United States Environmental Protection Agency / Region 4

Risk Management Program Inspection Report

FW Memphis Cold Facility

Memphis, Tennessee
October 26, 2022

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 the FW Memphis Cold Facility located in Memphis, Shelby County, Tennessee. This facility was selected for inspection because it had never been inspected under the RMP. The inspection, which was conducted on October 26, 2022, 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

The FW Memphis Cold Facility is located in Memphis, Tennessee. The facility uses anhydrous ammonia as a refrigerant to store food products for distribution. The process should be regulated as program level 3. As of the writing of this report, the facility has still not registered under RMP. According to facility records, the facility has a maximum of 20,000 pounds of anhydrous ammonia on site. The ammonia refrigeration 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

Lead Inspector: Bethany Terpin, EPA
Inspector: Jordan Noles, EPA
Date of Facility Visit: October 26, 2022

Facility Identification

Name: FW Memphis Cold Facility
Street Address: 1100 East Parkway South
City: Memphis County: Shelby State: Tennessee Zip: 38114
EPA Facility ID No: NA
Dun & Bradstreet (D&B) No: 858577364
Latitude: 35.115680
Longitude: -89.984440

Name, address and phone of corporate parent company:
Owner/Operator: FW Logistics
Mailing Address: 325 West Main Street
City: Belleville State: Illinois Zip: 62220
Phone: NA

Name, title, and email of person responsible for 40 C.F.R. Part 68 implementation:
Name: Mike Cusumano
Title: Vice President of Compliance
Phone: (314) 520-5039
Email: mikec@fwresults.com

Name and title of emergency contact:
Name: N/A
Title: N/A
Day phone: N/A
24-hour Phone: N/A
Email: N/A

Name and titles of stationary source personnel involved in site inspection *(accompanied site tours, provided documents and explanations):*
Name: Mike Cusumano
Title: Vice President of Compliance
Phone: (314) 520-5039
Email: mikec@fwresults.com

Name: Robby Hardwick
Title: PSM Manager
Phone: (901) 652-8516
Email: rhardwick@fwresults.com

Note: This is not a union facility.

Date and Program Levels of Submitted Risk Management Plan

Date of initial submission: N/A
Date of most recent submissions: N/A
Process: Refrigeration System
Process ID: N/A
Program Level as reported in RMP: N/A
NAICS code: 493110 (General Warehousing and Storage)

3.0 Observations

The inspection of the FW Memphis Cold 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 ammonia refrigeration 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 FW Memphis Cold Facility are discussed below:

1. 40 C.F.R. § 68.10(a) requires the owner or operator of a stationary source that has more than a threshold quantity of a regulated substance in a process, as determined under § 68.115, to comply with the requirements of this part no later than the latest of the following dates:
   (1) June 21, 1999;
   (2) Three years after the date on which a regulated substance is first listed under § 68.130;
   (3) The date on which a regulated substance is first present above a threshold quantity in a process; or
   (4) For any revisions to this part, the effective date of the final rule that revises this part.

   - Anhydrous ammonia was first added to the refrigeration system in 2018. At the time of the inspection, the facility had not submitted an RMPlan.

2. 40 C.F.R. § 68.28(a) requires the owner or operator to identify and analyze at least one alternative release scenario for each regulated toxic substance held in a covered process(es) and at least one alternative release scenario to represent all flammable substances held in covered processes.

   - At the time of the inspection, facility representatives could not produce an alternative release scenario as part of the Offsite Consequence Analysis.

3. 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.

   - At the time of the inspection, there were some boxes in the engine room that were not included with the spare parts. Also, there was a pressure washer sitting in between a roll-up door and compressor. Section 6.4 of ANSI/IIAR 2 (2014) states, *"Combustible materials shall not be stored in machinery rooms outside of approved fire-rated storage containers."*

     EXCEPTION: *"This provision shall not apply to spare parts, tools, and incidental materials necessary for the operation and maintenance of the refrigeration system."*

     ANSI/IIAR 9 (2020) Section 7.3.4 states, *"Combustible materials shall not be stored in machinery rooms outside of approved fire-rated storage containers."*

   - At the time of the inspection, there was some ice buildup on piping, valves, sight glasses and vessels. Excessive frost build up can hinder the use of valves and adds weight to the system. The frost buildup in the sight glasses make it impossible to see the ammonia inside.

