

United States Environmental Protection Agency / Region 4

Risk Management Program Inspection Report

Coca-Cola North America

Auburndale, Florida

March 5, 2024

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 Coca-Cola North America (Coca-Cola) facility located in Auburndale, Polk County, Florida. This facility was selected for inspection because it involves ammonia refrigeration and is a priority area for EPA Region 4. The inspection, which was conducted on March 5, 2024, 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 Coca-Cola facility is located in Auburndale, Florida. The facility uses anhydrous ammonia for refrigeration purposes. The refrigeration process, consisting of piping, valves, and equipment, cycles ammonia through various physical states (high pressure liquid, low pressure liquid, low pressure vapor, high pressure vapor, then back to high pressure liquid) in order to provide refrigeration for fruit juice storage. The process is regulated as program level 3. According to facility records, the facility has a maximum of 90,950 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: Jordan Noles, EPA

Inspector: Justin Stark, EPA

Inspector-in-Training: Callie Sotolongo, EPA

Inspector: Mark Briggs, Eastern Research Group (ERG)
Inspector: Liam Prendergast, ERG
Inspector: Grant Harvey, Florida Division of Emergency Management (FDEM)
Inspector: Chris Stevens, FDEM
Inspector: Kevin Hardy, FDEM

Date of Facility Visit: March 5, 2024

Facility Identification

Name: Coca-Cola North America – Auburndale Main Street
Street Address: 705 Main Street
City: Auburndale County: Polk State: Florida Zip: 33823
EPA Facility ID No: 1000 0019 4294
Dun & Bradstreet (D&B) No: 3296175
Latitude: 28.053949
Longitude: -081.786091

Name, address and phone of corporate parent company:

Owner/Operator: Coca-Cola North America
Mailing Address: 1 Coca Cola Plaza NW
City: Atlanta State: Georgia Zip: 30313
Phone: (863) 551-3700

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

Name: Brian Durand
Title: Plant Manager
Phone: (413) 207-1030
Email: bdurand@coca-cola.com

Name and title of emergency contact:

Name: Andres Rivera
Title: SES Manager
Day phone: (727) 385-4504
24-hour Phone: (727) 385-4504
Email: andrivera@coca-cola.com

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

Name: Andres Rivera
Title: SES Manager
Phone: (931) 703-7559
Email: andrivera@coca-cola.com

Name: Brad Mincey
Title: Not given
Phone: (863) 221-7508
Email: bmincey@coca-cola.com

Name: Brian Durand
Title: General Manager
Phone: (413) 207-1030
Email: bdurand@coca-cola.com

Name: Terry Herzos
Title: PSM Coordinator
Phone: (863) 209-0631
Email: therzog@coca-cola.com

Name: Madison Futch
Title: Not given
Phone: Not given
Email: mfutch@coca-cola.com

Name: Bob Wagner
Title: Not given
Phone: Not given
Email: bwagner@coca-cola.com

Note: This is not a union facility.

Date and Program Levels of Submitted Risk Management Plan

Date of initial submission: January 30, 2006
Date of most recent submissions: October 04, 2023
Process: Ammonia Refrigeration
Process ID: 1000133942
Program Level as reported in RMP: 3
NAICS code: 311411 (Frozen Fruit, Juice, and Vegetable Manufacturing)

3.0 Observations

The inspection of the Coca-Cola 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 included an opening conference where EPA inspectors reviewed documents associated with the facility’s Risk Management Plan. The discussion was followed by a tour of the facility’s ammonia refrigeration process areas. An inspection out-brief was conducted where EPA inspectors requested additional documents for review off-site and described their

observations. Observations from the RMP inspection at the Coca-Cola facility are discussed below:

