United States Environmental Protection Agency / Region 4

Risk Management Program Inspection Report

Arclin USA, LLC

Memphis, Tennessee
April 18-20, 2023

1.0 Introduction

The U.S. Environmental Protection Agency's efforts to reduce the likelihood and severity of chemical accidents includes planning and legislative initiatives such as the National Contingency Plan, the Emergency Planning and Community Right-to-Know Act (EPCRA), and the Accidental Release Prevention requirements under Section 112(r) of the Clean Air Act (CAA), as amended in 1990. This report outlines an inspection of the Risk Management Program (RMP) as mandated by Section 112(r)(7) of the CAA.

The focus of this inspection was to assess the RMP for the chemical manufacturing process at the Arclin USA, LLC (Arclin) facility located in Andalusia, Covington County, Alabama. This facility was selected for inspection because it had never been inspected under the RMP. The inspection, which was conducted April 18-20, 2023, consisted of an examination of program documentation, as well as site reviews of various aspects of facility operations. Personnel from the facility participated throughout the inspection. Requested program documents were provided for further review off-site. This report will provide a background of the facility and a listing of observations.

2.0 Background

Arclin operates a resin manufacturing facility located in Andalusia, Alabama. Resins manufactured at the facility are used in specialty slow-release fertilizers by the agricultural industry. The facility operates six processes which are regulated as program level 3. According to facility records, the facility has a maximum of 1,886,000 pounds of formaldehyde and 52,000 pounds of anhydrous ammonia on site. The facility was originally built in 1970 and was updated to its current configuration in 2002. The facility has 14 operators who operate the facility 24 hours per day, seven days per week. There is no labor union at the Arclin Andalusia facility.

Resin is manufactured as a batch process in four separate kettles inside the resin manufacturing building where various chemicals including formaldehyde, phenol, urea and anhydrous ammonia are blended to create a product that can then be trucked off-site for distribution. Formaldehyde used for resin production is manufactured in a continuous on-site process located in an outdoor area separate from the resin manufacturing building. To manufacture formaldehyde, methanol is combined with oxygen (air) and a catalyst in a heated reactor. Formaldehyde formed in the reactor is cooled and diluted with water to create a 52 percent (%) solution that is then stored on site in one of four formaldehyde storage tanks ranging in size from 30,000 gallons to 50,000 gallons. The formaldehyde can also be sold directly to formaldehyde distributors. Anhydrous

ammonia is delivered to the facility via tank truck and stored in a 13,600-gallon horizontal storage tank before being pumped to an ammonia vaporizer and then into one of the resin manufacturing kettles. Other chemicals including methanol, urea and phenol are delivered to the facility by rail and all resin products are shipped off-site by truck. The resin manufacturing process at the facility is subject to the RMP requirements of 40 C.F.R. Part 68 and EPCRA Section 302. The background specifics are summarized as follows in Table 1.

TABLE 1: Inspection Information Summary

Inspection Team

Inspector: Amy Federoff, Eastern Research Group (ERG)
Inspector: Mark Briggs, ERG
Date of Facility Visit: April 18-20, 2023

Facility Identification

Name: Arclin USA, LLC
Street Address: 14139 US Highway 84
City: Andalusia County: Covington State: Alabama Zip: 36421
EPA Facility ID No: 1000 0008 8255
Dun & Bradstreet (D&B) No: 9420126
Latitude: 31.341944
Longitude: -086.524167

Name, address and phone of corporate parent company:
Owner/Operator: Arclin USA, LLC
Mailing Address: 1000 Hotcomb Woods Pkwy Suite 342
City: Atlanta State: Georgia Zip: 30076
Phone: 678-781-4410

Name, title, and email of person responsible for 40 C.F.R. Part 68 implementation:
Name: Andy Smith
Title: HSE Leader
Phone: (334) 222-7581
Email: andy.smith@arclin.com

Name and title of emergency contact:
Name: Andy Smith
Title: HSE Leader
Day phone: (334) 222-7581
24-hour Phone: (334) 343-0429
Email: andy.smith@arclin.com

Name and titles of stationary source personnel involved in site inspection *(accompanied site tours, provided documents and explanations):*
Name: Daniel Cox
Title: Plant Manager
Phone: N/A
Email: daniel.cox@arclin.com

Name: Andy Smith
Title: HSE Manager
Phone: (334) 222-7581
Email: andy.smith@arclin.com

Name: Brad Crawford
Title: Corporate EHS Leader
Phone: N/A
Email: brad.crawford@arclin.com

Name: Kyle Nolen
Title: Operations Manager
Phone: N/A
Email: kyle.nolen@arclin.com

Name: Oscar Ferut
Title: Process Engineer
Phone: N/A
Email: oscar.ferut@arclin.com

Name: Mark Hicks
Title: Plant Engineer
Phone: N/A
Email: mark.hicks@arclin.com

Note: This is not a union facility.

