promptly determined and documented an appropriate response to each finding and recommendation.

AOE 13 - Hot Work Permit 40 C.F.R §68.85(a) and 68.85(b) requires the owner or operator to issue a hot work permit for hot work operations conducted on or near a covered process. 40 C.F.R §68.85(b) requires the permit to document that the fire prevention and protection requirements in 29 CFR 1910.252(b) have been implemented prior to beginning the hot work operations.

CRC failed to document that the hot work permit provisions identified in the form were completed and were following the requirements of 1910.252(b) and the Calcasieu hot work permit procedure. The following Calcasieu Refining hot work permits were not properly completed:
47636, 47998, 47259, 47988, 47986, 47987, 48990, 49097, 47697, 49176, 49079, 49122, 44682, 47478, 48441, 49378, 49443, 49389, 49428, 49566, 49576, 51049, 51211, 51340, 51555, 51662.

Permit Number Start	Hot Work Permit Closed?	Fire Watch	Initial Gas Monitor	Work/Equipment
49566	Blank	Yes	Blank	Welding/Tank/318
49576	Blank	None	No result	Welding/Slop Line to 315
49428	Blank-No Close time Provided Water treatment 525-B			
49433	Blank-No Close time Provided Boom Reel			
49378	Time of test not indicated			
49443	Yes			Welding/TK-318
	No facility signature for permit closer No signature, date, time for permit closer Dock	No Firewatch		
51211				
51340		No Firewatch		Welding/TK-318
51662		No Firewatch		Welding/TK-318
47516		No Firewatch		Welding/TK-315
47998	Blank-No Start time Provided			P-602A
47259	Blank-No Start time Provided			C370A
49097	Blank No facility signature for permit closer			TK-301
47697	No start time provided			C-105
49176		Fire Watch Name not provided		Welding/tank 315
47478	No facility signature for permit closer			P-314D

AOC 14 - Emergency Response Coordination Activities - 40 C.F.R 68.93 requires the owner or operator of a stationary source to coordinate response needs with local emergency planning and response organizations to determine how the stationary source is addressed in the community emergency response plan and to ensure that local response organizations are aware of the regulated substances at the stationary source, their quantities, the risks presented by covered processes, and the resources and capabilities at the stationary source to respond to an accidental release of a regulated substance.

CRC failed to provide documentation of the annual coordination of response needs with local emergency planning and response organizations to determine how the stationary source is addressed in the community emergency response plan and to ensure that local response organizations are aware of the regulated substances at the stationary source, their quantities, the risks presented by covered processes, and the resources and capabilities at the stationary source to respond to an accidental release of a regulated substance.

AOC 15 - Emergency Response Program - 40 C.F.R. §68.95(a)(1)(iii) requires the owner or operator to develop and implement an emergency response program for the purpose of protecting public health and the environment. Such program shall include the procedures and measures for emergency response after an accidental release of a regulated substance.

CRC failed to ensure that the procedures and measures of the emergency response plan are implemented consistent with notification, emergency actions and the safe evacuation or shelter-in-place of employees in response to an accidental release. The ERP table of contents "Tab I" contains the Evacuation/ Shelter-In-Place Plan." This section of the plan only provides a description of assembly points. However, the plan does not specify shelter-in-place locations as no such shelter-in-place buildings have been designated.

AOC 16 - Emergency Response Program - 40 C.F.R §68.95(a)(2) requires the owner or operator to develop and implement an emergency response program for the purpose of protecting public health and the environment. Such program shall include the procedures for the use of emergency response equipment and for its inspection, testing, and maintenance.

CRC failed to implement the inspection and testing intervals as prescribed in their emergency response program for the following equipment:

- Monthly inspection and tests of self-contained breathing apparatus were not performed in October 2023 and June 2023.
- Monthly inspection and tests of fire monitors was not performed in June of 2023.
- Annual inspections of the Water Spray System were not performed in 2021 and 2023

CRC failed to implement the proper maintenance of emergency response equipment as indicated by the following deficiencies identified during the monthly inspection of the fire monitors. Similar findings were also in the 2022 compliance audit. Monthly fire monitor findings included:

- signs of corrosion, parts of the fire monitor not in place and not in good working conditions,
- butterfly valve with corrosion, head spinning and unable to use fog mode,
- water leaking from nozzles and/or bottom valve, flange corrosion,
- bent or missing handle, weld fittings (o-lets), butterfly valve broken.

The 2022 compliance audit indicated the following: The firewater system had extensive corrosion on above ground equipment such as monitor valves, weld fittings (o-lets), and block valves and isolation

valves would not close to isolate various sections of the system.

