

EPA ENFORCEMENT ACCOUNTS RECEIVABLE CONTROL NUMBER FORM FOR ADMINISTRATIVE ACTIONS

This form was originated by Wanda I. Santiago for David Peterson 8/10/17  
Name of Case Attorney Date

in the ORC (RAA) at 918-1113  
Office & Mail Code Phone number

Case Docket Number CAA-01-2017-0011 & EPCRA-01-2017-0012

Site-specific Superfund (SF) Acct. Number \_\_\_\_\_

This is an original debt  This is a modification

Name and address of Person and/or Company/Municipality making the payment:

Demkes Enterprises, Inc.  
37 Waterhill Street  
Lynn, MA 01905

Total Dollar Amount of Receivable \$ 132,183 Due Date: 9/9/17

SEP due? Yes  No  Date Due \_\_\_\_\_

Installment Method (if applicable)

INSTALLMENTS OF:

- 1<sup>ST</sup> \$ \_\_\_\_\_ on \_\_\_\_\_
- 2<sup>nd</sup> \$ \_\_\_\_\_ on \_\_\_\_\_
- 3<sup>rd</sup> \$ \_\_\_\_\_ on \_\_\_\_\_
- 4<sup>th</sup> \$ \_\_\_\_\_ on \_\_\_\_\_
- 5<sup>th</sup> \$ \_\_\_\_\_ on \_\_\_\_\_

For RHC Tracking Purposes:

Copy of Check Received by RHC \_\_\_\_\_ Notice Sent to Finance \_\_\_\_\_

**TO BE FILLED OUT BY LOCAL FINANCIAL MANAGEMENT OFFICE:**

IFMS Accounts Receivable Control Number \_\_\_\_\_

If you have any questions call: \_\_\_\_\_  
in the Financial Management Office Phone Number



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 1 – NEW ENGLAND  
5 Post Office Square, Suite 100 (OES 04-1)  
Boston, MA 02109-3912

OFFICE OF  
ENVIRONMENTAL STEWARDSHIP

David Peterson  
direct: (617) 918-1891

8/10/2017

**BY HAND**

Wanda I. Santiago, Regional Hearing Clerk  
EPA Region 1 – New England  
5 Post Office Square, Suite 100 (ORA 18-1)  
Boston, MA 02109-3912



Re: *In the Matter of Demakes Enterprises, Inc., Docket Nos. CAA-01-2017-0011 & EPCRA-01-2017-0012*

Approved Consent Agreement and Final Order

Dear Ms. Santiago:

Please find enclosed for filing the original and one copy of a Consent Agreement and Final Order (CAFO) resolving the above-referenced enforcement case. Also enclosed is the original and one copy of a certificate of service documenting that, on this date, a copy of the CAFO and this cover letter were mailed to Respondent.

Thank you for your assistance in this matter.

Sincerely,

David Peterson, Senior Enforcement Counsel  
U.S. EPA Region 1

Enclosures

cc: Thomas L. Demakes, President, Demakes Enterprises, Inc.  
Len Wallace, Inspector, EPA Region 1

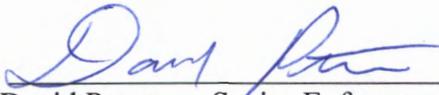
**CERTIFICATE OF SERVICE**

I hereby certify that this Certificate of Service and the foregoing Consent Agreement and Final Order and cover letter to the Regional Hearing Clerk were delivered in the following manner to the addressees listed below:

Originals and One Copy by Hand Delivery to: Wanda I. Santiago  
Regional Hearing Clerk  
Environmental Protection Agency  
5 Post Office Square, Suite 100 (ORA 18-1)  
Boston, MA 02109-3912

One Copy by Certified Mail – Return Receipt Requested to: Thomas L. Demakes, President  
Demakes Enterprises, Inc.  
37 Waterhill Street  
Lynn, MA 01905

Date: 8/10/2017

Signed:   
David Peterson, Senior Enforcement Counsel  
U.S. Environmental Protection Agency  
Region 1 (Mail Code: OES 04-1)  
5 Post Office Square, Suite 100  
Boston, MA 02109-3912  
Phone (617) 918-1891  
[peterson.david@epa.gov](mailto:peterson.david@epa.gov)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

_____	)	
IN THE MATTER OF	)	
	)	
<b>Demakes Enterprises, Inc.</b>	)	<b>CONSENT AGREEMENT</b>
	)	<b>AND FINAL ORDER</b>
37 Waterhill Street	)	
Lynn, MA 01905	)	
	)	Docket Nos. CAA-01-2017-0011 &
Proceeding under Section 113 of the Clean Air	)	EPCRA-01-2017-0012
Act, 42 U.S.C. § 7413, and Section 325(c) of	)	
the Emergency Planning and Community	)	
Right-to-Know Act, 42 U.S.C. § 11045(c)	)	
_____	)	

CONSENT AGREEMENT

**A. PRELIMINARY STATEMENT**

1. This is an administrative penalty assessment proceeding brought under Section 113(d) of the Clean Air Act (“CAA”), 42 U.S.C. § 7413(d); Section 312 of Title III of the Superfund Amendments and Reauthorization Act, 42 U.S.C. §11022 (also known as the Emergency Planning and Community Right-to-Know Act or “EPCRA”); and Sections 22.13 and 22.18 of the Consolidated Rules of Practice Governing the Administrative Assessment of Civil Penalties and the Revocation/Termination or Suspension of Permits (“Consolidated Rules”), as codified at 40 C.F.R. Part 22.