Date and Program Levels of Submitted Risk Management Plan

Date of initial submission: June 17, 1999
Date of most recent submissions: May 21, 2019

Process: AF-1
Process ID: 1000122554
Chemical Name: Formaldehyde (solution)
Program Level as reported in RMP: 3

Process: K1A
Process ID: 1000122555
Chemical Name: Formaldehyde (solution)
Program Level as reported in RMP: 3

Process: AST-1
Process ID: 1000097752
Chemical Name: Ammonia (anhydrous)
Program Level as reported in RMP: 3

Process: K-2A
Process ID: 1000097754
Chemical Name: Formaldehyde (solution)
Program Level as reported in RMP: 3

Process: K-3A
Process ID: 1000097755
Chemical Name: Formaldehyde (solution)
Program Level as reported in RMP: 3

Process: K-4A
Process ID: 1000097756
Chemical Name: Formaldehyde (solution)
Program Level as reported in RMP: 3

NAICS codes: 325199 (All Other Basic Organic Chemical Manufacturing); 325211 (Plastics Material and Resin Manufacturing)

3.0 Observations

The inspection of the Arclin facility evaluated various sections of the RMP regulations (40 C.F.R. Part 68, Program Level 3) and the inspection checklist included in "Guidance for Conducting Risk Management Programs Inspections under Clean Air Act Section 112(r)." The inspection began with an opening discussion of facility operations. The discussion was followed by a tour of the facility's chemical manufacturing process areas. EPA inspectors then requested paperwork associated with the facility's Risk Management Plan (RMPlan). The documents were reviewed by EPA inspectors on-site and provided for review off-site. An inspection out-brief was conducted where EPA inspectors described their observations. Observations from the RMP inspection at the Arclin are discussed below:

1. 40 C.F.R. § 68.65(d)(1)(vii) requires the process safety information pertaining to the equipment in the process to include material and energy balances.

    - After a discussion with facility members to review the content typically included in a material and energy balance, the facility was unable to produce a material and energy balance for the formaldehyde manufacturing process. Item Number 13 of the

Document Review/Request List dated to April 20, 2023 lists the "Energy and mass balance for the covered processes." In response to this request, the facility submitted a graphic (Item #13 Energy and Mass Balance.pdf) that lists mass flow of water for the listed heat exchanger units and the final mass flow rate (in units of pounds per hours [lb/hr]) of formaldehyde sent to storage. A material balance for this process should include the quantity of formaldehyde present throughout all stages of the process. In addition to the mass flow rate of formaldehyde sent to storage, the material balance should also include the quantity of formaldehyde created in the reactor, the quantity of formaldehyde recirculated into the absorber, and the quantity of formaldehyde sent to the regenerative thermal oxidizer (RTO). The provided graphic does not list any quantities of energy created during the reaction nor does it list the energy added or removed to/from the heat exchanger units throughout the process.

2. 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 (RAGAGEP).

    - At the time of the inspection, the Inspection Team observed the use of methanol piping located on the support bridge near the second level of the formaldehyde absorber as the primary support for other piping. Using piping to support other piping is not in accordance with the following RAGAGEP:
        - Section 321.1.1 of the American Society of Mechanical Engineers (ASME) B31.3 (2014) states, "The layout and design of piping and its supporting elements shall be directed toward preventing the following:
            (a) piping stresses in excess of those permitted in this Code
            (b) leakage at joints
            (c) excessive thrusts and moments on connected equipment (such as pumps and turbines)
            (d) excessive stresses in the supporting (or restraining) elements
            (e) resonance with imposed or fluid-induced vibrations
            (f) excessive interference with thermal expansion and contraction in piping which is otherwise adequately flexible
            (g) unintentional disengagement of piping from its supports
            (h) excessive piping sag in piping requiring drainage slope
            (i) excessive distortion or sag of piping (e.g., thermoplastics) subject to creep under conditions of repeated thermal cycling
            (j) excessive heat flow, exposing supporting elements to temperature extremes outside their design limits.
        - Section 27.6.1 of the National Fire Protection Association (NFPA) 30 (2021) states, "Piping systems shall be supported and protected against physical damage, including damage from stresses arising from settlement, vibration, expansion, or contraction. The installation of nonmetallic piping shall be in accordance with the manufacturer's instructions."