1. 40 C.F.R. § 68.65(c)(1)(iii) requires information concerning the technology of the process to include maximum intended inventory.
 - Comparing the maximum intended inventory documentation provided by Coca-Cola to both the RMP submittal and the Reporting Year 2023 EPCRA Tier II shows the amounts are inconsistent. According to the maximum intended inventory documentation provided by the facility, the facility has 83,754 pounds of anhydrous ammonia in the refrigeration systems. The October 2023 RMP resubmission to EPA and the EPCRA Tier II submittal indicate the total ammonia on site is 90,950 pounds. The RMP – offsite consequence analysis (OCA) documentation indicates the ammonia inventory is 90,850 pounds.
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 signage was not provided to identify the emergency stop (E-Stop) switch and the emergency ventilation activation switch outside ammonia machinery rooms (AMRs) 1 and 2/3. Not providing adequate signage to identify the E-Stop switch and the emergency ventilation activation switch is inconsistent with the following RAGAGEP:
 - Section 6.12.1 of the American National Standards Institute/International Institute of Ammonia Refrigeration (ANSI/IIAR)-2 (2021) states, *“A clearly identified emergency shutoff switch shall be located outside and adjacent to the designated principal machinery room door. The function of the switch shall be clearly marked by signage near the controls.”*
 - Section 6.12.2 of ANSI/IIAR-2 (2021) states, *“A clearly identified control switch for emergency ventilation that is not operated continuously shall be located outside the machinery room and adjacent to the designated principal machinery room door. The function of the switch shall be clearly marked by signage near the controls.”*
 - At the time of the inspection, the inspection team observed piping and instrument diagrams (P&IDs) and instructions for shutting down the system are not posted in AMRs 1 and 2/3. Not providing directions for emergency responders to shut down the refrigeration systems is inconsistent with the following RAGAGEP:
 - Section 7.2.10 of ANSI/IIAR-9 (2020) states, *“It shall be the duty of the person in charge of the premises at which the refrigeration system is installed to provide directions for the emergency shutdown of the system*

at a location that is readily accessible to trained refrigeration system staff and trained emergency responders. Documentation shall include the following per Section 7.2.10.1: instructions with details and steps for shutting down the system in an emergency.”

- Section 5.14.1.1(1) of ANSI/IIAR-2 (2021) states, “*Signage or schematic drawings for each refrigeration system containing more than 22 pounds of ammonia shall be posted at a location that is readily accessible to trained refrigeration staff and trained emergency responders. Schematic drawings or signage shall include the following information: Instructions with details and steps for shutting down the system in an emergency.”*
- Section 5.14.4 of ANSI/IIAR-2 (2021) states, “*Valves listed as emergency shut off valves in the system emergency shutdown procedure shall be clearly and uniquely identified at the valves themselves and in the system schematic drawings.”*
- At the time of the inspection, the inspection team observed pressure relief valves (PRVs) associated with compressors C1, C2, and C3 inside AMR 1 were scheduled for replacement in January 2024 but were still in use in March 2024. The observed condition is inconsistent with the following RAGAGEP:
 - Section 13.1.1 of ANSI/IIAR-6 (2019) states, “*All pressure relief valves that release to the atmosphere shall be recertified or replaced on a 5-year time-based frequency.”*
- At the time of the inspection, the inspection team observed standing pools of water likely originating from condensation and/or residual ice build-up present on the various ammonia refrigeration equipment within AMR 1. The presence of standing water within AMR 1 is inconsistent with the following RAGAGEP:
 - 29 C.F.R. § 1910.141(3)(ii) states, “*The floor of every workroom shall be maintained, so far as practicable, in a dry condition. Where wet processes are used, drainage shall be maintained and false floors, platforms, mats, or other dry standing places shall be provided, where practicable, or appropriate waterproof footwear shall be provided.”*
- At the time of the inspection, areas of localized surface corrosion were observed on ammonia piping, valves, and ammonia refrigeration equipment in AMR 1 and 2/3. Specifically, inspectors noted areas of localized corrosion in the following areas:
 - Chiller #5 located inside of AMR 1;
 - Below oil drum located inside of AMR 1;
 - Ammonia piping contacting a pipe support associated with Ammonia system 2/3 on the roof of the warehouse; and
 - Piping on the roof of AMR 4.

