

Region 6 - Enforcement & Compliance Assurance Division
INSPECTION REPORT

Inspection Date(s):	5/16/2022 – 5/20/2022	
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:	Covestro LLC	
Facility Name:	Bayer Material Science Baytown (Covestro)	
Facility Physical Location:	8500 West Bay Road	
(city, state, zip code)	Baytown, Texas 77523	
Mailing address:	8500 West Bay Road	
(city, state, zip code)	Baytown, Texas 77523	
County/Parish:	Chambers County	
Facility Phone Number	(281)-383-6000	
Facility Contact:	Lisa Faris	Process Safety Director
	Lisa.faris@covestro.com	
FRS Number:	110000463098	
Identification/Permit Number:	Air Operating Permit ID: CI-0016-S	
RMP ID:	100000059287	
NAICS:	325110	
SIC:	N/A	
Personnel participating in inspection:		
Charese Simpson	EPA Region 6	Inspector
Howard Cole	EPA Region 6	Inspector
Daniel Williams	EPA Region 6	Inspector
Lisa Faris	Covestro	Process Safety Director
Mark Kohlman	Covestro	Health and Safety Manager
Heather Zaffuta	Covestro	HES Governance
Glenn Sabadosa	Covestro	Water Quality Manager
Erik Pierce	Covestro	Day Safety Superintendent
Mike Baker	Covestro	MDI Plant Manager
EPA Lead Inspector Signature/Date		8.8.2022
	Charese Simpson	Date
Supervisor Signature/Date		
	Samuel Tate	Date

Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

United States Environmental Protection Agency (EPA) Region 6 inspectors Charese Simpson, Howard Cole, and Daniel Williams, arrived at the Covestro, LLC (Covestro) facility at 1:45 PM on Monday, May 16, 2022, for an announced inspection. We met with Lisa Faris (Process Safety Director), Heather Zaffuta (HES Governance), Mark Kuhlman (Health and Safety Manager), Glenn Sabadosa (Water Quality Manager), and Erik Pierce (Day Safety Superintendent) for an opening meeting (**Appendix 1**). I presented my credentials and informed Covestro 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. Covestro is a non-union facility

FACILITY DESCRIPTION

Covestro is located at 8500 West Bay Road Baytown, Texas 77523, occupies 1,700 acres and employs approximately 1,052 full time employees. The facility's primary activities encompass supporting the automotive and construction industries. Products manufactured by Covestro include the following: polycarbonate thermoplastic, raw materials for polyurethane foams, high-performance coatings, and basic inorganic chemical products. Covestro's regulated processes includes six (6) regulated substances that are present above threshold quantities at the facility. The facility is a CAA Title V facility. Covestro has claimed certain descriptions in this inspection report as confidential business information (CBI), therefore, EPA cannot release that specific information to the public.

Section II – OBSERVATIONS

On Monday, May 16, 2022, EPA was accompanied by Covestro personnel to conduct a tour of the site. We observed the process units, control room, and concluded to focus this inspection on one specific unit, specifically MR3. Prior to the tour, Covestro provided EPA with a facility overview and safety orientation.

Subpart A – General

40 C.F.R. § 68.10 Applicability – Covestro 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. Covestro has seven RMP covered processes, six of which are listed under NAICS code 32511 (Petrochemical Manufacturing), and one that is listed under NAICS code 32518 (Other Basic Inorganic Chemical Manufacturing). The Covestro facility processes are also subject to the Occupational Safety and Health Administration (OSHA) process safety management standard, 29 C.F.R. § 1910.119. These factors make the processes at the Covestro facility Program 3 and subject to 40 C.F.R. § 68.10(d).

40 C.F.R. § 68.12 General requirements – The owner or operator of a stationary source subject to this regulation shall submit a single RMP, as provided in 40 CFR § 68.150 to 68.185. The RMP shall include a

registration that reflects all covered processes. I reviewed the re-submission of Covestro's RMP. It listed the toxic regulated chemicals and the associated Program 3 processes.