- At the time of the inspection, the Inspection Team observed that the methanol and utility piping located on the support bridge near the second level of the formaldehyde absorber, as well as the ammonia piping from the vaporizer to the resin kettles were not adequately labeled to indicate contents, direction of flow, physical state (i.e., liquid or vapor), or pressure level (i.e., high or low). Lack of adequate piping and equipment labeling is inconsistent with the following RAGAGEP:
  - Section 60.5.1.6.2(2) of NFPA 1 (2021) states, "Piping, tubing, valves, fittings, and related components used for hazardous materials shall be in accordance with the following:
    (2) Piping and tubing shall be identified in accordance with ASME A13.1 to indicate the material conveyed."
  - Section 6.1.6.2(2) of NFPA 400 (2022) states, "Piping, tubing, valves, fittings, and related components used for hazardous materials shall be in accordance with the following:
    (2) Piping and tubing shall be identified in accordance with ASME A13.1 to indicate the material conveyed."
  - Section 21.3.1.4.4.1 of NFPA 400 (2022) states, "Except as provided in 21.3.1.4.4.2, piping systems shall be marked in accordance with ASME A13.1, Scheme for the Identification of Piping Systems, or other applicable approved standards as follows:
    1) Marking shall include the name of the gas and a direction-of-flow arrow.
    2) Piping that is used to convey more than one gas at various times shall be marked to provide clear identification and warning of the hazard.
    3) Markings for piping systems shall be provided at the following
    4) Locations:
       a) At each critical process control valve
       b) At wall, floor, or ceiling penetrations
       c) At each change of direction
       d) At a minimum of every 20 ft (6.1 m) or fraction thereof throughout the piping run"
  - Section 3.1 of ASME A13.1 (2015) states, "Positive identification of the contents of a piping system shall be by lettered legend, giving the name of the contents in full or abbreviated form ... Arrows shall be used to indicate direction of flow. Where flow can be in both directions, arrows in both directions shall be displayed. Contents shall be identified by a legend with sufficient additional details such as temperature, pressure, etc., as are necessary to identify the hazard."

- At the time of the inspection, the Inspection Team observed that the resin manufacturing building does not have an ammonia detection system to provide a local audible and visual alarm, as well as a remote notification to a constantly attended control station in the event of a release of ammonia during the resin manufacturing process. Lack of detection and notification of hazardous ammonia levels to the operators and/or manufacturing staff is inconsistent with the following RAGAGEP:
  - Section 21.3.9.6 of NFPA 400 (2022) states, "Except as provided in 21.3.9.6.1, a continuous gas detection system in accordance with 21.3.9.6.2 through 21.3.9.6.6

shall be provided for the indoor storage or use of toxic or highly toxic compressed gases."
    - Section 21.3.9.6.2 of NFPA 400 (2022) states, "The gas detection system shall initiate a local alarm that is both audible and visible."
    - Section 21.3.9.6.3 of NFPA 400 (2022) states, "The gas detection system shall transmit a signal to a constantly attended control station for quantities exceeding one toxic or highly toxic compressed gas cylinder."
    - Section 21.3.9.6.5 of NFPA 400 (2022) states, "Detection shall be provided at the locations specified in 21.3.9.6.5.1 through 21.3.9.6.5.4."
    - Section 21.3.9.6.5.2 of NFPA 400 (2022) states, "Detection shall be provided in the room or area in which the gas is used."
    - Section 21.3.9.6.6 of NFPA 400 (2022) states, "The gas detection system shall detect the presence of gas at or below the permissible exposure limit or ceiling limit of the gas for those points identified in 21.3.9.6.5.2."

- At the time of the inspection, the ammonia pumps were located near the ammonia tank and could only be stopped manually by a switch located adjacent to the pumps or from a remote location outside the control room but inside the resin manufacturing building. Shutoff valves to stop the flow of ammonia from the storage tank were located below the tank and must be closed manually if a leak occurs. Not having a system to automatically stop ammonia pumps and close the ammonia shutoff valves when a detection system indicates ammonia levels have reached an alarm threshold is inconsistent with the following RAGAGEP:
    - Section 21.3.9.6.4.1 of NFPA 400 (2022) states, "Activation of the gas detection system shall automatically shut off the flow of gas related to the system being monitored."