2. Complainant is the United States Environmental Protection Agency, Region 1 (“EPA”). On the EPA’s behalf, the Director of the Office of Environmental Stewardship, EPA Region 1, may settle civil administrative penalty proceedings under Section 113(d) of the CAA and Section 325(c) of EPCRA.

*Consent Agreement and Final Order  
In the Matter of Demakes Enterprises, Inc.  
Docket No. CAA-01-2017-0011 &  
EPCRA-01-2017-0012*

RECEIVED  
AUG 10 2017  
EPA ORC  
Office of Regional Hearing Clerk

3. Respondent is Demakes Enterprises, Inc., a corporation doing business in the Commonwealth of Massachusetts. Respondent's corporate office is at 500 Boston Street, Lynn, Massachusetts. Respondent owns and operates a meat processing, cooking, packaging, and storage facility at 37 Waterhill Street in Lynn, Massachusetts (the "Facility").

4. Complainant and Respondent, having agreed that settlement of this action is in the public interest, consent to the entry of this consent agreement ("Consent Agreement" or "Agreement") and the attached final order ("Final Order" or "Order") without adjudication of any issues of law or fact herein, and Respondent agrees to comply with the terms of this Consent Agreement and Final Order.

5. The Consent Agreement and Final Order resolves Respondent's civil penalty liability for its alleged failure to comply with Section 112(r)(1) of the CAA, the General Duty Clause, 42 U.S.C. § 7412(r)(1), in its handling and storage of anhydrous ammonia at its Facility and with respect to all other conditions described herein. The Consent Agreement and Final Order also resolves Respondent's civil penalty liability for its alleged failure to accurately report ammonia and failure to report sulfuric acid in lead-acid batteries in its 2013 Tier II filing required under Section 312 of EPCRA, 42 U.S.C. § 11022, and implementing regulations at 40 C.F.R. Part 370.

6. Pursuant to Section 113(d)(1) of the CAA; Section 325(c)(1) of EPCRA, 42 U.S.C. § 11045(c)(1); and taking into account the relevant statutory penalty criteria and such matters as justice may require, Complainant has determined that it is fair and proper that Respondent pay a total civil penalty in the amount of one hundred thirty-two

thousand, one hundred eighty-three dollars (**\$132,183**) to resolve the violations alleged in this matter.

## **B. JURISDICTION**

7. This Consent Agreement is entered into under Section 113(d) of the CAA, 42 U.S.C. § 7413(d); Section 325(c) of EPCRA, 42 U.S.C. § 11045(c); and the Consolidated Rules, 40 C.F.R. Part 22.

8. The EPA and the United States Department of Justice jointly determined that this matter is appropriate for an administrative penalty assessment under the CAA. 42 U.S.C. § 7413(d); 40 C.F.R. § 19.4.

9. The Regional Judicial Officer is authorized to ratify this Consent Agreement which memorializes a settlement between Complainant and Respondent. 40 C.F.R. § 22.4(b) and 22.18(b).

10. The issuance of this Consent Agreement and attached Final Order simultaneously commences and concludes this proceeding. 40 C.F.R. § 22.13(b).

## **C. GOVERNING LAW**

### ***Clean Air Act***

11. Pursuant to Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1), owners and operators of stationary sources producing, processing, handling, or storing substances listed pursuant to Section 112(r)(3) of the CAA, 42 U.S.C. § 7412(r)(3), or any other extremely hazardous substance, have a general duty, in the same manner and to the same extent as Section 654 of Title 29,<sup>1</sup> to (a) identify hazards that may result

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<sup>1</sup> Section 654 of OSHA provides, in pertinent part, that “[e]ach employer shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing *Consent Agreement and Final Order In the Matter of Demakes Enterprises, Inc. Docket No. CAA-01-2017-0011 & EPCRA-01-2017-0012*

from accidental releases of such substances, using appropriate hazard assessment techniques; (b) design and maintain a safe facility, taking such steps as are necessary to prevent releases; and (c) minimize the consequences of accidental releases that do occur. This section of the CAA is referred to as the “General Duty Clause.”