40 C.F.R. § 68.15 Management – During the inspection, EPA spoke with Henry Delgado, Technical Training and IMS Manager. Henry explained Covestro's management system and presented Covestro's management organizational chart, "Health Safety and Environmental Quality (HSEQ) Leadership Team". Covestro failed to assign a qualified person or position that has overall responsibility for RMP. Each unit functions separately from each other and it is not clear who is responsible for development, implementation, and integration of the RMP elements. In addition, Covestro did not provide an organization chart or similar document that identifies the names, positions, and lines of authority of the people that have been delegated development, implementation, and integration of RMP elements.
[AOC #1 - 40 C.F.R. § 68.15(b) and (c)]

Subpart B – Hazard Assessment

40 C.F.R. § 68.20 Applicability – Covestro 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 – Covestro employed the parameters specified by EPA in this rule by using the MARPLOT and RMP*Comp™ 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 – Covestro identified and analyzed worst-case scenarios for each toxic substance in its seven (7) Program 3 processes using the RMP*Comp™ software, thus meeting the requirements of the regulation.

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

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

40 C.F.R. § 68.33 Defining Off-Site Impacts - Environment – Covestro used US Geological Survey maps data to determine the environmental receptors and the distances to endpoints.

40 C.F.R. § 68.36 Review and Update – Covestro 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 – Covestro maintained records of the offsite consequence analyses in accordance with this subpart. These records included:

- documentation of vessels or pipelines;
- substances selected for worse case and alternative release scenarios;

- 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 – EPA reviewed Covestro’s five-year accident history and OSHA 300 Logs from 2018 to present. The regulation requires any accidental release from the covered process that results in on-site deaths, injuries, significant property damage on site, known off-site deaths, injuries, evacuations, sheltering in place, property damage, or environmental damage to be included in its accident history. EPA identified one accidental release from the covered process that occurred on April 5, 2022. This incident resulted in a shelter-in-place order but was not included in the five-year accident history. During the inspection, EPA noted Covestro has six (6) months to include the incident into their five-year accident history.

Subpart D – Program 3 Prevention Program

40 C.F.R. § 68.65 Process Safety Information – Covestro 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 (SDS) for the process chemicals were provided, and detailed process safety information was provided that contains the following data for the hazards of the substances used: 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. 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 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, material and energy balances, and safety systems.

40 C.F.R. § 68.67 Process hazard analysis (PHA) – EPA reviewed Covestro’s most recent PHAs. The facility completes each PHA based on the five-year cycle from the previous PHA. Covestro conducts PHAs using the Hazard and Operability Study (HAZOP) methodology to determine and evaluate the hazards of the process being analyzed.

During the inspection, each PHA EPA reviewed addressed the hazards of the process and included: identification of any incident that had a likely potential for catastrophic consequences; engineering and administrative controls applicable to hazards and their interrelationships; consequences of failure of engineering and administrative controls; and an evaluation of a range of the possible safety and health effects of failed controls. However, Covestro’s PHAs did not adequately address stationary source siting factors or human factors as required by this part. **[AOC #2 – 40 C.F.R § 68.67 (a)]**

EPA specifically examined Covestro’s most recent PHA reports for the MR3 unit. The PHA reviewed addressed: (1) the hazards of the process; (2) the identification of any previous incident which had a likely potential for catastrophic consequences; (3) engineering and administrative controls applicable to the hazards, and their interrelationships; and (4) consequences of failure of engineering and administrative controls.

The PHA was performed by a team with expertise in engineering and process operations. The team included appropriate personnel from Covestro and an engineering consultant with knowledge of the facility and in the specific PHA methodology used. Covestro established a system to promptly address the PHA team's findings and recommendations and assure that the recommendations are resolved in a timely manner and that the resolution is documented.

40 C.F.R. § 68.69 Operating Procedures – EPA reviewed various operating procedures that provided instructions or steps for conducting activities associated with each covered process, consistent with the safety information. The operating procedures reviewed 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. During the inspection, EPA reviewed Covestro's MR3 operating procedures certification. Covestro is required to annually certify that operating procedures are current and accurate. Covestro failed to annually certify that operating procedures are current and accurate (**Figure 1**). [AOC #3 - 40 C.F.R. § 68.69(c)]

Figure 1.

