

Clean Air Act 112(r), Risk Management Program Inspection Report

Seaonus Refrigerated Services Mobile LLC

Mobile, Alabama

July 21, 2021

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 ammonia refrigeration process at Seaonus Refrigerated Services-Mobile (the facility) located in Mobile, Mobile County, Alabama. EPCRA Tier II submittals from the facility were also obtained during the onsite inspection. The inspection 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. Numerous documents were provided for review off-site. This report will provide background information about the facility and a list of observations.

2.0 Background

The Seaonus Mobile facility provides refrigeration services, stamps product, blasts processed chicken and stores chicken leg quarters and chicken feet in their cold storage warehouse before the products are exported to other countries from the Mobile Port. Products include 100% poultry and the facility provides refrigeration services for major companies that includes Cook Foods, Pilgrim's Pride, Tyson, etc. The facility has one ammonia refrigeration system. The facility started operating as Mobile Refrigerated Services facility in 2003, has been purchased by different companies since opening and was purchased by Enstructure on July 1, 2021. The facility has approximately 14 full time employees and operates 24 hours/day, 7 days/week, 52 weeks/year.

The anhydrous ammonia process used by the facility for its refrigeration is regulated pursuant to Program 3 of the RMP. According to facility records, the facility has one ammonia process, with a design inventory of 10,500 pounds of ammonia. The ammonia refrigeration process at the facility is subject to the RMP requirements of 40 C.F.R. Part 68 and to EPCRA Sections 302, 311 and 312. The background specifics are summarized in Table 1 presented below.

TABLE 1: Inspection Information Summary

Inspection Team

Lead Inspector: Om P. Devkota, EPA

Chetan Gala, EPA

Zachary Goods, Eastern Research Group, (Contractor to EPA)

Date of Facility Visit: July 21, 2021

Facility Identification

Name: Seaonus Refrigerated Services- Mobile
Street Address: 1000 S State Docks Road
City: Mobile County: Mobile State: Alabama Zip: 36602
EPA Facility ID No: 1000 0018 4025

Latitude: 30.704893
Longitude: -088.040480

Name, address and phone of corporate parent company:
Owner/Operator: Seaonus Refrigerated Services
Mailing Address: 10060 Skinner Lake Drive, Third Floor
City: Jacksonville State: Florida Zip: 32246
Phone: (904) 440-1820
Website: <https://www.Seaonus.com/>

Name, title, and email of the person responsible for 40 C.F.R. Part 68 implementation:

Name: Cole Shiver
Title: Operations Manager
Email: cshiver@Seaonus.com

Name and title of emergency contact:

Name: Everette P. Nichols
Title: Maintenance Manager
Day phone: (251) 433-7399
24-hour Phone: (251) 234-7138
Email: Everette.Nichols@seaonus.com

Name and titles of stationary source personnel involved in site inspection (*accompanied site tours, provided documents and explanations*):

Name	Title	Phone	Email
Everette P. Nichols	Maintenance Manager	(251) 234-7138	Everette.Nichols@seaonus.com
Cole Shiver	Operations Manager	(251) 433-7399	cshiver@Seaonus.com

Note: This is not a union facility

Date and Program Levels of Submitted Risk Management Plan

Date of initial submission: September 30, 2003 (Mobile Refrigerated Services facility)
Date of recent submission: July 19, 2018
Process as reported in RMP:
Process: Ammonia Refrigeration
Process ID: 1000088193
Process Chemical ID: 1000110404
Program Level as reported in RMP: 3
NAICS code: 49312 (Refrigerated Warehousing and Storage)

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3.0 Observations

The inspection of the facility evaluated compliance with various sections of the RMP regulations (40 C.F.R. Part 68, Program Level 3), using the inspection checklist included in “Guidance for Conducting Risk Management Program Inspections under Clean Air Act Section 112(r)” and “Ammonia Refrigeration List of Key Safety Measures.” The inspection involved discussions with the facility representatives regarding a myriad of issues related to its ammonia refrigeration processes, the facility’s RMP, a review of paperwork associated with the facility’s most recent Risk Management Plan (RMPlan), and a walkthrough of the facility. Inspection in-brief and out-brief conferences were conducted. Observations from the RMP inspection at the facility are discussed below:

- 40 C.F.R. § 68.36(a) requires the owner or operator to review and update the offsite consequence analysis at least once every five years.
 - During the inspection, EPA inspectors requested the offsite consequence documentation for the facility. The facility representatives provided “RMP*Comp: Results of Consequence Analysis” dated April 11, 2011. The facility did not provide information indicating the offsite consequence analysis had been updated at least every five years.
- 40 C.F.R. § 68.65(d)(2) requires documentation that equipment complies with recognized and generally accepted good engineering practices (RAGAGEP). During the facility walkthrough, EPA inspectors observed the following:
 - Some of the piping, fittings, and ammonia components in the Ammonia Engine Room were rusted and visible surface corrosion was observed. Corrosion, rusting, degradation, and/or vapor barrier damage were present on ammonia piping exterior to the Ammonia Machinery Room at the base of the V1 Thermosyphon Receiver, on piping at the base of the accumulators at the rear of the Ammonia Machinery Room, and on sections of piping located on the roof of the building. International Institute of Ammonia Refrigeration (IIAR) Bulletin 110, Section 6.7.1 indicates, “All uninsulated piping and associated components such as flanges and supports shall be inspected annually for any damage to or deterioration of the piping or its protective finish; and remedial action is taken where necessary. Areas affected by slight corrosion should be cleaned off and appropriately treated before reinstating the protective finish. “Also, Section 53.3.1.1 of National Fire Protection Association (NFPA)- 1 (2012) requires that “Refrigeration systems shall be operated and maintained in a safe and operable condition, free from accumulations of oil, dirt, waste, excessive corrosion, other debris, or leaks, and in accordance with The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)-15 and the mechanical code.”
 - There was inadequate and inconsistent labeling of process piping and equipment throughout the facility. Not all piping was labeled to indicate contents, direction of flow, physical state (i.e., liquid or vapor), or pressure level (i.e., high, or low), particularly on exterior piping nearby the elevated condensers and on the building roof, as well as throughout the Ammonia Machinery Room. Section 5.14.5 of ANSI/IIAR 2 (2014) requires, “All piping mains, headers and branches shall be identified with the following information”:
 1. “AMMONIA.”

2. Physical state of the ammonia.
3. Relative pressure level of ammonia, being low or high as applicable.
4. Pipe service, which shall be permitted to be abbreviated.
5. Direction of flow.

“The marking system shall either be one established by a recognized model code or standard or one described and documented by the facility owner.”

- The entry doors into the Ammonia Machinery Room did not have NFPA diamonds reflecting the degree of health hazard (blue), flammability hazard (red), and reactivity hazard (yellow). Section 6.15.1 of American National Standards Institute (ANSI)/IIAR 2 states that buildings and facilities with refrigeration systems shall be provided with placards in accordance with NFPA 704 and the Mechanical Code. ANSI/IIAR 2, Appendix J.7.1 states that the NFPA 704 ammonia fire diamond for indoor ammonia refrigeration equipment should be 3-3-0 and outdoor entrances be 3-1-0.
- The Ammonia Machinery Room floor was wet and slippery with water. IIAR Bulletin 109 requires the machinery room floor to be clean and free of oil, grease, and water.
- Numerous valves throughout the facility including those on both the ammonia machinery rooms do not contain valve identification tags. ANSI/ASHRAE 15-2016, Section 11.2.2 states systems containing more than 110 pounds (50 kg) of refrigerant shall be provided with durable signs having letters not less than 0.5 inch (12.7 mm) in height designating valves or switches for controlling the refrigerant flow.
- The Emergency Stop (E-Stop) was not labelled. Emergency stop switches are an integral part of a compliant ammonia refrigeration machinery room. ANSI/IIAR 2-2014 6.12.1 requires that, “A clearly identified emergency shut-off switch with a tamper-resistant cover shall be located outside and adjacent to the designated principal machinery room door. The switch shall provide off-only control of refrigerant compressors, refrigerant pumps, and normally closed automatic refrigerant valves located in the machinery room. The function of the switch shall be clearly marked by signage near the controls.”
- Heavy ice build-up was observed on piping at the base of the +18 degF, -25 degF, and -40 degF Accumulators located at the rear of the Ammonia Machinery Room. The ice buildup adds considerable weight on piping and vessel supports that may not be designed to hold this extra weight and may also contribute to corrosion during thermal cycling. Frost was present on the exterior of vessel VRP 2 and the associated piping and level gauge, indicating moisture is present beneath the vapor barrier. Also, the site glass for the level indicator associated with vessel VRP 3 had ice buildup, indicating moisture is present beneath the vapor barrier. ANSI/IIAR-2 requires for insulated vessels, where the insulation system has become compromised as evident by moisture/ice buildup on the exterior of the insulation, that portions of insulation must be removed as necessary to further inspect and analyze the extent of corrosion.
- PVC piping used for condensate drainage and extension cords are bridging pedestrian pathways throughout the Ammonia Machinery Room, presenting a trip hazard and potentially obstructing ready access to ammonia refrigeration equipment in case of emergency. Section 6.3.1 of ANSI/IIAR 2 (2014) states, “Equipment installed in machinery

rooms shall be located in such a manner as to allow egress from any part of the room in the event of an emergency, as required by Section 5.17.7, and to provide clearances required for maintenance, operation, and inspection according to manufacturer's instructions."