12. The extremely hazardous substances listed pursuant to Section 112(r)(3) include, among others, anhydrous ammonia.

13. Sections 113(a) and (d) of the CAA, 42 U.S.C. §§ 7413(a) and (d), as amended by EPA’s 2008 Civil Monetary Penalty Inflation Adjustment Rule, 40 C.F.R. Part 19, promulgated in accordance with the Debt Collection Improvement Act of 1996 (“DCIA”), 31 U.S.C. § 3701, provide for the assessment of civil penalties for violations of Section 112(r) of the CAA, 42 U.S.C. § 7412(r), in amounts up to \$37,500 per day for violations occurring between January 12, 2009 and November 2, 2015. Beginning on August 1, 2016, penalties have further increased for inflation pursuant to the Federal

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or are likely to cause death or serious physical harm to his employees” and “shall comply with occupational safety and health standards promulgated under [OSHA].” 29 U.S.C. § 654. See Durion Company, Inc. v. Secretary of Labor, 750 F.2d 28 (6<sup>th</sup> Cir. 1984). According to the legislative history of the CAA General Duty Clause, Durion is cited as a guide for EPA’s application of the General Duty Clause. Durion criteria are those established earlier in National Realty & Construction Co. v. OSHRC, 489 F.2d 1257 (D.C. Cir. 1973), namely, that OSHA must prove (1) the employer failed to render the workplace free of a hazard; (2) the hazard was recognized either by the cited employer or generally within the employers’ industry; (3) the hazard was causing or was likely to cause death or serious physical harm; and (4) there was a feasible means by which the employer could have eliminated or materially reduced the hazard.

For purposes of complying with the CAA General Duty Clause, owners and operators must maintain a facility that is free of a hazard, the hazard must be recognized by the owner/operator or recognized by the owner/operator’s industry, the hazard from an accidental release must be likely to cause harm, and the owner/operator must be able to eliminate or reduce the hazard. U.S. EPA, *Guidance for Implementation of the General Duty Clause Clean Air Act Section 112(r)(1)* (May 2000) at 11, footnote 4.

Civil Penalties Inflation Adjustment Act of 2015, Section 701 of Public Law 114-74 (Nov. 2, 2015). *See also* 82 Fed. Reg. 3633-3637 (Jan. 2, 2017)

***Emergency Planning and Community Right-to-Know Act***

14. In accordance with Section 312(a) of EPCRA, 42 U.S.C. § 11022(a), owners and operators of facilities that are required to prepare or have available material safety data sheet (“MSDS”) for hazardous chemicals under the Occupational Safety and Health Act (“OSHA”) (“hazardous chemicals” or “hazardous chemicals under OSHA”) must prepare and submit an emergency and hazardous chemical inventory form (“Tier I” or “Tier II” form) to the state emergency response commission (“SERC”), the local emergency planning committee (“LEPC”), and local fire department. Tier I or Tier II forms must be submitted annually on or before March 1 and are required to contain chemical inventory information with respect to the preceding calendar year.

15. The regulations promulgated pursuant to Section 312 of EPCRA, 42 U.S.C. §11022, are found at 40 C.F.R. Part 370.

16. In accordance with Section 312(b) of EPCRA, 42 U.S.C. § 11022(b), 40 C.F.R. § 370.10(a) establishes minimum threshold levels for hazardous chemicals for the purposes of Section 312(a) of EPCRA, 42 U.S.C. § 11022(a) and 40 C.F.R. Part 370.

17. Forty C.F.R. § 370.10(a) requires, in part, compliance with Tier I or Tier II reporting requirements if an Extremely Hazardous Substance (EHS) is present at the facility at any one time in an amount equal to or greater than 500 pounds.

18. Extremely Hazardous Substances listed pursuant to Appendix A of 40

C.F.R. § 355 include, among others, ammonia and sulfuric acid.

19. The Commonwealth of Massachusetts requires facilities subject to EPCRA Section 312 to submit “Tier II” forms containing chemical-specific information, rather than “Tier I” forms containing aggregate information by hazard category. See SERC Policy Position (Updated 12/17/98), currently available at <http://www.mass.gov/eopss/docs/mema/resources/serc/serc-policy-position.pdf>

20. Section 325(c) of EPCRA, 42 U.S.C. § 11045(c), as amended by EPA’s 2008 Civil Monetary Penalty Inflation Adjustment Rule, 40 C.F.R. Part 19, promulgated in accordance with the Debt Collection Improvement Act of 1996 (“DCIA”), 31 U.S.C. § 3701, provides for the assessment of civil penalties for violations of Section 313(a) of EPCRA, 42 U.S.C. § 11023(a), in amounts of up to \$37,500 per day for violations occurring between January 12, 2009 and November 2, 2015. Beginning on August 1, 2016, penalties have further increased for inflation pursuant to the Federal Civil Penalties Inflation Adjustment Act of 2015, Section 701 of Public Law 114-74 (Nov. 2, 2015). *See also* 82 Fed. Reg. 3633-3637 (Jan. 12, 2017).

#### **D. GENERAL ALLEGATIONS**

21. Respondent Demakes Enterprises, Inc. owns and operates a meat processing, cooking, packaging, and storage facility at 37 Waterhill Street in Lynn, Massachusetts (the “Facility”).

22. The Facility is located in a mixed industrial/residential neighborhood. The Facility is within a quarter mile of residences, schools, churches, and a park, and is less than one mile from the state-designated Rumney Marsh Area of Critical Environmental

Concern, the Saugus River, Broad Sound, and the towns of Saugus, Revere, and Nahant.

23. Demakes Enterprises, Inc. is a corporation organized under the laws of the Commonwealth of Massachusetts, with its principal office located in Lynn, Massachusetts.