     ANSI/IIAR 2-2014 section 5.10.1 (Condensation and Frost Control) states, *"Piping and equipment surfaces not intended for heat exchange shall be insulated, treated, or otherwise protected to mitigate condensation and excessive frost buildup where the surface temperature is below the dew point of the surrounding air during normal operation and in an area where condensation and frost could develop and become a hazard to occupants or cause damage to the structure, electrical equipment, or refrigeration system."*

     ANSI/IIAR 6 (2019) section 5.6.8 states, "*Equipment and piping shall be kept free from excessive ice buildup.*

     1. Ice buildup shall not interfere with the operation of emergency shut-off valves.

     2. Ice accumulation shall not be permitted to deflect or bend pipes, displace components, or negatively impact the system's structural integrity."

   - At the time of the inspection, the inspection team observed some insulation on piping in the engine room to be damaged and the pipe underneath was exposed. Missing or damaged insulation on piping may lead to corrosion under insulation (CUI) due to water intrusion, condensation, or frost build-up per ANSI/IIAR 2-2014, Section 5.10.1, which identifies insulation requirements.

   - At the time of the inspection some of the doors connecting the engine room to other areas of the facility were not tight-fitting at the bottom. ANSI/IIAR 9 (2020) Section 7.3.9.2 states, *"Machinery room doors shall be self-closing and tight fitting…"*

- At the time of the inspection, there were no audible or visual alarms present outside of the machinery room doors to alert employees of an ammonia release as required by ASHRAE 15-2013, Section 8.11.2.1, and ANSI/IIAR 2-2014, Section 6.13.1.3.

- At the time of the inspection, the evaporators in the cold storage room had no protection from foreign objects, such as a fork on a forklift, damaging them. ANSI/IIAR 9 (2020) Section 7.2.12.1 states, *"Where ammonia-containing equipment is installed in a location subject to physical damage, guarding or barricading shall be provided."*

- At the time of the inspection, the inspection team observed two electrical boxes open in the engine room. There were exposed wires coming out of each box. Section 110.27(B) of NFPA 70 (2011) states, *"In locations where electrical equipment is likely to be exposed to physical damage, enclosures or guards shall be so arranged and of such strength as to prevent from damage."*

  Section 604.6 of the International Fire Code (IFC; 2018) states, *"Open junction boxes and open-wiring splices shall be prohibited. Approved covers shall be provided for all switch and electrical outlet boxes."*

- At the time of the inspection, the inspection team could not locate an emergency shut-off switch. ANSI/IIAR 9 (2020) Section 7.3.11.1 states, *"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."*

- At the time of the inspection, the inspection team observed oil being drained into an unmarked, ~ 1 gallon container through a clear tube. Section 7.2.5.3 of ANSI/IIAR 9 (2020) states, *"Oil removal shall be accomplished by one or more of the following:*

  1) A rigid-piped oil return or transfer system.

  2) A vessel equipped with a shut-off valve in series with a self-closing shut-off valve.

  *3) *A valve and piping assembly at the drain point where oil is removed from the system. At a minimum, a shut-off valve in series with a self-closing shut-off valve is required."*

4. 40 C.F.R. § 68.67(a) requires the owner or operator to perform an initial process hazard analysis (PHA) on processes covered by this part. The PHA 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 PHAs 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 PHA shall be conducted as soon as possible, but not later than June 21, 1999. PHAs completed to comply with 29 C.F.R. 1910.119(e) are acceptable as initial PHAs. These PHAs shall be updated and revalidated, based on their completion date.