- At the time of the inspection, the Inspection Team observed that the pressure relief valve directly off the ammonia vaporizer, as well as the two pressure relief valves downstream of the vaporizer, discharge below the roof line of the adjacent resin manufacturing building and near an entrance to the resin manufacturing building. The pressure safety valve relief locations are inconsistent with the following RAGAGEP:
    - Section 5.8.13 of the Compressed Gas Association (CGA) G2.1 (2014) states, "The discharge opening from any pressure relief valve shall not terminate inside any building or below the highest roof line of any such building."
    - Section 63.2.15 of NFPA 1 (2021) states, "The termination point for piped vent systems serving cylinders, containers, tanks, and gas systems used for the purpose of operational or emergency venting shall be located to prevent impingement exposure on the system served and to minimize the effects of high temperature thermal radiation or the effects of contact with the gas from the escaping plume to the supply system, personnel, adjacent structures, and ignition sources."
    - Section 21.2.15 of NFPA 400 (2022) states, "The termination point for piped vent systems serving cylinders, containers, tanks, and gas systems used for the purpose of operational or emergency venting shall be located to prevent impingement exposure on the system served and to minimize the effects of high temperature

thermal radiation or the effects of contact with the gas from the escaping plume to the supply system, personnel, adjacent structures, and ignition sources."

- At the time of the inspection, the Inspection Team observed that signage was not readily visible near the ammonia storage area to display emergency information to emergency response personnel. Lack of emergency notification information signage in a readily visible location for emergency response personnel is inconsistent with the following RAGAGEP:
  - Section 6.8 of CGA G2.1 (2014) states, "A legible sign shall be displayed on the premises at which a storage system is located, so as to be readily visible to emergency response personnel, with lettering not less than 2 inches in height. stating the following:
    - phrase "EMERGENCY INFORMATION";
    - name of facility;
    - name or title of at least two responsible persons;
    - area code and telephone number(s) of each person listed; and
    - phrase, "the 911 address is", and the appropriate 911 address."

- At the time of the inspection, the Inspection Team observed that the entrances to the flammable chemical storage building as well as the chemical storage warehouse were not affixed with NFPA Hazard Identification Signs to alert facility staff and emergency responders to the hazards associated with the stored chemicals. Lack of NFPA Hazard Identification Signs at the entrances to areas containing hazardous chemicals is inconsistent with the following RAGAGEP:
  - Section 60.5.1.8.2.1 of NFPA 1 (2021) states, "Visible hazard identification signs in accordance with NFPA 704 shall be placed at the following locations… (3) At entrances to locations where hazardous materials are stored, dispensed, used, or handled in quantities requiring a permit"
  - Section 6.1.8.2.1(3) of NFPA 400 (2022) states, "Visible hazard identification signs in accordance with NFPA 704 shall be placed at the following locations… (3) At entrances to locations where hazardous materials are stored, dispensed, used, or handled in quantities requiring a permit"
  - Section 9.1 of NFPA 704 (2022) states, "One of the systems delineated in Figure 9.1(a), Figure 9.1(b), or Figure 9.1(c) shall be used for the implementation of this standard."

- At the time of the inspection, the Inspection Team observed that four drums of sulfuric acid and four drums of a basic solution (one of the components within the solution was listed as sodium hydroxide) were stored directly next to each other in the chemical warehouse. Acids and bases are incompatible materials and active storage in the same physical location without employing a method to separate them is inconsistent with the following RAGAGEP:
  - Section 6.1.12.1 of NFPA 400 (2022) states, "Incompatible materials in storage and storage of materials incompatible with materials in use shall be separated when the stored materials are in containers having a capacity of more than 5 lb. (2.268 kg) or 1⁄2 gal (1.89 L)."

- Section 6.1.12.2 of NFPA 400 (2022) states, "Separation shall be accomplished by one of the following methods:
  (1) Segregating incompatible materials storage by a distance of not less than 20 ft (6.1 m)
  (2) Isolating incompatible materials storage by a noncombustible partition extending not less than 18 in. (457 mm) above and to the sides of the stored material or by a noncombustible partition that interrupts the line of sight between the incompatible materials
  (3) Storing liquid and solid materials in hazardous materials storage cabinets complying with 6.1.18
  (4) Storing compressed gases in gas cabinets or exhausted enclosures complying with Chapter 21."