24. As a corporation, Respondent is a “person” within the meaning of Section 302(e) of the CAA, 42 U.S.C. § 7602(e). Respondent is also a “person” within the meaning of Section 329(7) of EPCRA, 42 U.S.C. § 11049(7), and 40 C.F.R. § 370.66.

25. Respondent’s Facility is a “facility,” as that term is defined by Section 329(4) of EPCRA, 42 U.S.C. § 11049(4), and 40 C.F.R. § 370.66.

26. The Facility is a building or structure from which an accidental release may occur and is therefore a “stationary source,” as defined at Section 112(r)(2)(C) of the CAA, 42 U.S.C. § 7412(r)(2)(C).

27. At all times relevant to the violations alleged herein, Respondent was the “owner or operator” of the Facility, within the meaning of Section 112(a)(9) of the CAA, 42 U.S.C. § 7412(a)(9), and Section 312 of EPCRA, 42 U.S.C. § 11022.

28. Respondent uses anhydrous ammonia in a refrigeration system in a series of interconnected pipes and vessels at the Facility (“Process” or “System”).

29. On July 17, 2014, EPA inspectors visited the Facility (the “Inspection”) to assess Respondent’s compliance with Section 112(r) of the CAA and with Sections 302–312 of EPCRA.

30. Ammonia presents a significant health hazard because it is corrosive to the skin, eyes, and lungs. Exposure to 300 parts per million is immediately dangerous to life

and health. Ammonia is also flammable at concentrations of approximately 16% to 25% by volume in air. It can explode if released in an enclosed space with a source of ignition present, or if a vessel containing anhydrous ammonia is exposed to fire. In light of the potential hazards posed by the mishandling of anhydrous ammonia, industry trade associations have issued standards outlining the recognized and generally accepted good engineering practices (“RAGAGEP”) in the ammonia refrigeration industry. In collaboration with the American National Standards Institute, the International Institute of Ammonia Refrigeration (“IIAR”) has issued (and updates) “Standard 2: Equipment, Design, and Installation of Closed-Circuit Ammonia Mechanical Refrigerating Systems,” along with other applicable standards and guidance. Also in collaboration with the American National Standards Institute, the American Society of Heating, Refrigerating and Air-Conditioning Engineers (“ASHRAE”) has issued (and updates) “Standard 15: Safety Standard for Refrigeration Systems.” These standards are consistently relied upon by refrigeration experts and are sometimes incorporated into state building and mechanical codes.

31. The Process is a “closed-loop” refrigeration system, with components and piping in interconnected areas both inside and outside of the main building. The Process includes: large freezer storage rooms and two ammonia refrigeration engine rooms denoted by Respondent as “West Side” and “East Side.” A refrigeration high pressure receiver for the West Side system is located outside at ground level on the northwest side of the building.

32. During the Inspection and in follow-up communications from Respondent,

EPA requested and received certain documentation pertaining to the Process and to the Facility's Tier II reporting. Documents provided included the Facility's Reporting Year (RY) 2012 Tier II Report; RY 2013 Tier II Report; piping and instrumentation diagrams (P&IDs); a list of the number of fork trucks and forklifts; an inventory of the ammonia in the refrigeration system; the ammonia system hazards analysis, dated 12/19/2013; and an Emergency Action Plan ("EAP").

33. On September 23, 2015, EPA sent a "Notice of Potential Violation of Clean Air Act 112(r) – General Duty Clause and Emergency Planning Community Right-to-Know Act" ("Notice") to Respondent. Respondent provided its response to the Notice on October 26 and November 16, 2015.

34. EPA found that the Inspection and EPA's review of submitted information revealed some potentially dangerous conditions relating to the Process at the time of the Inspection in 2014, including:

- a. That the EAP was missing several items including lists of key emergency response personal and contact information, emergency call numbers for the National Response Center, Local Emergency Planning Committee, 911, and other required local and state emergency response agencies. The EAP was also missing chemical inventory and location information, evacuation and muster points, and specific actions to take in the case of emergency scenarios such as severe weather;
- b. That a significant amount of the refrigeration piping in the facility was not labeled for contents, relative pressure, physical state, and direction of flow;

- c. That none of the main shut-off, or king, valves on the East Side and West Side refrigeration systems were identified with a prominent sign having letters sufficiently large enough to be read;
- d. That the West Side refrigeration system high pressure receiver, visual liquid level indicator, and associated piping were located at ground level in an area accessible by vehicles and were not protected against physical damage;
- e. That none of the doors entering the refrigeration system machinery rooms or any other locations containing significant quantities of ammonia contained National Fire Protection Association (NFPA) placards, ammonia warning signs, or emergency instructions;
- f. That none of the doors entering the East Site or West Side refrigeration rooms contained an audible or visual alarm indicating the presence of ammonia vapors in the room;
- g. That no remote controls were present immediately outside the East Side or West Side refrigeration system machinery room primary entrances for the purpose of shutting down the equipment or starting ventilation fans in an emergency. The controls for the East Side machinery room were located on the first floor, which is up a flight of stairs and through another door. The emergency shutdown switch for the West Side machinery room equipment was in the maintenance shop, but the maintenance shop was not isolated from the machinery room in the event of an ammonia release. The West Side

machinery room ventilation system remote control was located inside the machinery room;