<u>Unit Procedures</u>	<u>Last Revision Date</u>	<u>Last Certification Date</u>
Procedure #1 (CBI)	2017	4/22/15
Procedure #2 (CBI)	2018	4/22/15
Procedure #3 (CBI)	2017	2/18/15

40 C.F.R. § 68.71 Training – EPA reviewed Covestro'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.

During the inspection, EPA reviewed training records 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 years.

40 C.F.R. § 68.73 Mechanical Integrity – Covestro provided their mechanical integrity procedure that is used to establish and implement written procedures for maintaining the on-going integrity of process equipment. Covestro did not implement the written procedures established by their mechanical integrity and Risk Based Inspection (RBI) program. In accordance with Covestro's risk-based inspection program, ultrasonic testing and internal inspection was scheduled to be conducted on pressure vessel KB-051 every 48 months, by February 20, 2022. As of May 16, 2022, ultrasonic testing and internal inspection of KB-051 had not been performed. In addition, EPA reviewed documentation of Covestro's mechanical integrity process and inspection records for RMP covered equipment. Covestro failed to properly classify phosgene-containing and chlorine containing piping as American Petroleum Institute (API) 570 Class 1; which requires external inspections and ultrasonic testing every 5-years. Covestro's mechanical integrity/RBI program has extended inspection and testing of piping to every ten-years for piping circuits: LP02, LP03, LP04, LP06, LP010, LP019, LP038. Covestro failed to establish a written inspection and test plan for the following pressure vessels: KB-053 Hot Tower Phosgenation #3 and

0092-224 Ammonia Vaporizer. In addition, Covestro failed to implement maintenance procedure S-070, Rev-9, Non-Routine Work Assessments, during the Level 2 cleaning of the liquid overflow header, hydro-blasting of a pipe containing phosgene-contaminated solids. **[AOC #4 – 40 C.F.R. § 68.73(b)]**

As required by 68.73(d)(2), inspection and testing procedures shall follow recognized and generally accepted good engineering practices. Covestro failed to ensure that the following pressure vessels received an external inspection every five-years in accordance with API 510, Section 6.4 (**Figure 2**). According to API 510 Section 6.4 External Inspection- 6.4.1, unless justified by an RBI assessment, each above ground vessel shall be given a visual external inspection at an interval that does not exceed the lesser of five years or the required internal/on-stream inspection. In addition, Covestro did not ensure that the following pressure vessels received an internal inspection every ten-years in accordance with API 510, Section 6.5.1.1: 224 Ammonia Vaporizer and 225 Ammonia Storage Tank. According to API 510, Section 6.5 Internal, On-stream, and Thickness Measurement Inspections- 6.5.1.1, unless justified by a RBI assessment, the period between internal or on-stream inspections and thickness measurement inspections shall not exceed one-half the remaining life of the vessel or 10 years, whichever is less. Covestro failed to ensure that Class 1 piping received external inspections every five-years in accordance with API 570, Section 6.33 (**Figure 3**). For Class 1, 2, and 3 piping, the period between thickness measurements for condition monitoring locations (CMLs) or circuits should not exceed one-half the remaining-life, or the maximum intervals recommended, whichever is less. Whenever the remaining life is less than four years, the inspection interval may be the full remaining life up to a maximum of two years (**Figure 4**). Covestro failed to ensure that Class 1 piping received thickness measurements every five-years in accordance with API 570, Section 6.33 (**Figure 5**). Covestro did not ensure that Class 1 piping circuit LP019 received thickness measurements every five-years in accordance with API 570, Section 6.33. Covestro conducted ultrasonic testing on piping circuit LP019 on April 30, 2020; but had not done any ultrasonic testing of piping between 2000 and March 2020. The area of concern addresses the failure to perform ultrasonic testing from April 2017-April 2020. **[AOC #5 -40 C.F.R. § 68.73(d)(2)]**