3. 40 C.F.R. § 68.67(c)(3) requires the process hazard analysis (PHA) to address engineering and administrative controls applicable to the hazards and their interrelationships such as appropriate application of detection methodologies to provide early warning of releases.

   - The July 2022 Formaldehyde Manufacturing and Storage Process PHA (*Formaldehyde – PHA.pdf*) includes an analysis of the formaldehyde manufacturing process present in the R-1 Formox plant (see Section 10 in the PHA). Node 10.10 includes a high oxygen concentration deviation that can result in high pressure in the R-1 reactor and subsequent blowout of the rupture disks. The safeguards listed under this node include calibration of the oxygen sensor alarm (AIC-1) three times per week. One of the recommendations listed is stated as, "Consider installing an additional oxygen analyzer/redundant oxygen analyzer for AF-1." Although AIC-1 is a critical safeguard to maintain oxygen levels below a preset value and avoid over-pressurization of the formaldehyde reactor, a review of the control system alarm history for the past three (3) months shows the AIC-1 alarm High and High-High was disabled 73 times but no explanation was given for disabling the alarm. Disabling a critical safeguard alarm could lead to a loss of formaldehyde if the rupture disks on the reactor burst. As such, the facility did not appropriately address engineering and administrative controls for the R-1 Reactor in the Formox Plant in the context of its July 2022 PHA revalidation.

4. 40 C.F.R. § 68.67(e) 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; and 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 facility's October 2021 Anhydrous Ammonia System PHA (*Anhydrous Ammonia – PHA.pdf*) includes a list of recommendations, action items, due dates, status, responsibility, and date complete. Recommendation 16 states "Consider ammonia

detection system" and indicates the status was "completed" on December 17, 2021. No further documentation was provided by Arclin regarding why this 2021 PHA recommendation was considered complete when no ammonia detection system was installed. As summarized under AOC 4, Section 21.3.9.6 of NFPA 400 (2016) requires the use of a continuous gas detection system that initiates both audible and visible alarms and that transmits a signal to a constantly attended control station for systems that store and/or use toxics gases such as anhydrous ammonia. As such, the facility did not establish a system to promptly address the PHA team's findings and recommendations, assure that recommendations were resolved in a timely manner and that the resolution is documented, document what actions were to be taken, or complete actions as soon as possible as required for the anhydrous ammonia system.

5. 40 C.F.R. § 68.69(a) requires the owner or operator to develop and implement written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information and shall address at least the elements listed in § 68.69(a). 40 C.F.R. § 68.69(b) requires the operating procedures to be readily accessible to employees who work in or maintain a process.

    - The facility standard operating procedures (SOPs) did not provide clear instruction for safely conducting activities involved in each covered process. Specifically, SOP AND_2935-3.0, K-4A Charge Formaldehyde states in item #2 of the Manual/Charge Modules section to "Partially close the Circulation Valve (for SM-3: 21V425, for SM-4: 21V426, for SM-5: 21V427 or for SM-6: 21V428) at the assigned formaldehyde tank. Note: Close circulation only enough to enable a satisfactory flow to the kettle; do not completely close off circulation." Using terminology such as "partially close" or "satisfactory flow" does not provide clear instructions to operators and can lead to varying interpretations between different operators. SOP AND_2933-3.0 Resin Kettle K-4A Operating Limits also does not include consequences of deviation if operators misinterpreted "partially" closing circulation valves or not providing "satisfactory flow" to the kettle.

6. 40 C.F.R. § 68.73(d)(2) requires inspection and testing procedures to follow recognized and generally accepted good engineering practices.

    - The Arclin facility does not complete non-destructive thickness testing on the methanol and formaldehyde process piping. As such, the facility has not completed inspections and testing for its methanol and formaldehyde piping in accordance with the following RAGAGEP, as required:
        - Section 5.1.2 of American Petroleum Institute (API) 570 (2016) states, "An inspection plan shall be established for all piping systems and/or circuits and associated pressure relieving devices within the scope of this Code. The inspection plan shall be developed by the inspector and/or engineer. A corrosion specialist shall be consulted to identify/clarify potential damage mechanisms and specific locations where degradation may occur, especially where localized corrosion or cracking mechanisms may be involved."