- h. The ammonia detection systems had not been maintained and calibrated per industry standards (i.e. annually or as otherwise recommended by the manufacturer). The Manning Systems GM-4000 ammonia detection system panels for the East Side and West Side refrigeration systems each indicated an ammonia reading on one of the detectors (East Side detector measured 1 ppm and West Side detector measured approximately 8 or 80 ppm). In addition, the West Side detection system panel indicated a “Fault” on Channel 3. Facility representatives believed the panel had a bad board inside. Both of the East Side machinery room gas detectors had a calibration due date of March 2012 on the detector label;
- i. That multiple vessel pressure relief valves (PRVs) on the East Side refrigeration system had not been tested or replaced within five years of installation. The East Side high pressure receiver (HPR) and accumulator pressure vessels had dual PRVs on each vessel. The replacement dates on the tags for the HPR and accumulator were March 2012 and February 2012, respectively;
- j. That a large piece of spare machinery was obstructing the access doorway between the East Side machinery room and the narrow adjacent room housing vacuum pumps and other equipment. The obstruction limited access to refrigeration system components and egress from the machinery room;

- k. That the East Side and West Side machinery rooms were not sealed to prevent the release of ammonia to other locations. The East Side machinery room contained gaps in the walls around air ductwork, piping channels, and electrical conduit and one section of wall was open into the adjoining sprinkler room. The West Side machinery room contained two doorways with no doors present and one door that contains large air gaps;
- l. That the Facility did not have a legible, permanent sign easily accessible in either of the ammonia refrigeration system machinery rooms displaying the following information: a) name and address of the installer, b) the refrigerant number and the amount of refrigerant in the system, c) the lubricant identity and amount, and d) the field test pressure(s) applied;
- m. That all air intake and exhaust ducts for the East Side machinery room were located in or near the ceiling of the room. The air circulation pattern in the room may not have allowed adequate ventilation of lower elevations in the room near the machinery and may have short circuited the air flow;
- n. The West Side machinery room did not contain an air intake that would guarantee fresh air enters the room. Intake air was drawn through the maintenance room, chemical storage room and other interior spaces since the machinery room was not sealed from the rest of the building;
- o. The exhaust fan for the West Side machinery room drew air from the machinery room and surrounding rooms (i.e. chemical storage and maintenance shop) since there were no doors separating the adjoining rooms

- from the machinery room. Thus, the exhaust fan did not serve the machinery room exclusively;
- p. That the PRV on the West Side condenser in operation discharged approximately 5 to 6 feet above the walkway platform on the condenser, which is too low;
  - q. That combustible material, including wooden pallets and cardboard boxes were store in the machinery rooms;
  - r. That Facility contractors were performing hot work without a hot work permit while cutting and grinding on metal piping during the installation of a new condenser on the West Side refrigeration system;
  - s. That the Facility did not implement proper lockout/tagout (LO/TO) procedures during installation of the new West Side refrigeration condenser. The power controller switch did not contain a tag or lock to ensure the power to the condenser could not be energized. In addition, the Facility was not sure if the main breaker was deenergized in the basement electrical room. The contractor performing the work closed isolating valves and marked those valves with pink ribbon. The valves were not identified in any other way as being isolating valves and no LO/TO roster was available;
  - t. That the building contained one windsock affixed to the platform of the West Side refrigeration system. The windsock was not higher than the top of the condenser, was lower than other roof grades of the building and could not be visibly seen from locations around the perimeter of the building. This

presented an exposure hazard to employees, emergency responders, and the public if they were unable to determine the wind direction;

- u. That there was no eye wash or body shower units located in or near either the East Side or the West Side machinery rooms;
- v. That neither the East Side nor the West Side machinery rooms were equipped with self-closing, tight-fitting doors equipped with panic-type hardware;
- w. That an electrical extension cord was lying in a pool of water in the narrow room adjacent to the East Side machinery room and extending under the door into the meat processing room, presenting an electrical hazard; and

35. As of January 31, 2016, Respondent provided information on how it addressed the conditions identified in paragraph 34, above, as follows:

- a. The EAP had been updated with the missing information identified by EPA included;
- b. The subject piping labeling for contents, relative pressure, physical state and direction of flow was underway and this activity continued beyond January 31, 2016 to address all of the requires spaces/rooms throughout the entire facility.
- c. The subject equipment (the main shut-off, or king, valves on the East Side and West Side refrigeration systems) had been marked and painted accordingly;
- d. A new sight glass and protective vessel/tank bollards had been installed to protect the West Side refrigeration system high pressure receiver, visual liquid level indicator, and associated piping;

- e. Deficiencies in door placarding, signage, and emergency instructions had been corrected;
- f. Signage, audible alarms, and visible strobe lights were put in place at both the West and East Side Machine Rooms to warn employees of potentially unsafe ammonia conditions;
- g. Emergency shut down switches had been installed at entrances to both the East and West Side Machine Rooms to power down the machine room equipment in the event of an ammonia incident/release;
- h. A new ammonia monitoring system had been installed for both the West and East Side Machine Rooms. The ammonia sensors and monitoring system will be checked and calibrated according to the manufacturer's recommendations and Respondent's contractor will be performing the required calibrations according to manufacturer recommendations on a quarterly basis;
- i. The subject PRVs had been replaced as needed and a PRV list had been created with dates to monitor future replacement as required by manufacturer recommendations and applicable ammonia IIAR standards;
- j. The subject/noted machinery obstruction had been removed;
- k. All holes and openings had been sealed and doors with push panic bars doors had been installed;
- l. The subject signs had been installed with company name, address, pressure, refrigeration number, amount, and other required information;