- Maintenance materials (e.g., ladders, equipment carts) were staged in the Ammonia Machinery Room, partially obstructing access to ammonia refrigeration equipment in the Ammonia Machinery Room. Section 6.3.1 of ANSI/IIAR 2 (2014) states, "Equipment installed in machinery rooms shall be located in such a manner as to allow egress from any part of the room in the event of an emergency, as required by Section 5.17.7, and to provide clearances required for maintenance, operation, and inspection according to manufacturer's instructions."
- Extension cords were used throughout the Ammonia Machinery Room for what appear to be permanent installations in the Ammonia Machinery Room, specifically for surge protectors equipped on the facility's Compressors. IIAR Bulletin 110 requires before any electrical supply is connected to any part of the electrical control system, the trained start-up technician should witness an insulation test of all cables to ensure that no faults exist or receive an appropriate test certificate. NFPA 1, Section 11.1.7.6 states that extension cords shall not be used as a substitute for permanent wiring in machinery rooms.
- Neither of the egress doors from the Ammonia Machinery Room were equipped with panic hardware to facilitate exit in case of emergency. Section 6.10.2 of ANSI/IIAR 2 (2014) requires, "Machinery room doors shall be self-closing and tight fitting. Doors that are part of the means of egress shall be equipped with panic hardware and shall be side hinged to swing in the direction of egress for occupants leaving the machinery room."
- Pressure Relief Valve (PRV) exhaust headers for all ammonia refrigeration equipment at the facility was ducted to a combined relief point located exterior to the facility, adjacent to the elevated Condenser units. The release point for the combined PRV header discharges at a level at or below the level of the adjacent building roof line. Section 15.5.1.3 of ANSI/IIAR 2 (2014) states, "The discharge termination from pressure relief devices relieving to atmosphere shall not be less than 7.25 ft (2.2 m) above a roof that is occupied solely during service and inspection. Where a higher adjacent roof level is within 20 ft (6.1 m) horizontal distance from the relief discharge, the discharge termination shall not be less than 7.25 ft (2.2 m) above the height of the higher adjacent roof."
- The ammonia sensor reading was not readily accessible. Facility representatives stated that they did not have ready access to ammonia sensor readings for ammonia sensors located inside the Ammonia Machinery Room. The facility uses a third-party contractor to manage its ammonia sensor electronic access, and facility personnel were not aware how to obtain readings (either current or historical) for the facility's Ammonia Machinery Room ammonia sensors. Section 6.13.1 of ANSI/IIAR 2 (2014) states, "Machinery rooms shall be provided with ammonia detection and alarm in accordance with Section 17.2-17.6 and the following features: (1) At least one detector shall be provided in the room or area. (2) The detector shall activate an alarm that reports to a monitored location so that corrective action can be taken at an indicated concentration of 25 ppm or higher." Also, Section 16.1.2 of ANSI/IIAR 2 (2014) states, "Instruments and controls shall be provided to indicate operating parameters of the refrigeration system and equipment and provide the ability to

control manually or automatically the starting, stopping, and operation of the system or equipment. The instruments and controls shall provide notice if the system's critical operating parameters, as determined by the owner or operator, have been exceeded.”

- 40 C.F.R. § 68.67(e) requires the owner or operator shall establish a system to promptly address the team's findings and recommendations; assure that the recommendations are resolved in a timely manner and that the resolution is documented; document what actions are to be taken; complete actions as soon as possible; develop a written schedule of when these actions are to be completed; 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 conducted its most recent Process Hazard Analysis (PHA) revalidation in 2018. Facility personnel reported that they used a third-party contractor to facilitate the 2018 PHA (Golder Associates Inc.). The facility was unable to produce a tracking sheet documenting the findings and recommendations associated with the 2018 PHA revalidation.
- 40 C.F.R. § 68.73(d) requires inspection and testing.
 - (1) Inspections and tests shall be performed on process equipment.
 - (2) Inspection and testing procedures shall follow RAGAGEP.
 - (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.
 - (4) The owner or operator shall 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.
- Seaonus' Mechanical Integrity (MI) Program is documented in an MI Procedure (3219_001.pdf). According to facility personnel, the MI Program is implemented by the Maintenance Manager with support from two technicians, each of whom have gone through additional ammonia refrigeration training through a third-party. The facility reportedly conducts daily rounds and weekly Ammonia Machinery Room checks to observe the ammonia refrigeration system. The MI Procedure document states that more detailed ammonia refrigeration system checks should be conducted annually in accordance with IIAR Bulletin 109 requirements and also every five-years “by a competent refrigeration engineer.”