- Section 5.5.4 of API 570 (2016) states, "Thickness measurements are obtained to verify the thickness of piping components. This data is used to calculate the corrosion rates and remaining life of the piping system. Thickness measurements shall be obtained by the inspector or the examiner at the direction of the inspector…. Normally thickness measurements are taken while the piping is on-stream. On-stream thickness monitoring is a good tool for monitoring corrosion and assessing potential damage due to process or operational changes."
- Section 6.3.3 of API 570 (2016) states, "If RBI is not being used, the interval between piping inspections shall be established and maintained by using the following criteria:
    a) the corrosion rate and remaining life calculations;
    b) the piping service classification (see 6.3.4);
    c) the applicable jurisdictional requirements;
    d) and the judgment of the inspector, the piping engineer, the piping engineer supervisor, or a materials specialist, based on operating conditions, previous inspection history, current inspection results, and conditions that may warrant supplemental inspections covered in 5.5.

  The owner/user or the inspector shall establish inspection intervals for thickness measurements and external visual inspections and, where applicable, for internal and supplemental inspections.
  For Class 1, 2, and 3 piping, the period between thickness measurements for CMLs or circuits should not exceed one-half the remaining life or the maximum intervals recommended in Table 1, whichever is less."

Table 1—Recommended Maximum Inspection Intervals

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
Class 4	Optional	Optional
Injection points [a]	3 years	By class
Soil to Air Interfaces [b]	—	By class

NOTE Thickness measurements apply to systems for which CMLs have been established in accordance with 5.6.

[a] Inspection intervals or due dates for potentially corrosive injection can also be established by a valid RBI analysis in accordance with API 580.

[b] See API 574 for more information on SAI interfaces.

- The facility uses a spreadsheet (*Item #15 Tank Integrity Program Schedule.pdf*) to track completed tank inspection dates and upcoming inspection due dates for all tanks. In the tracking spreadsheet, the formaldehyde absorber is listed as using the API 653 (Tank Inspection, Repair, Alteration, and Reconstruction) inspection method

and timing for its inspections. However, it should follow the recommended inspection method and timing of API 510 (Pressure Vessel Inspection Code) as it is considered a pressure vessel. The tracking spreadsheet lists the most recent completion dates for the internal inspection of the formaldehyde absorber as 10/29/2019, external inspection of the formaldehyde absorber as 6/28/2019, and ultrasonic thickness testing of the formaldehyde absorber as 6/28/2019. The tracking spreadsheet lists upcoming due dates for the internal inspection of the formaldehyde absorber as 10/24/2039 (20 years), external inspection of the formaldehyde absorber as 6/26/2024 (5 years), and ultrasonic thickness testing of the formaldehyde absorber as 6/24/2034 (15 years). The scheduled inspection frequency for the formaldehyde absorber is inconsistent with the following RAGAGEP:

- Section 6.4.1 of API 510 (2014) states, "Unless justified by an RBI assessment, each aboveground 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. It is preferred to perform this inspection while the vessel is in operation. The interval is established by the inspector or engineer in accordance with the owner/user's QA system."
- Section 6.5.1 of API 510 (2014) states, "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. 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. The interval is established by the inspector or engineer in accordance with the owner/user's QA system."

Additionally, the inspection due date timing for the formaldehyde absorber listed in the tracking spreadsheet is much later than the recommended future inspection timing listed in the provided June 2019 inspection report for the external inspection and ultrasonic thickness testing of the formaldehyde absorber (*2019 Ext & UT Absorber API 510 Inspection.pdf*) and October 2019 inspection report for the internal inspection of the formaldehyde absorber (*2019 Int Absorber API 510 Inspection.pdf*).

7. 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.

   - The provided spreadsheet (Item #21 Rupture Disk Inspection and Replacement Log.pdf) is used by the facility to document the visual inspection record of the rupture disks at the facility but does not list the results of each visual inspection.
     - Section 7.2.1 of API RP 576 states, "For each pressure-relieving device in service, a complete, permanent record should be kept. The record of each device should

include its specification data, including sizing calculations and a continuously accumulating history of inspection and test results."

- Section 7.2.2 states, "Historical records (service records) showing dates and results of inspections and tests are necessary for the follow-up or control phase of the pressure-relieving device program. They enable periodic reviews to determine whether the planned test intervals for a device are being realized."

Inspection Report,

Prepared by:

JORDAN NOLES Digitally signed by JORDAN NOLES Date: 2023.07.05 14:43:15 -04'00'

Jordan Noles, Inspector
North Air Enforcement Section
U.S. EPA Region 4

Approved by:

JASON DRESSLER Digitally signed by JASON DRESSLER Date: 2023.07.05 18:04:40 -04'00'

Jason Dressler, Section Chief
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U.S. EPA Region 4