- m. Both the air intake and exhaust had been modified and rerouted to provide for better air flow;
- n. A new air intake was installed on West Side machine room and the air intake system on the East Side Machine Room was also improved;
- o. Openings in the West Side Machine Room had been sealed off and a once through in and out air ventilation system had been installed in both machine rooms (e.g., East and West side Machine Rooms);
- p. The noted vent pipe was extended to vent higher above the top of the roof;
- q. The combustible materials had been removed for the noted spaces/locations;
- r. A Hot Work Permit program is now in place. Contractors conducting work at Demakes will either follow Demakes' programs and/or provide their company's programs to Demakes and will confirm that their workers have been trained accordingly on their programs prior to conducting any work at the Facility;
- s. A Lock-Out Tag-Out (LO/TO) program is now in place. Contractors conducting work at Demakes will either follow Demakes' programs and/or provide their company's programs to Demakes and will confirm that their workers have been trained accordingly on their programs prior to conducting any work at the facility;
- t. Four (4) windsocks are in place at the top of the building on the rooftops to provide for line of sight of wind directions;
- u. Eyewash stations and deluge showers had been installed in and/or immediately outside of the East and West Side machinery rooms;

- v. Ventilation systems in both the East Side and West Side machinery rooms were improved and the doors had been replaced to open out. A panic bar door handle had been installed;
- w. Electrical extension cord(s) had been removed; and
- x. Secondary containment units were installed to contain a spill/release and the drain discharges to be maintained within local wastewater discharged limits for disinfectant solutions.

36. EPA identified from the Inspection and EPA's review of submitted Tier II information that Respondent:

- a. Failed to make an applicability determination and did not report sulfuric acid (CAS # 7664-93-9) from lead-acid batteries on their Reporting Year ("RY") 2013 Tier II report. Subsequent information from Respondent documented that there were over 500 pounds of sulfuric acid at the Facility. The threshold reporting quantity for sulfuric acid is 500 pounds;
- b. Under-reported the average and maximum inventory of anhydrous ammonia stored at the Facility in Respondent's RY2013 Tier II report. Respondent reported a maximum quantity of 3,000 pounds in 2013. Subsequent information from Respondent documented that there were at least 6,275 pounds of ammonia at the Facility. The threshold reporting quantity for ammonia is 500 pounds.

37. Accordingly, based on the conditions at the Facility noted in Paragraphs 34 and 36, Complainant alleges the following violations of Section 112(r) of the CAA, 42

U.S.C. § 7412(r) and Section 312 of EPCRA, 42 U.S.C. § 11022, and its implementing regulations at 40 C.F.R. Part 370. Respondent neither admits nor denies the allegations.

38. EPA and the U.S. Department of Justice have jointly determined that the CAA component of this action is an appropriate administrative penalty action under Section 113(d)(1) of the CAA, 42 U.S.C. § 7413(d)(1). No such determination is required for the EPCRA component of this action.

**Count 1:**  
**Failure to Comply with Clean Air Act 112(r)(1) General Duty Clause**  
**Requirements to Design and Maintain a Safe Facility**

39. Complainant realleges and incorporates by reference Paragraphs 1 through 38 of this document.

40. Pursuant to the General Duty Clause, Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1), owners and operators of stationary sources producing, processing, handling, or storing extremely hazardous substances have a general duty – to, in the same manner and to the same extent as Section 654 of Title 29, design and maintain a safe facility, taking such steps as are necessary to prevent releases.

41. The recommended industry practice and standard of care for designing and maintaining a safe facility with an ammonia refrigeration system of the same size and type as Respondent's System is to base design considerations upon applicable design codes, federal and state regulations, and industry guidelines to prevent releases or minimize their impacts as well as to develop and implement standard operating procedures, maintenance programs, personnel training programs, management of change practices, incident investigation procedures, self-audits, and preventative maintenance

programs. IIAR, the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), and others have developed standards and guidelines for this purpose, such as the IIAR Bulletins, American National Standards Institute (ANSI)/IIAR Standard 2, the IIAR Ammonia Refrigeration Management (ARM) Program, and ANSI/ASHRAE Standard 15. *See also* EPA's General Duty Clause Guidance, Section 2.3.2 and National Fire Protection Association 1, Fire Code, Section 53.

42. At all times relevant to the allegations in this CAFO, Respondent failed in its general duty to design and maintain the Facility as a safe facility, taking such steps as were necessary to prevent a release of an extremely hazardous substance, in at least the respects listed in Paragraph 34(b), (c), (d), (e), (f), (g), (h), (i), (j), (l), (m), (n), (o), (r), and (w), above. Attachment 1 provides more information about each listed hazard, such as examples of industry standards of care that address each type of hazard, and an expert-reviewed explanation of how each hazard could result in a harmful release or exacerbate the consequences of a release. The industry standards of care illustrate how the ammonia refrigeration industry has recognized hazards associated with designing and maintaining an ammonia refrigeration system and developed measures to reduce such hazards. Some of the hazards listed in Paragraph 34, above, also have resulted in violations of the General Duty Clause's requirements to minimize harm, as further discussed in Count 2.