The presence of corrosion on ammonia piping and equipment associated with ammonia refrigeration systems is inconsistent with the following RAGAGEP:

- Section 53.3.1.1 of National Fire Protection Association (NFPA) 1 (2018) states, *“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 ASHRAE 15 and the mechanical code. Ammonia refrigerator systems shall be maintained in accordance with ANSI/IIAR-7, Developing Operating Procedures for Closed-Circuit Ammonia Mechanical Refrigerating Systems.”*
- Section 5.1 of ANSI/IIAR-9 (2020) states, *“All equipment and system components shall be inspected, tested, and maintained in accordance with ANSI/IIAR 6 (2019).”*
- At the time of the inspection, piping inside AMR 1 was observed to be exhibiting excessive vibration requiring additional bracing. The observed condition is inconsistent with the following RAGAGEP:
 - Section 6.2.4 of ANSI/IIAR-2 (2021) states, *“Equipment shall be mounted in a manner that prevents vibration that would result in damage or a hazard being transmitted to the building structure or connected equipment.”*
 - Section 7.2.7.1 of ANSI/IIAR-9 (2020) states, *“Piping, tubing, and equipment shall be supported to prevent excessive vibration and movement.”*
 - Section 8.10.4 of the American National Standards Institute/ American Society of Heating, Refrigerating and Air-Conditioning Engineers) ANSI/ASHRAE 15 (2016) states, *“Refrigerant piping shall be properly isolated and supported to prevent damaging vibration, stress, or corrosion.”*
- At the time of the inspection, the inspection team observed high pressure receiver (HPR) vessel V-30 on the roof of AMR 2/3 was not affixed with NFPA diamonds to denote presence of potential hazards. A lack of NFPA diamonds on ammonia refrigeration equipment is inconsistent with the following RAGAGEP:
 - NFPA 704, Standard System for the Identification of the Hazards of Materials for Emergency Response (2012), Section 9.1 states, *“Symbol Arrangement. 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 the presence of palletized oil drums, next to the compressors within AMR 2/3. The presence of these oil drums within the AMR is inconsistent with the following RAGAGEP:
 - Section 6.4 of ANSI/IIAR-2 (2021) and Section 7.3.4 of ANSI/IIAR-9 (2020) state, *“Combustible materials shall not be stored in machinery rooms outside of approved fire-rated storage containers.”*
 - NFPA 30 (2024), Section 12.3.4 and 12.3.5 states, *“For the purposes of this chapter, protected storage shall mean storage installed after January 1, 1997, that is protected in accordance with Chapter 16. All other storage shall be considered unprotected storage unless an alternate means of protection has been approved by the authority having jurisdiction. (See 16.3.6 and Section 16.9.) Protected and unprotected solid pile and palletized storage shall be provided with aisles that are arranged so that no container, portable tank, or intermediate bulk container is more than 20 ft (6 m) from an aisle.”*
 - Section 6.1.12.1 and 6.1.12.2 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).” and “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.”*
- At the time of the inspection, the inspection team observed the stairway gates to access the ammonia equipment on the roofs of AMR 1 and AMR 2/3 and the security fence surrounding AMR 4 are not equipped with panic hardware. A lack of panic hardware equipped doors to/from the refrigeration equipment on the roofs of AMRs 1 and 2/3 and AMR 4 is inconsistent with the following RAGAGEP:
 - Section 6.2.1.4.6 of NFPA 400 (2019) states, *“Doors serving high hazard contents areas with occupant loads in excess of five shall be permitted to be provided with a latch or lock only if the latch or lock is panic hardware or fire exit hardware complying with 11.2.1.7 of NFPA 5000.”*
 - Section 6.2.1 of ANSI/IIAR-2 (2021) and Section 7.3.9.2 of ANSI/IIAR-9 (2020) state, *“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."