    - At the time of the inspection, the facility had never completed a PHA.

5. 40 C.F.R. § 68.60(a) requires the owner or operator to investigate each incident which resulted in, or could reasonably have resulted in a catastrophic release.

    - The facility had a release of 5,500 pounds of ammonia in February 2022 and did not complete a formal investigation of the incident.

6. 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 following elements.

    (1) Steps for each operating phase:

        (i) Initial startup;

        (ii) Normal operations;

        (iii) Temporary operations;

        (iv) Emergency shutdown including the conditions under which emergency shutdown is required, and the assignment of shutdown responsibility to qualified operators to ensure that emergency shutdown is executed in a safe and timely manner;

        (v) Emergency operations;

        (vi) Normal shutdown; and,

        (vii) Startup following a turnaround, or after an emergency shutdown.

    (2) Operating limits:

(i) Consequences of deviation; and

(ii) Steps required to correct or avoid deviation.

(3) Safety and health considerations:

(i) Properties of, and hazards presented by, the chemicals used in the process;

(ii) Precautions necessary to prevent exposure, including engineering controls, administrative controls, and personal protective equipment;

(iii) Control measures to be taken if physical contact or airborne exposure occurs;

(iv) Quality control for raw materials and control of hazardous chemical inventory levels; and,

(v) Any special or unique hazards.

(4) Safety systems and their functions.

- When asked to see the operating procedures for the ammonia refrigeration process, facility representatives could not produce any such procedures.

7. 40 C.F.R. § 68.73(d)(1) requires the owner operator to perform inspections and to be performed on process equipment.

   - Facility representatives supplied the inspection team with a document labeled "Project Plan for Memphis PSM." The document contains items that need to be completed in regard to the covered process. Item # 36 states, "We need a vibration analysis completed for each compressor done by a third party." This item has an estimated completion date on 3/8/2022 but is not marked as completed. The facility sent an update noting that the vibration analysis was completed on 10/25/22, the day before the EPA's inspection took place.

8. 40 C.F.R. § 68.73(d)(2) requires inspection and testing procedures to follow recognized and generally accepted good engineering practices.

   - At the time of the inspection, the inspection team noticed some pressure relief valves (PRV) with the "Installation Date" tags that had not had the month or year of installation punched out, making it impossible for the inspection team to verify when those PRVs were installed. Facility representatives noted this in an excel worksheet, "Project Plan for Memphis PSM, Item # 7, *"There are tags in the engine room with no punches on them notating the date*." The "assigned to date" for this item is 1/27/2022 with an "Estimated Completion Date" of 2/28/2022 This indicates the facility did know about the deficiency.

ANSI/IIAR 6-2019 section 13.1.1 states, *"All pressure relief valves (PRVs) that relieve to atmosphere shall be recertified or replaced on the 5-year time-based frequency."*

13.1.1.1 states, "*The service life of the PRV shall not exceed 5 years of service after it is installed on the system."*

13.1.1.1.1 states, "*Where the PRV Date Tag was not punched during installation, and PRV records do not indicate the installation date, then the worst-case installation date on the PRV Date Tag is assumed and shall be punched upon inspection."*

9. 40 C.F.R. § 68.93(a) requires the owner or operator to coordinate response needs with local emergency planning and response organizations at least annually, and more frequently if necessary, to address changes: At the stationary source; in the stationary source's emergency response and/or emergency action plan; and/or in the community emergency response plan.

    - At the time of the inspection, the facility could not provide evidence of coordinating response needs annually with local emergency planning and response organizations.

Inspection Report,

Prepared by:

JORDAN NOLES Digitally signed by JORDAN NOLES
Date: 2023.01.04 12:42:58 -05'00'

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

Approved by:

JASON DRESSLER Digitally signed by JASON DRESSLER
Date: 2023.01.04 13:30:37 -05'00'

Jason Dressler, Section Chief
North Air Enforcement Section
U.S. EPA Region 4