43. By failing to comply the CAA Section 112(r) General Duty Clause requirements to design and maintain a safe facility Respondent violated Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1).

**Count 2: Failure to Comply with Clean Air Act 112(r)(1) General Duty Clause Requirements to Minimize the Consequences of Accidental Releases that do Occur**

44. Complainant realleges and incorporates by reference Paragraphs 1 through 43 of this document.

45. Industry standards and guidelines for minimizing the consequence of an accidental release from ammonia refrigeration systems are found, among other things, in the IIAR ARM Program, ANSI/IIAR Standard 2, ANSI/ASHRAE Standard 15, IIAR bulletins, and other materials (including updates and revisions) consistently relied upon by refrigeration experts. They include design and maintenance measures to minimize the severity and duration of releases that do occur, such as, among other things, standards for vapor detection, alarms, equipment and door labeling, emergency shut-off switches, ventilation, keeping combustible materials and electrical hazards away from ammonia, safe oil drain systems, tight construction of machinery rooms; designing safe pressure relief valves and associated piping; reducing obstructions for responders; and having emergency eye wash stations and showers.

46. In addition, EPA's General Duty Clause Guidance (referred to in footnote 1) discusses the standard of care for emergency response planning at facilities that have extremely hazardous substances, such as anhydrous ammonia. The recommended industry practice and standard of care for emergency planning at ammonia refrigeration systems of this size is to *inter alia*, design and implement an emergency response plan that specifically addresses release scenarios developed from hazard analyses and facility-based knowledge; identifies emergency response equipment and its whereabouts, includes

communication with and involvement of emergency planning and response officials (e.g., the Local Emergency Response Planning Committee); incorporates accident training for employees; and involves conducting periodic exercises to ensure that the plan is adequate to address emergency scenarios. EPA's GDC Guidance at 16-18. IIAR, ANSI, ASHRAE, and other organizations have developed standards and guidelines for this purpose, including, among other things, ANSI/IIAR Standard 2, the IIAR ARM Program (2005), and ANSI/ASHRAE Standard 15. For example, Section 7 of IIAR's ARM Program for smaller ammonia refrigeration systems provides that refrigeration facilities should develop an up-to-date, facility specific emergency response plan that accurately describes the facility and the potentially affected population. Such a plan should include, among other items, types of evacuation; evacuation procedures and routes; procedures for employees who remain to maintain critical operations; procedures for accounting for evacuated employees; any employee's rescue and medical duties; and means for reporting emergencies. An adequate emergency response program should also identify procedures for responding to an ammonia release, including shutting the system down; starting emergency ventilation; and coordinating with relevant off-site emergency responders. IIAR's ARM Program, Section 7.

47. At all times relevant to the allegations in this CAFO, Respondent failed in its general duty to minimize the consequences of an accidental release of an extremely hazardous substance at or from the Facility, in accordance with applicable industry standards for systems of this size, as described in Paragraphs 34(a), (b), (c), (e), (f), (g),

(h), (i), (j), (k), (m), (n), (o), (p), (q), (u), (v), and (w) and 36(b), above. Examples of industry standards of care are found in Attachment 1.

48. By failing to comply the CAA Section 112(r) General Duty Clause requirements to minimize harm Respondent violated Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1).

**Count 3: Failure to Adequately Account for Ammonia and Failure to Include Sulfuric Acid on Tier 2 Report for Reporting Year 2013**

49. Complainant realleges and incorporates by reference Paragraphs 1 through 48 of this document.

50. In the Facility's RY2013 Tier II report, Respondent failed to make an applicability determination and did not report sulfuric acid (CAS # 7664-93-9) from lead-acid batteries that exceeded the 500 pound reportable quantity;

51. In the Facility's RY2013 Tier II report, Respondent under-reported the average and maximum inventory of anhydrous ammonia stored at the Facility. Respondent reported a maximum quantity of 3,000 pounds, although subsequent information provided by Respondent documented more than twice that much was actually present.

52. Respondent's failure to adequately account for ammonia and failure to include sulfuric acid on its Tier 2 Report for Reporting Year 2013 was in violation of Section 312 of EPCRA and 40 C.F.R. Part 370.