Covestro failed to establish an inspection and testing program in accordance with API 510 and API 570 and good engineering practices. Covestro's mechanical integrity program for inspection and testing of process equipment allows equipment to be operated beyond their inspection and testing due date without being considered overdue. Inspections are not considered overdue until the end of the year. In accordance with API 510 and 570, pressure vessels or pressure-relieving devices that are operated beyond their due date without a valid deferral in accordance with these requirements are not permitted by this code. Inspections, tests, or examinations for pressure vessels and associated pressure-relieving devices that cannot be completed by their due date are considered as overdue. **[AOC #6 -40 C.F.R. § 68.73(d)(3)]**

As required by 68.73(e), the owner or operator shall correct deficiencies in equipment that are outside acceptable limits (defined by the process safety information in §68.65) before further use or in a safe and timely manner when necessary means are taken to assure safe operation. Covestro failed to correct deficiencies in the storage tank outlet piping which has had a pipe clamp installed to control a leak since 2012 as per MOC MR3-2012-069. **[AOC #7 – 40 C.F.R. § 68.73(e)]**

Figure 2.

Pressure Vessel	Last External Inspection
Pressure Vessel #1 (CBI)	No external inspection identified
Pressure Vessel #2 (CBI)	2013

Pressure Vessel #3 (CBI)	10/26/2016
Pressure Vessel #4 (CBI)	11/26/2015
Pressure Vessel #5 (CBI)	No external inspection identified
Pressure Vessel #6 (CBI)	11/20/2012
Note: All external inspections for the following pressure vessels listed were past due during the time of the inspection.	

Figure 3. - (See Figure 4 for the following Class 1 piping circuits)

Circuit	External Last Inspection	Next External Inspection Due Date
LP06	3/31/2014	3/31/2019
LP07	6/20/2014	6/20/2019
LP038	5/21/2014	5/21/2019
LP019	6/10/2014	6/10/2019
LP02	5/21/2014	5/21/2019

Figure 4.

Type of Circuit	Thickness Measurements	Visual External
Class 1	5 years	5 years
Class 2	10 years	5 years
Class 3	10 years	10 years

Figure 5 - (See Figure 4 for the following Class 1 piping circuits)

Circuit	UT Last Inspection	UT Inspection Due Date
LP03 UT Circuit 5	9/22/2014	9/22/2019
LP04 UT Circuit 6	10/3/2014	10/3/2019
LP04 UT Circuit 8	10/3/2014	10/3/2019
LP038-LQ005 UT	10/1/2014	10/1/2019
LP038-LQ006 UT	10/3/2014	10/3/2019
LP006 UT CIRCUIT 15	9/14/2016	9/14/2021
LP006 UT CIRCUIT 11	9/22/2014	9/22/2019

40 C.F.R. § 68.75 Management of Change (MOC) – EPA reviewed Covestro’s MOC procedure “S-043 HSEQ Site Procedures” and spoke with Joann Stubbs (Safety Coordinator). The written procedure assured the facility managed changes to process chemicals, technology, equipment, procedures, and changes to stationary sources that affect a covered process. The procedure assured that the following considerations were addressed prior to any change: technical basis for change, impact of change on safety and health, modifications to operating procedures, necessary time period for the change, and authorization requirements for a proposed change. Covestro failed to implement its written Management of Change (MOC) Procedure S-043 Section 4.13, Temporary Changes which requires that: “When a temporary MOC is initiated a removal date must be established. The date of this MOC should not exceed six months past the estimated startup date or the next equipment or unit shutdown, at which time the temporary change must be removed and the equipment be returned to normal condition or repaired.” MOC MR3-2012-069 pertains to an active pipe clamp on the storage tank outlet piping, installed to control a leak in 2012. Covestro has indicated that MOC MR3-2012-069 for the active pipe clamp is no longer available. **[AOC #8 -40 C.F.R. § 68.75(a)]**

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

40 C.F.R. § 68.79 Compliance Audits – Covestro provided their most recent certified RMP Compliance Audit documents. Covestro 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.

