United States Environmental Protection Agency

Region 6 Compliance Assurance and Enforcement Division

INSPECTION REPORT

Inspection Date(s):	09/11/2018 – 09/13/2018		
Media:	Air		
Regulatory Program(s)	Clean Air Act Section 112(r) and 40 C.F.R. Part 68 Chemical Accident Prevention Provisions		
Company Name:	**Lubrizol Corporation**		
Facility Name:	**Bayport Plant**		
Facility Physical Location:	12801 Bay Area Blvd.		
(city, state, zip code)	Pasadena, Texas 77507		
Mailing address:	(same as above)		
(city, state, zip code)	(same as above)		
County/Parish:	Harris		
Facility Contact:	Patrick Shannon	HSES Manager	
	Patrick.Shannon@lubrizol.com		
FRS Number:	110000462936		
Identification/Permit Number:	Federal Operating Permit O1582		
Media Number:	RMP EPA Facility Identifier: 100000097851		
NAICS:	32599 = All Other Chemical Product and Preparation Manufacturing		
Personnel participating in inspection:			
Tony Robledo	US EPA/6EN-AS	Inspector	(214) 665-8182
Patrick Shannon	Lubrizol Corporation	HSES Manager	(440) 343-7493
EPA Lead Inspector Signature/Date	Tony Robledo Tony Robledo		10-2-18 Date
Supervisor Signature/Date	Samuel Tates Samuel Tates		10/2/2018 Date

6ENFORM-019-R6 (10/6/14)

Section I - INTRODUCTION

PURPOSE OF THE INSPECTION

United States Environmental Protection Agency (EPA) Region 6 inspector Tony Robledo arrived at the Lubrizol Corporation, Bayport Plant (Lubrizol) at approximately 9:00 a.m. on September 11, 2018, for an announced inspection. I conducted an opening meeting with the following persons in attendance as identified in Table 1.

Table 1: Opening Meeting Attendance

Name	Position
Patrick Shannon	HSES Manager
Anh-Thy Tran	Site Manager
David Sonnier	Health and Safety Specialist
Robert Gessner	Production Superintendent
Dennis Ray Langehennig	Maintenance Superintendent
Mark A. Turvey	Facilities Protection Superintendent and Fire Chief
Troy Merchant	HSES Compliance Manager
Tim Henggeler	Environmental Engineer
Kathleen Antoine	Environmental Manager
Fred Gregory	Process Safety Risk Manager
Tony Robledo	Inspector & Enforcement Officer EPA Region 6

I presented my credentials to all attendees at the opening meeting, and informed them that this EPA inspection was to determine compliance with Clean Air Act Sections 112(r)(1) and 112(r)(7). The scope of the inspection was a partial compliance evaluation (PCE) and included evaluation of the compliance with 40 C.F.R. Part 68 – Chemical Accident Prevention Provisions.

FACILITY DESCRIPTION

Lubrizol uses boron trifluoride, hydrazine, and formaldehyde to manufacture specialty chemical additives for lubricating oil used in gasoline and diesel engines. The process of manufacturing the gasoline additive product is composed of three basic steps - reaction, stripping, and filtration which takes place in Process 3 of the facility. An aromatic solvent is brought into the reactor with polyolefin phenol, a formaldehyde solution, and amine. After amine addition, the batch is distilled to separate the aqueous distillate which is drained to a distillate storage tank and sent for disposal. The gasoline additive product is pumped from the reactor, filtered, and pumped to product storage. Once the product is in storage, it is loaded into a transport vessel for transportation to a customer. The facility has about 113 full-time employees. There are no listed flammable substances, only toxics - boron trifluoride, hydrazine, and formaldehyde which exceed their respective threshold quantities stored at this facility.

Section II – OBSERVATIONS

I conducted a walk-through of the facility on September 12, 2018, accompanied by Lubrizol personnel to observe the facility process, equipment, pressure vessels, storage tanks, and operation. I observed no visible spills, leaks, or air emissions. The facility grounds appeared to be well maintained.