AOC 17 - Five-year accident history reporting - 40 C.F.R. § 68.195(a) – requires that 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.

CRC failed to submit the data required under §§ 68.168, 68.170(j), and 68.175(l) within six months of June 3, 2023, with respect to an accidental release of naphtha which resulted in a fire resulting in significant property damage on site and a shelter-in-place and evacuation action off-site. CRC failed to submit the data required after the fire that occurred because of a lightning strike on Storage Tank 320 containing approximately 46,000 barrels of naphtha. Data was not submitted to update the RMP within 6-months, by December 3, 2023. in accordance with § 68.195(a).

AOC 18 – Availability of information to the public - Public meetings - 40 C.F.R. § 68.210(b) requires the 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).

CRC failed to hold a public meeting to provide information required under § 68.42(b), no later than 90 days after a RMP reportable accident involving an accidental release of naphtha which resulted in an explosion and fire and resulting in significant property damage on-site and a shelter-in-place and evacuation action off-site.

AOC 19 – The CAA General Duty Clause - Clean Air Act (CAA) §112(r)(1) – 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.*

CRC failed to maintain a safe facility by not taking such steps as are necessary to ensure that hydrocarbon gas or volatile liquids were purged from process equipment and the atmosphere around the location of metal-cutting operation was free of flammable hydrocarbons. Sufficient air monitoring was not conducted to ensure that the concentration of flammable hydrocarbons in the work area were below acceptable levels prior to performing hot work. Chemical monitors did not detect concentrations of hydrocarbons in the work area and supervision was not adequate to observe that work permits and procedures were being followed to ensure the work of contractors was performed safely.

On September 17, 2020, during a maintenance operation, requiring a hot work permit, a contract employee was using a porta-saw to cut metal away from the north side convection section of the 501 Heater. Metal cutting using the porta-saw resulted in sparks which ignited hydrocarbons in the area and caused a fire. The contract employee received thermal burns and was required to be hospitalized; and later died.

On June 3, 2023, CRC failed to design a safe facility by not taking such steps as are necessary to ensure that engineering controls applicable to the hazard were in place to prevent lightning strikes on storage tanks containing flammable materials.

The CRC PHA -Naphtha Tank TK-320 Project HAZOP Report was not appropriate to the complexity of the process as it did not identify and evaluate the hazard of lightning strikes on tank TK-320. Lightning strikes have affected process equipment at this facility and have occurred on December 19, 2022, July 22, 2023, January 8, 2024. Whenever considering lightning protection, there are three basic principles: bonding and grounding, surge suppression, and structural lightning protection. Recognized and Generally Accepted Good Engineering Practices and engineering design include the following:

- National Fire Protection Association NFPA 780, Standard for the Installation of Lightning Protection Systems
- American Petroleum Institute API 545, Recommended Practice for Lightning Protection of Aboveground Storage Tanks for Flammable or Combustible Liquids; and
- American Petroleum Institute API 2003, Recommended Practice for Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents.

EPA Region 6 inspectors Howard Cole and Kristen Latiolais conducted a closing conference at Calcasieu Refining Company at 1:00 PM on May 17, 2024, for the inspection. During the closing conference, Howard Cole reviewed Areas of Concern 1, 3, 6, 7, 13, 14, 17, and 19 identified above. Additional Areas of Concern 2, 4, 5, 8, 9, 10, 11, 12, 15, 16, and 18 noted during the inspection were determined after the conclusion of the inspection and were not included in the closing conference.

SECTION IV - FOLLOW UP

At the conclusion of this RMP inspection, EPA requested supplemental documentation be downloaded to the EPA designated SharePoint site for review.

The Clean Air Act 42 U.S.C. Section 114(a)(2)(A) / Clean Air Act 42 U.S.C. Section 114(a)(2)(B)" CAA 42 U.S.C. Section 114(a)(2)(A) grants a representative authorized by the Administrator, upon presentation of credentials, the right of entry to, upon, or through any premises of such person on in which any records required to be maintained are located. Under CAA U.S.C. Section 114(a)(2)(B) the authorized representative may at reasonable times have access to and copy any records, inspect any equipment or method and sample any emission required to be sampled under CAA 42 U.S.C 7414(a)(1)."

SECTION V - LIST OF APPENDICES

Appendices are not attached to this report due to the appendices being classified as CBI or Sensitive Appendices. CBI Appendices include documents that are claimed CBI by the facility. Sensitive Appendices may include appendices that will not be posted but are not explicitly CBI. These could include PII or Homeland Security sensitive information.