Covestro’s compliance audit was conducted by at least one person knowledgeable in the processes and they developed a report of the audit findings. Covestro is required to promptly determine and document an appropriate response to each of the findings of the compliance audit, however, Covestro failed to document those deficiencies were corrected in their compliance audit corrective action plan. Action item #13 states that six ammonia refrigeration units were not covered by the 2014 PHA or the 2016 BPA. It was not until December 11, 2020, that this item was marked closed. This is not considered prompt correction of the deficiencies. **[AOC #9 - 40 C.F.R. § 68.79(d)]**

40 C.F.R. § 68.81 Incident Investigation – During the inspection, Covestro provided a list of all incident investigations that occurred within the past five years. Of those reviewed, the incident investigation team consisted of at least one person knowledgeable in the process involved. Covestro has an incident investigation procedure for both near-miss and incident reporting. Covestro investigated each incident that resulted in, or could reasonably have resulted in, a catastrophic release of a regulated substance.

40 C.F.R. § 68.83 Employee Participation – Covestro developed a written plan of action regarding the implementation of the employee participation required by this section, which is integrated into the program elements. Covestro’s written plan describes how they consult with employees on the performance and development of process hazard analyses, and on the development of the other elements of process safety management required under the rule. The action plan 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 – Covestro provided their hot work procedure that detailed guidance for hot work/safe work activities at the site. EPA reviewed various hot work permits. Each permit EPA reviewed documented that fire prevention and protection requirements were implemented prior to beginning hot work operations. Several permits EPA reviewed indicated that a fire watch was needed, however, the fire watch did not sign his/her name on the permit to indicate that a fire watch was present. The following hot work permits, such as but not limited to, were missing a fire watch: Job 297, Job 3047, Job 3045, and Job 297. **[AOC #10 -40 C.F.R. § 68.85(b)]**

40 C.F.R. § 68.87 Contractors – During the inspection, EPA reviewed Covestro’s contractor procedure and spoke with Corey Wright (Senior Contractor Safety). Covestro uses a standardized pre-qualification form (PQF) to obtain and evaluate information regarding the contract owner or operator’s safety performance and programs. Prior to starting work onsite, contractors must attend the Houston Area Safety Council (HASC) to receive site specific and general safety training during which the contractors are informed of known potential fire, explosion, or toxic release hazards related to the contractor’s work

and the process. Before starting a job, contractors are required by Covestro to complete a Job Safety Analysis (JSA).

Subpart E – Emergency Response

40 C.F.R. § 68.90 Applicability – Covestro is designated as a “responding” stationary source in case of an accidental release of a regulated substance.

40 C.F.R. § 68.93 Emergency Response Coordination Activities – Covestro coordinates response needs with Baytown Local Emergency Planning Committee (LEPC) and Emergency Operations Center (EOC). During the time of the inspection, Covestro provided documents of coordination with local authorities that included the names of the individuals involved, their contact information, and the nature of the coordination for the recent coordination activities that took place.

40 C.F.R. § 68.95 Emergency response program – EPA reviewed Covestro’s emergency response plan. The plan included: procedures for informing the public and local emergency response agencies about accidental releases and procedures and measures for emergency response after an accidental release of a regulated substance. Covestro’s plan included proper documentation of first aid and emergency medical treatment necessary to treat accidental human exposures. The plan did not include procedures for the use of emergency response equipment, and for its inspection, testing, and maintenance in relevant emergency response procedures. Covestro failed to provide the relevant procedure in their Emergency Action Plan that meets this requirement. **[AOC #11 - 40 C.F.R. § 68.95(a)(2)]** Covestro provided training documentation for all employees in relevant procedures. EPA reviewed Covestro’s CPR/first aid training, HAZWOPER, and respirator training documentation.

40 C.F.R. § 68.96 Emergency Response Exercises – As part of coordination with local emergency response officials required by §68.93, Covestro consulted with officials to establish an appropriate frequency for field exercises.