While onsite, inspectors observed areas of surface corrosion on piping in three places: (1) at the base of the V-1 Thermosyphon Receiver, (2) at the base of the three accumulators located at the rear of the Ammonia Machinery Room, and (3) at various locations on the roof. In follow-up to onsite inspection observations, inspectors requested mechanical integrity inspection and testing reports, including any non-destructive testing (NDT), for the ammonia refrigeration system (and these areas, specifically) to determine whether mechanical integrity inspections and testing were being conducted in accordance with RAGAGEP. The facility provided annual Bulletin 109 ammonia refrigeration system

inspection checklists for the 2018 calendar year (entire system; NDT.pdf) and the 2021 calendar year (compressors, only; 3223_001.pdf). Facility personnel were unable to produce records of the more comprehensive five-year mechanical integrity audits required by the facility's internal MI Procedure and Section 5.4.2 of ANSI/IIAR 6 (2019). The only NDT records provided by the Facility (3224_001.pdf) were an undated set of pipe thickness inspection results at 24 different locations. NDT records for pressure vessels were not included, and a comparison of NDT results versus historical records to assess thickness losses and potential for localized corrosion was not provided.

Based on a review of the documentation provided, inspectors observed the following deficiencies regarding inspections and tests for ammonia refrigeration equipment, as well as records and documentation to support inspections and testing:

1. Records of the most recent five years of annual IIAR Bulletin 109 inspections are not being kept as required by Table 5.3.7 of ANSI/IIAR 6 (2019).
 2. Facility personnel were unaware of when the most recent five-year MI Program inspections required under IIAR Bulletins 109 & 110 had been conducted. Records of the two most current reports were not available as required by Table 5.3.7 of ANSI/IIAR 6 (2019).
 3. U1-A forms for the pressure vessels at the facility indicate that all vessels were originally constructed in either 2002 or 2003 (3213_001.pdf), and facility personnel indicated the facility began operations as a cold storage warehouse in 2003. Therefore, pressure vessels at the facility have been in service for 18 years. Facility personnel were unable to locate historical internal and/or on-stream pressure vessel inspection records for any of its pressure vessels that are part of its ammonia refrigeration system. American Petroleum Institute (API) 510, Section 6.5.1.1 states, "... unless justified by a Risk Based Inspection (RBI) assessment, the period between internal or on-stream inspections shall not exceed one-half the remaining life of the vessel or 10 years, whichever is less."
 4. NDT records for ammonia refrigeration piping (3224_001.pdf) do not include the date of the testing or a description of the inspection / test performed, as required under 40 C.F.R. § 68.73(d)(4). Additionally, API 570 requires that thickness measurements be taken once every five years. If ammonia refrigeration system piping is of the same vintage as the facility's pressure vessels, then additional NDT records beyond the single record provided by the facility would be expected.
- 40 C.F.R. § 68.73(e) requires 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.
 - During the inspection, EPA inspectors observed a persistent ammonia odor throughout the Ammonia Machinery Room, which increased in intensity nearby the Compressors and at the back of the Ammonia Machinery Room at the base of the three Accumulators. Facility

personnel indicated that they believed the odor was resulting from operation of the facility's Auto-Purging system. Presence of a persistent ammonia odor in the Ammonia Machinery Room presents a hazard to facility staff and indicates that the facility did not have a system in place to correct deficiencies in ammonia refrigeration equipment that were outside acceptable limits (e.g., a potential leaking component) before further use or in a timely manner to assure safe operations.

- 40 C.F.R. § 68.79(d) requires 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.
 - During the inspection, inspectors observed that the most recent RMP Compliance Audit was conducted in 2019. The 2019 Compliance Audit report consisted of a Cover Page signed by facility personnel indicating that the compliance audit had been conducted. The 2019 Compliance Audit Cover Page was not accompanied by a corresponding report and did not identify any findings.
- 40 C.F.R. § 68.195(b) requires the owner or operator of a stationary source for which an RMP was submitted to update emergency contact information within one month of any change in the emergency contact information required under §68.160(b)(6).
 - The facility's current RMP plan lists Marc Alain and his contact details as the emergency contact. Prior to conducting the July 2021 RMP inspection, inspectors attempted to contact the facility by using the Emergency Contact information provided in the facility's most recent RMP Submission, which was listed as Marc Alain – Maintenance Manager. During the inspection, the facility representative mentioned that Marc Alain left the company in 2019. The current emergency contact is Everette P. Nichols. The owner or operator did not update the emergency contact information details within one month of personnel change as required.

Inspection Report,

Prepared by:

OM
DEVKOTA

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Om Devkota, Lead Inspector
North Air Enforcement Section
U.S. EPA Region 4

Approved by:

JASON
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Jason Dressler, Chief
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