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

Subpart A – General

40 C.F.R. § 68.10 Applicability – Lubrizol is an owner and operator of a stationary source that has more than a threshold quantity of regulated toxic substances, listed in 40 C.F.R. § 68.130, in a process, and as such is subject to these Chemical Accident Prevention Provisions. Lubrizol listed the NAICS code 32599, (all other chemical product and preparation manufacturing), as the process in its Risk Management Plan (RMP). The Lubrizol facility process is also subject to the Occupational Safety and Health Administration (OSHA) process safety management standard, 29 C.F.R. § 1910.119. These factors make the process at the Lubrizol facility a Program 3 subject to 40 C.F.R. § 68.10(d).

40 C.F.R. § 68.12 General Requirements – Lubrizol re-submitted a RMP five-year update on September 4, 2018. This submittal lists a covered process for Program 3. This requires the facility to develop and implement a management system, conduct a hazard assessment, implement the prevention requirements of 40 C.F.R. § 68.65 - § 68.87, develop and implement an emergency response program, and submit the data elements from 40 C.F.R. § 68.175 in their RMP.

40 C.F.R. § 68.15 Management – Lubrizol has an established management system to oversee the implementation of the risk management program elements, and has assigned a qualified person or position that has the overall responsibility for the development, implementation, and integration of the risk management program elements. Lubrizol facility personnel provided job assignments which documented the persons responsible for implementing individual requirements of the RMP, as required by this subpart.

Subpart B – Hazard Assessment

40 C.F.R. § 68.20 Applicability – Lubrizol is an owner or operator of a stationary source subject to this subpart with a Program 3 process that must prepare an offsite consequence analysis as provided in § 68.25 of this subpart, complete the five-year accident history as provided in § 68.42, and comply with all sections in this subpart for this process.

40 C.F.R. § 68.22 Offsite Consequence Analysis Parameters – I requested documentation of the offsite consequences analysis. I reviewed the documentation provided and had a discussion with appropriate Lubrizol facility personnel. Lubrizol applied the offsite consequence analysis parameters as required by this subpart.

40 C.F.R. § 68.25 Worst-Case Release Scenario Analysis – Lubrizol identified and reported a worst-case release scenario analysis for the RMP covered toxic substances. I requested documentation of the worst-case release scenario analysis. I reviewed the documentation provided and had a discussion with appropriate Lubrizol facility personnel. Lubrizol selected a boron trifluoride release for the worst-case release scenario. Lubrizol used EPA's RMP* Comp™ to determine the distance to the endpoint in the worst-case release scenario. Lubrizol used the proper endpoints for toxics as required by this subpart.

40 C.F.R. § 68.28 Alternative Release Scenario Analysis – Lubrizol identified and reported three alternative release scenarios for each of its RMP covered process toxic substances. I requested documentation of the alternative release scenario analysis. I reviewed the documentation provided and had a discussion with appropriate Lubrizol facility personnel. Lubrizol used EPA's RMP* Comp™ to calculate the distance to the endpoint in the toxics alternative release scenario. Lubrizol used the proper endpoints for toxics as required by this subpart. No mitigation systems were considered by the facility. The five-year accident history in 40 C.F.R. § 68.42, and the failure scenarios identified in 40 C.F.R. § 68.50 were considered in selecting the alternate release scenario.

40 C.F.R. § 68.30 Defining Offsite Impacts – Population – The documentation I reviewed contained a map with the circles delineating the areas covered by the offsite impact. Population numbers were verified with the latest available U.S. census data. Lubrizol reported these numbers to two significant figures.

40 C.F.R. § 68.33 Defining Offsite Impacts – Environment – The maps I reviewed identified the potential offsite impacts and all public receptors.

40 C.F.R. § 68.36 Review and Update – Lubrizol reviewed and updated its RMP on September 4, 2018. This RMP submittal identified process chemicals of boron trifluoride, hydrazine, and formaldehyde. Lubrizol reported no changes, to include any increases or decreases, of its process chemicals.