Subpart G – Risk Management Plan

40 C.F.R. § 68.190 Updates – Covestro RMP was re-submitted on May 7, 2019.

40 C.F.R. § 68.195 Required Corrections – Covestro’s next RMP registration re-submission is due by May 7, 2024, unless an update or correction is required by 40 C.F.R. 68.190 or 40 C.F.R. 68.195 prior to the five-year renewal deadline.

Section III – AREAS OF CONCERN

AOC 1 – 40 C.F.R. § 68.15(b) and (c) Management

“(b) The owner or operator shall assign a qualified person or position that has the overall responsibility for the development, implementation, and integration of the risk management program elements. (c) When responsibility for implementing individual requirements of this part is assigned to persons other than the person identified under paragraph (b) of this section, the names or positions of these people shall be documented, and the lines of authority defined through an organization chart or similar document.”

Covestro failed to assign a qualified person or position that has overall responsibility for RMP. Each unit functions separately from each other and it is not clear who is responsible for development, implementation, and integration of the RMP elements. In addition, Covestro failed to provide an organization chart or similar document that identifies the names, positions and lines of authority of the people that have been delegated development, implementation and integration of RMP elements.

AOC 2 – 40 C.F.R § 68.67(a) Process Hazard Analysis

“(a) The owner or operator shall perform an initial process hazard analysis (hazard evaluation) on processes covered by this part. 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. The owner or operator shall determine and document the priority order for conducting process hazard analyses based on a rationale which includes such considerations as extent of the process hazards, number of potentially affected employees, age of the process, and operating history of the process. The process hazard analysis shall be conducted as soon as possible, but not later than June 21, 1999. Process hazards analyses completed to comply with 29 CFR 1910.119(e) are acceptable as initial process hazards analyses. These process hazard analyses shall be updated and revalidated, based on their completion date.”

Covestro’s PHAs, specifically “MR3 2017 PHA Human Factors Checklist” and “MR3 2017 PHA Facility Siting Checklist”, did not adequately address stationary source siting factors or human factors as required by this part.

AOC 3 – 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.”

Covestro failed to annually certify that operating procedures are current and accurate. *(Refer to Figure 1)*

AOC 4 – 40 C.F.R § 68.73(b) Mechanical Integrity

“(b) Written procedures. The owner or operator shall establish and implement written procedures to maintain the on-going integrity of process equipment.”

In accordance with Covestro’s Risk-based Inspection program, ultrasonic testing and internal inspection was scheduled to be conducted on pressure vessel KB-051 every 48 months, by February 20, 2022. As of May 16, 2022, ultrasonic testing, and internal inspection of KB-051 had not been performed.

Covestro has failed to properly classify phosgene-containing and chlorine containing piping as API 570 Class 1, which requires external inspections and ultrasonic testing every 5-years. Covestro’s mechanical integrity/RBI program has extended inspection and testing of piping to every ten-years for piping circuits: LP02, LP03, LP04, LP06, LP010, LP019, LP038.

Covestro failed to establish a written inspection and test plan for the following pressure vessels:
Pressure Vessel #5 and Pressure Vessel #1.

AOC 5 – 40 C.F.R § 68.73(d)(2) Mechanical Integrity

“(d) Inspection and testing. (2) Inspection and testing procedures shall follow recognized and generally accepted good engineering practices.”

Covestro failed to ensure that the following pressure vessels received an external inspection every five-years in accordance with API 510, Section 6.4. **(Refer to Figure 2)**

Covestro failed to ensure that the following pressure vessels received an internal inspection every ten-years in accordance with API 510, Section 6.5.1.1: Pressure Vessel #1 and Pressure Vessel #2.