- At the time of the inspection, the inspection team observed that only one egress route was present on the roof of AMR 1, AMR 2/3, and AMR 4. The absence of secondary means of egress off the roof areas having ammonia refrigeration equipment is inconsistent with the following RAGAGEP:
 - Section 6.2.1.4.3 of NFPA 400 (2019) states, *"Not less than two means of egress shall be provided from each building, or portions thereof, required to comply with Section 6.2, unless rooms for spaces do not exceed 200 square feet, have an occupant load not exceeding three persons, and have a travel distance to the room door not exceeding 25 feet."*
 - Section 40.2.4.1.1 of NFPA 101 (2018) states, *"Not less than two means of egress shall be provided from every story or section, and not less than one exit shall be reached without traversing another story."*
- At the time of the inspection, the inspection team observed unsupported and unprotected ammonia piping associated with HPR V-30 and on the roof.
 - Section 13.4.2 of ANSI/IIAR-2 (2021) states, *"Refrigerant piping shall be isolated and supported to prevent damage from vibration, stress, corrosion and physical impact."*
 - Section 7.2.12.1 of ANSI/IIAR-9 (2020) 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 a lack of piping labeling on the roof of AMR 1 associated with the HPR and the ammonia condensers. Not providing adequate labeling of ammonia piping is inconsistent with the following RAGAGEP:
 - Section 5.14.6 of ANSI/IIAR-2 (2021) states, *"Ammonia 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; and 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 or the owner's agent."*
 - Section 7.2.9.4 of ANSI/IIAR-9 (2020) states, *"Ammonia piping mains, headers and branches shall be identified with the following information:*

“AMMONIA”, physical state of the ammonia, relative pressure level of ammonia, pipe service, and direction of flow.”

- Section 5.0 of IIAR Bulletin 114 (2014) states, *“Piping markers shall be located as follows: a. before and after a change in piping direction; when piping terminates at equipment and is within 24” of a marker or when piping changes direction more than once and is within 24” of a marker, it is not necessary to place an additional marker between the directional changing elbows or the termination point at equipment. b. before and after piping penetrations of walls, ceilings and floors, c. on extended horizontal or vertical runs of pipe, with a maximum spacing of 40 feet between markers, in order to provide positive identification, and d. at least once on the piping in every area through which the refrigeration piping passes.”*
- At the time of the inspection, the inspection team observed the air intake into AMR 2/3 was not located near ground level but was instead located at an elevation that is more than two-thirds the height of the total machinery room.
 - Section 6.14.5.2 of ANSI/IIAR-2 (2021) states, *“Makeup air supply locations in the machinery room shall be positioned to prevent short-circuiting of the makeup air directly to the exhaust.”*
 - Section 7.3.14.3(2) of ANSI/IIAR-9 (2020) states, *“Make-up air supply locations in the machinery room shall prevent short circuiting of the make-up air directly to the exhaust.”*
 - Section 8.11.4 of ASHRAE-15 (2016) states, *“The mechanical exhaust inlet(s) shall be located in an area where refrigerant from a leak is likely to concentrate, in consideration of the location of the replacement air path(s), refrigerating machine(s), and the density of the refrigerant relative to air.”*
 - Section 3.3.3.5. of IIAR Bulletin 109 (1997) states, *“The location of intake and exhausts in the machinery room should be arranged to provide good scavenging of ventilation air through the room. This can typically be accomplished by evenly spacing intake louvers low on side walls coupled with ceiling-mounted exhaust fans set back from the intakes. Intake/exhaust arrangements that contribute to short circuiting intake air directly to exhaust need to be avoided. Short circuiting can occur when exhausts are located close to large doors.”*
- At the time of the inspection, the inspection team observed the presence of King Valves within and on the roof of AMR 4 that did not have attached handwheels or otherwise possess the ability to turn the shut off valves by hand. In the case of an emergency, a member of the emergency response team would need to have access to a wrench to isolate the system. The absence of readily operable King Valves

associated with the ammonia refrigeration system located in AMR 4 is inconsistent with the following RAGAGEP:

- Section 5.12.5.2 of ANSI/IIAR-2 (2021) states, *“Serviceable equipment and control valves shall have manual isolation valves. Where multiple pieces of serviceable equipment are readily isolated by a single set of hand isolation valves, the use of a single set of valves meets the intent of this section.”*
 - At the time of the inspection, the inspection team observed a desk blocking the eye wash in the loading dock area. In case of an emergency, the eye wash would not be easily accessible. Blocking the eyewash station is inconsistent with the following RAGAGEP:
 - Section 7.3.7.2 of ANSI/IIAR-9 (2020) states, *“The path of travel within the machinery room to at least one eyewash/safety shower unit shall be unobstructed and shall not include intervening doors.”*
3. 40 C.F.R. § 68.67(c)(2) requires the process hazard analysis (PHA) to address the identification of any previous incident which had a likely potential for catastrophic consequences.
- The PHA does not address previous incidents which had a likely potential for catastrophic consequences. On March 15, 2023, an incident occurred in Engine Room 2/3 that caused the release of 12,961 pounds of liquid/vapor anhydrous ammonia. According to the incident investigation report, “The cause of the release was isolation valve RL-1/V-33 not holding at the time of the attempted tie-in for Project X. The method of verifying isolation was not effective and plant personnel were not present at the time of isolation, after the plant instructed that a qualified refrigeration technician be present to verify that the equipment was safe to work on.”

The root cause of the incident was determined to be, “an incomplete Safe Action Plan that did not include system evaluation coupled with contractor error of not waiting for TCCC SME’s before removing ¼” service valve.”

The recommended corrective action was identified as, “Unitemp removal from premises, SPA and permits needed to be updated to require PSM team. Establish a hazardous works meetings to discuss upcoming non-routine work and shutdowns. Update Safe Plan of Action form to require input from PSM member on work that impacts ammonia systems. Add to Safe Plan of Action form that work in proximity to ammonia system requires PSM team member escort. Access to engine rooms should be limited to PSM team members.”

Although the incident investigation report points to human factors as the cause of the March 2023 release, the September 2023 PHA did not address the release that

had occurred just six months prior. For example, the human factors scenario analysis in the PHA listed as Item 15.02 asks “What if there is inadequate isolation prior to maintenance?” and the Engineering and Administrative (E/A) controls states “Ammonia sensors in mach. room start exhaust fans and send alarm. Contractor safety program. We follow Lockout/Tagout procedure. Emergency Action/Evacuation Plan.” The E/A controls do not mention following the Safe Plan of Action form, which was meant to be revised in follow-up to the March 2023 release or conducting hazardous works meetings to discuss upcoming non-routine maintenance work.

Furthermore, the PHA includes a Risk Ranking of C for inadequate isolation prior to maintenance in Item 15.02. According to the PHA risk analysis, an incident having losses greater than \$100,000 should be a Level 3 consequence which equates to a B Risk Ranking. The investigation report for the March 2023 release which stems from not isolating equipment caused by human error indicates the total incident cost was \$109,069. Therefore, the Risk Ranking for Item 15.02 in the PHA should have been elevated to a B risk ranking and the recommendations should have included the recommendations from the incident investigation report.

As such, the facility does not appear to have an adequate system in place to ensure that the PHAs conducted for the anhydrous ammonia refrigeration system address the identification of any previous incident which had a likely potential for catastrophic consequences, as required.

4. 40 C.F.R. § 68.67(c)(3) requires for existing equipment designed and constructed in accordance with codes, standards, or practices that are no longer in general use, the owner or operator shall determine and document that the equipment is designed, maintained, inspected, tested, and operating in a safe manner.
 - The 2023 PHA lists the Emergency Action/Evacuation Plan as an E/A control for numerous “What If” questions. For example, Item 5.08 in the PHA includes a scenario where an evaporator is hit by a forklift or other motorized vehicle (e.g., airplane) during a maintenance procedure or product moving hard enough to crack a pipe and causing an ammonia leak. The E/A controls listed for this scenario include ammonia detectors, which automatically shut off the evaporators and the facility’s emergency action/evacuation plan. The ammonia detectors shutting off the evaporators is an E/A control, but the emergency action/evacuation plan information included in the Integrated Contingency Plan is not. This document provides information on mitigation of the consequences of a potential release event at the facility, but not on preventing the initiating event. Therefore, the Emergency Action/Evacuation Plan should not be included as E/A controls in the PHA.

Inspection Report,

Noles,
Jordan

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Jordan
Date: 2024.05.08
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Jordan Noles, Inspector
North Air Enforcement Section
U.S. EPA Region 4

Approved by:

JASON
DRESSLER

Digitally signed by JASON
DRESSLER
Date: 2024.05.08
08:45:47 -04'00'

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