40 C.F.R. § 68.39 Documentation – I reviewed documentation for the worst-case scenarios that contained a description of the vessel or pipeline and substance selected as worst case, assumptions and parameters used, and the rationale for selection. The documentation also included the anticipated effect of the controls and mitigation on the release quantity and rate. Lubrizol's documentation of the worse-case and alternative release scenarios included a description of the scenario identified, assumptions and parameters used, and the rationale for the selection of the specific scenario. The documentation of estimated quantity released, release rate, duration of release, methodology used to determine distance to endpoints, and data used to estimate population and environmental receptors potentially affected was included in the reviewed materials during this inspection.

40 C.F.R. § 68.42 Five Year Accident History – Lubrizol reported no accidents for the five-year accident history in its RMP re-submittal, and no accidents were reported up to the date of this inspection.

Subpart D – Program 3 Prevention Program

40 C.F.R. § 68.65 Process Safety Information – Lubrizol indicated that process safety information is managed using an electronic online system. I reviewed covered process safety information for Process 3 of the facility. I also reviewed facility safety data sheets, block flow diagrams, process flow diagrams, and piping and instrumentation diagrams.

40 C.F.R. § 68.67 Process Hazard Analysis – I reviewed Lubrizol's Process Hazard Analysis (PHA) process and procedures for Process 3 of the facility. Lubrizol used the hazard and operability study (HAZOP) analysis technique to conduct its PHAs. Lubrizol reported its initial PHA for Process 3, and conducted an updated and revalidated PHA for this process within a five-year cycle.

The PHA for Process 3, was completed on October 5, 2011, and all 160 recommendations were completed. The PHA for Process 3, was completed on October 25, 2016, and identified 270 recommendations. Lubrizol established a system to promptly address the team's findings and recommendations. Lubrizol noted that it recently conducted a Layer of Protection Analysis on September 5 and 6, 2018, regarding Process 3 fire equipment. Lubrizol personnel also noted that the next PHA is scheduled to start on or before August 29, 2021.

40 C.F.R. § 68.69 Operating Procedures – Lubrizol used an electronic document management system to maintain its operating procedures. I reviewed and discussed with Lubrizol personnel randomly selected operating procedures from Process 3, and lockout/tagout. I observed that Lubrizol did not have validated signatures or authorization tracking for their electronic annual certification documents for 2014, 2015, and 2017.

40 C.F.R. § 68.71 Training – I discussed with Lubrizol personnel their training program to include training for new employees and how they insure that the three-year refresher training requirements are met. I requested and received the training records for three full-time employee operators who work at the facility. Training records reviewed were hardcopies and in electronic format. I recommended to Lubrizol personnel to maintain training records under one e-system to better adhere to training record reporting and recordkeeping requirements. Lubrizol met all the requirements of this subpart to include the required three-year refresher training requirements for all its operators.

40 C.F.R. § 68.73 Mechanical Integrity – I requested and was provided a procedure used to maintain the ongoing integrity of process equipment. Lubrizol personnel indicated that the mechanical integrity of its process equipment is managed using an electronic system. I discussed mechanical integrity with Lubrizol personnel.

Lubrizol personnel claimed to maintain the on-going mechanical integrity of process equipment by following recognized and generally accepted good engineering practices to include the American Petroleum Institute (API) standards. Lubrizol used these and other standards to determine the frequency of inspections and testing requirements for its pressure vessels, pressure relief valves and tanks. I requested and was provided inspections performed on the following Process 3 equipment: pressure vessel (BP1-B468-TK), pressure relief valve (BP1-B431-RV1), and tank (BP1-B422-TK). I requested and was provided recent inspections and testing documents performed on this Process 3 equipment to include the date of the inspection or test, the name of the person who performed the inspection or test, the identification number of the pressure vessel or tank on which the inspection or test was performed, a description of the inspection or test performed, and the results of the inspection or test. I also reviewed an inspection past due list that the facility maintained on a preventive maintenance spreadsheet which identified seven pieces of equipment.

40 C.F.R. § 68.75 Management of Change (MOC) – I reviewed Lubrizol's written procedure for MOC and discussed the MOC process with Lubrizol personnel. I reviewed four specific MOC documents numbered 6230-440 (closed December 12, 2014), 6230-394 (closed February 15, 2013), 6230-527 (open), 623-0-526 (open). I also reviewed P&ID diagrams associated with the closed MOC's.