Covestro failed to ensure that Class 1 piping received external inspections every five-years in accordance with API 570, Section 6.33, Table 1, for the following Class 1 piping circuits. **(Refer to Figure 3)**

Covestro failed to ensure that Class 1 piping received thickness measurements every five-years in accordance with API 570, Section 6.33, Table 1 for the following Class 1 piping circuits. **(Refer to Figure 5)**

Covestro did not ensure that Class 1 piping circuit LP019 received thickness measurements every five-years in accordance with API 570, Section 6.33. Covestro conducted ultrasonic testing on piping circuit LP019 on April 30, 2020; but had not done any ultrasonic testing of piping between 2000 and March 2020. The area of concern addresses the failure to perform ultrasonic testing from April 2017-April 2020.

AOC 6 – 40 C.F.R § 68.73(d)(3) Mechanical Integrity

“(d) Inspection and testing. (3) 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.”

Covestro failed to establish an inspection and testing program in accordance with API 510 and API 570 and good engineering practice. Covestro's mechanical integrity program for inspection and testing of process equipment allows equipment to be operated beyond their inspection and testing due date without being considered overdue. Inspections aren't considered overdue until the end of the year. In accordance with API 510 and 570, pressure vessels or pressure-relieving devices that are operated beyond their due date without a valid deferral in accordance with these requirements are not permitted by this code. Inspections, tests, or examinations for pressure vessels and associated pressure-relieving devices that cannot be completed by their due date are considered as overdue.

AOC 7– 40 C.F.R § 68.73(e) Mechanical Integrity

“(e) Equipment deficiencies. The owner or operator shall correct deficiencies in equipment that are outside acceptable limits (defined by the process safety information in § 68.65) before further use or in a safe and timely manner when necessary means are taken to assure safe operation.

Covestro failed to correct deficiencies in the storage tank outlet piping which has had a pipe clamp installed to control a leak since 2012 as per MOC MR3-2012-069.

AOC 8 – 40 C.F.R § 68.75(a) Management of Change

“(a) 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.”

Covestro failed to implement its written Management of Change Procedure S-043 Section 4.13, Temporary Changes which requires that: “When a temporary MOC is initiated a removal date must be established. The date of this MOC should not exceed six months past the estimated startup date or the next equipment or unit shutdown, at which time the temporary change must be removed and the equipment be returned to normal condition or repaired.” MOC MR3-2012-069 pertains to an active pipe clamp on the storage tank outlet piping, installed to control a leak in 2012. Covestro has indicated that MOC MR3-2012-069 for the active pipe clamp is no longer available.

AOC 9 – 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.”

Covestro failed to document those deficiencies were corrected in their compliance audit corrective action plan for 2018. Action item #13 states that six ammonia refrigeration units were not covered by the 2014 PHA or the 2016 BPA. It was not until December 11, 2020, that this item was marked closed. This is not considered prompt correction of the deficiency.

AOC 10 – 40 C.F.R § 68.85(b) Hot Work

“(b) The permit shall document that the fire prevention and protection requirements in 29 CFR 1910.252(a) have been implemented prior to beginning the hot work operations; it shall indicate the date(s) authorized for hot work; and identify the object on which hot work is to be performed. The permit shall be kept on file until completion of the hot work operations. 29 CFR 1910.252(a)(2)(iii)(A) Fire watchers shall be required whenever welding or cutting is performed in locations where other than a minor fire might develop, or any of the following conditions exist.”

Several permits EPA reviewed indicated that a fire watch was needed, however, the fire watch did not sign his/her name on the permit to document that a fire watch was present. The following hot work permits, such as but not limited to, were missing a fire watch: Job 297, Job 3047, and Job 3045.

AOC 11 – 40 C.F.R § 68.95(a)(2) Emergency Response Program

“(a) 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: (2) Procedures for the use of emergency response equipment and for its inspection, testing, and maintenance.”

Covestro failed to provide the relevant procedure in their Emergency Action Plan.

Closing Meeting - EPA conducted a closing conference at Covestro on May 20, 2022. During the closing conference, EPA reviewed the Area of Concerns noted during the inspection.

Section IV – FOLLOW UP

Additional documents were received after the inspection in support of Area of Concern Findings.

Section V – LIST OF APPENDICES

Appendix 1 – Opening conference/Exit briefing sign-in sheet