40 C.F.R. § 68.77 Pre-startup Review – I reviewed Lubrizol's written Pre-Startup Safety Review (PSSR) procedures. The standard operating procedures for PSSR were final documents.

40 C.F.R. § 68.79 Compliance Audits – I was provided and reviewed two RMP compliance audits reports which were completed on February 25, 2015, that identified 15 findings, and February 21, 2018, that identified eight findings. I observed that the compliance audit report dated February 25, 2015, had one finding that was not completed (Find-8770), and the compliance audit report dated February 21, 2018, had three findings that were not completed (Find-14467, Find-14470, and Find-14471). Lubrizol provided documentation, during the close out meeting, that finding (Find-8770) for the compliance audit report dated February 25, 2015, had been completed. These two compliance audit reports had not been previously certified. However, Lubrizol provided the certifications with signature of its facility General Manager dated September 12, 2018.

40 C.F.R. § 68.81 Incident Investigation – I reviewed Lubrizol's completed OSHA form 300A, annual summary of work-related injuries, and OSHA form301 injuries and illnesses incident report for the past five years. I determined that none of the injuries reported were the result of an accidental release. Lubrizol reported no incidents within the past five years from any accidental releases.

40 C.F.R. § 68.83 Employee Participation – I reviewed a written plan of action regarding the implementation of employee participation. This plan was to insure consultation with employees on the conduct and development of process hazards analyses; the development of the other elements of process safety management; to provide the employees with access to process hazard analyses; and to provide all other information required to be developed under this rule. I discussed this document and employee participation with Lubrizol personnel. I also interviewed one full-time operator.

40 C.F.R. § 68.85 Hot Work Permit – I reviewed hot work permits that had been issued by Lubrizol prior to this inspection. The permits were well-maintained, documented thoroughly, and met the requirements of this subpart.

40 C.F.R. § 68.87 Contractors – I discussed with Lubrizol personnel the contractor selection process. Lubrizol used ISNetworld, an independently-owned compliance assistance safety programs service company, to aid in its contractor selection process. Lubrizol considered the contractor's safety performance, safety programs, training, and qualifications. Lubrizol documented that contractors had site-specific safety training.

Subpart E – Emergency Response

40 C.F.R. § 68.90 Applicability – Lubrizol is designated as a "first responder" in case of an accidental release of a regulated substance, and maintains four emergency vehicles onsite.

40 C.F.R. § 68.95 Emergency Response Program – I was provided, reviewed, and discussed with Lubrizol personnel their emergency response plan. Lubrizol reported that it had coordinated response actions with the local fire department, and appropriate mechanisms were in place to notify emergency responders when there is a need for a response. Some volunteer employees were trained as an additional duty to respond to releases and fires within the facility. Lubrizol is part on an emergency response team which consists of other chemical manufacturing companies. These other companies along with Lubrizol participate in emergency response training, planning, and drills on a regular basis and in coordination with local emergency response agencies and the Channel Industries Mutual Aid (CIMA). CIMA is a non-profit organization combining the fire-fighting, rescue, hazardous material handling and emergency medical capabilities of the refining and petrochemical industry in the Houston Ship Channel area. I was provided and reviewed third-party inspections conducted on a variety of emergency response equipment.

Subpart G—Risk Management Plan

40 C.F.R. § 68.190 Updates – Lubrizol submitted its most recent plan as a five-year update on September 4, 2018. A new five-year update will be due on or before September 4, 2023, or sooner if an update is required by 40 C.F.R. § 68.190 (b)(2) through (b)(7). Updates are required no later than three years after a newly regulated substance is first listed by EPA; no later than the date on which a new regulated substance is first present in an already covered process above a threshold quantity; no later than the date on which a regulated substance is first present above a threshold quantity in a new process; within six months of a change that requires a revised PHA or hazard review; within six months of a change that requires a revised offsite consequence analysis as provided in § 68.36; and within six months of a change that alters the Program level that applied to any covered process.

40 C.F.R. § 68.195 Required Corrections – Lubrizol will have to submit corrections of their RMP, if there is new accident history information, for any accidental release meeting the five-year accident history reporting criteria of § 68.42 and within six months of the release, or by the time the RMP is updated under § 68.190, whichever is earliest. Also, if the emergency contact information changes a submission to correct that information must be submitted within one month.

Close Out Meeting – A close out meeting was held on September 13, 2018, at 10:00 a.m. to discuss areas of concern, recommendations, and the timing of the completion of the inspection report. The following persons attended as identified in Table 2.

Table 2: Close Out Meeting Attendance

Name	Position
Patrick Shannon	HSES Manager
Anh-Thy Tran	Site Manager
David Sonnier	Health and Safety Specialist
Robert Gessner	Production Superintendent
Dennis Ray Langehennig	Maintenance Superintendent
Troy Merchant	HSES Compliance Manager
Kathleen Antoine	Environmental Manager
Fred Gregory	Process Safety Risk Manager
Tony Robledo	Inspector & Enforcement Officer EPA Region 6

The areas of concern in the following section were discussed during the close out meeting which included compliance assistance and the potential enforcement process.

Section III – AREAS OF CONCERN

1. 40 C.F.R. § 68.69(c) Operating procedures

> *"(c) 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."*

Lubrizol failed to have validated signatures or provide authorization tracking for the electronic annual certification documents for 2014, 2015, and 2017.

2. 40 C.F.R. § 68.79(d) Compliance audits

> *"(d) 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."*

Lubrizol failed to promptly document that deficiencies had been corrected for one compliance audit report dated February 21, 2018.

Section IV – FOLLOW UP

At the time of the inspection, Lubrizol provided all requested documents. On September 24, 2018, Lubrizol provided additional information and documents regarding the areas of concern. Lubrizol provided documents that demonstrated that two of the three February 21. 2018, compliance audit findings were completed.

Section V – LIST OF APPENDICES

Appendix 1 – Sign in sheet from opening and closing meeting.

Meeting with Lubrizol Bayport Plant

Purpose of meeting: RMP INSPECTION (CAA 112r)

Date: 9/11/18

	#	Name	Title	Representing	e-Mail	Phone
✓	1	Tony Robledo	Inspector	U.S. EPA	robledo.tony@epa.gov	214-665-8182
✓	2	Anh-Thy Tran	Site Manager	Lubrizol	anh-thy.tran@lubrizol.com	832-260-7600
✓	3	PATRICK SHANNON	HSES MANAGER	LUBRIZOL	PATRICK.SHANNON@LUBRIZOL.COM	832-260-7799
✓	4	David Sonnier	Health and Safety Spec.	Lubrizol	david.sonnier@lubrizol.com	832-260-7660
✓	5	Robert Gessner	Production Superintendent	Lubrizol	Robert.Gessner@lubrizol.com	832-260-7640
✓	6	DENNIS RAY LANGEHENNIG	MAINTENANCE SUPERINTENDENT	LUBRIZOL	DENNIS.RAY.LANGEHENNIG@LUBRIZOL.COM	832-260-7635
	7	MARK A. TURVEY	FACILITIES PROTECTION SUPERINTENDENT / FIRE CHIEF	LUBRIZOL	MARK.TURVEY@LUBRIZOL.COM	832-260-7391
✓	8	Troy Merchant	HSES Compliance Manager	Lubrizol	troy.merchant@lubrizol.com	832-260-7851
	9	Tim Henggeler	Environmental Engineer	Lubrizol	timothy.henggeler@lubrizol.com	832-260-7602
✓	10	KATHLEEN ANTOINE	ENVIRONMENTAL MGR	LUBRIZOL	KATHLEEN.ANTOINE@LUBRIZOL.COM	832-260-7261
✓	11	Fred Gregory	Process Safety + Risk Mgr.	Lubrizol	FREDERICK.GREGORY@LUBRIZOL.COM	832-260-7816
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✓ = Attended close-out meeting on 9/13/18