**E. TERMS OF CONSENT AGREEMENT**

53. For the purpose of this proceeding, as required by 40 C.F.R. § 22.18(b)(2), Respondent:

*Consent Agreement and Final Order  
In the Matter of Demakes Enterprises, Inc.  
Docket No. CAA-01-2017-0011 &  
EPCRA-01-2017-0012*

- a. admits that the EPA has jurisdiction over the subject matter alleged in this Agreement;
  - b. neither admits nor denies the specific factual allegations or alleged violations of law stated above;
  - c. consents to the assessment of a civil penalty as stated below;
  - d. certifies, to the best of its knowledge, that it is in compliance with Section 312 of EPCRA, 42 U.S.C. § 11022, and the regulations promulgated thereunder, found at 40 C.F.R. Part 370;
  - e. certifies, to the best of its knowledge, that it is in compliance with Section 112(r) (1) of the Clean Air Act, General Duty Clause, 42, U.S.C. § 7412(r)(1) and further certifies, to the best of its knowledge, that this compliance includes compliance with the “List of Minimum Safety Measures,” appended to this CAFO as Attachment 2. This list is not intended to be a complete list of important safety measures but rather a subset of easily verifiable items that EPA and the International Institute of Ammonia Refrigeration believe could most help facilities prevent ammonia releases and prepare for any releases that do occur;
  - f. consents to the conditions specified in this Agreement and Order;
  - g. waives any right to contest the alleged violations of law set forth in Section D of this Consent Agreement; and
  - h. waives its rights to appeal the Order accompanying this Agreement.
54. For the purpose of this proceeding, Respondent:

- a. agrees that this Agreement states a claim upon which relief may be granted against Respondent;
- b. acknowledges that this Agreement constitutes an enforcement action for purposes of considering Respondent's compliance history in any subsequent enforcement actions;
- c. waives any and all remedies, claims for relief and otherwise available rights to judicial or administrative review that Respondent may have with respect to any issue of fact or law set forth in this Order, including any right of judicial review under Section 307(b)(1) of the Clean Air Act, 42 U.S.C. § 7607(b)(1);
- d. consents to personal jurisdiction in any action to enforce this Agreement or Order, or both, in the United States District Court for the District of Massachusetts, and
- e. waives any rights it may possess at law or in equity to challenge the authority of the EPA to bring a civil action in a United States District Court to compel compliance with the Agreement or Order, or both, and to seek an additional penalty for such noncompliance, and agrees that federal law shall govern in any such civil action.

55. The provisions of this Agreement shall apply to and be binding upon Respondent and its officers, directors, employees, agents, trustees, servants, authorized representatives, successors, and assigns.

56. By signing this Agreement, Respondent acknowledges that this Agreement and Order will be available to the public and agrees that this Agreement does not contain any confidential business information or personally identifiable information.

57. By signing this Agreement, the undersigned representative of Complainant and the undersigned representative of Respondent each certify that he or she is fully authorized to execute and enter into the terms and conditions of this Agreement and has the legal capacity to bind the party he or she represents to this Agreement.

58. By signing this Agreement, both parties agree that each party's obligations under this Consent Agreement and attached Final Order constitute sufficient consideration for the other party's obligations.

59. By signing this Agreement, Respondent certifies, to the best of its knowledge, that the information it has supplied concerning this matter was at the time of submission true, accurate, and complete for each such submission, response, and statement. Respondent acknowledges that there are significant penalties for submitting false or misleading information, including the possibility of fines and imprisonment for knowing submission of such information, under 18 U.S.C. § 1001.

60. Except as qualified by Paragraph 64, each party shall bear its own attorney's fees, costs, and disbursements incurred in this proceeding.

**Penalty Payment**

61. Pursuant to Sections 113(e) of the CAA, 42 U.S.C. § 7413(e) and Section 325(c)(1) of EPCRA, 42 U.S.C. § 11045(c)(1); and taking into account the relevant statutory penalty criteria, the facts alleged in Section D, described above, Respondent's

cooperation in coming in to compliance and such other circumstances as justice may require, EPA has determined that it is fair and proper to assess a civil penalty of **\$132,183** for the violations alleged in this matter. Of this amount \$117,094 is attributable to the CAA violations and \$15,089 is attributable to the EPCRA violation.

62. Within thirty (30) calendar days of the effective date of this CAFO, Respondent shall make a payment by cashier's or certified check, or by wire transfer, in the amount of \$132,183 and shall include the case name and docket numbers (CAA-01-2017-0011 & EPCRA-01-2017-0012) on the face of the check or wire transfer confirmation. A check should be payable to "Treasurer, United States of America." The payment shall be remitted as follows:

If remitted by regular U.S. mail:

U.S. Environmental Protection Agency  
Fines and Penalties  
Cincinnati Finance Center  
P.O. Box 979077  
St. Louis, MO 63197-9000

If remitted by any overnight commercial carrier:

U.S. Bank  
1005 Convention Plaza  
Mail Station SL-MO-C2GL  
St. Louis, Missouri 63101

If remitted by wire transfer: Any wire transfer must be sent directly to the Federal

Reserve Bank in New York City using the following information:

Federal Reserve Bank of New York  
ABA = 021030004  
Account = 68010727  
SWIFT address = FRNYUS33  
33 Liberty Street

New York, New York 10045  
Field Tag 4200 of the Fedwire message should read:  
"D 68010727 Environmental Protection Agency"

In addition, within 24 hours of payment, Respondent shall forward notice of payment of the civil penalty as well as copies of the payment check or payment receipt by first class mail or other delivery service to:

Wanda I. Santiago, Regional Hearing Clerk  
U.S. Environmental Protection Agency, Region 1  
5 Post Office Square, Suite 100 Mail Code ORA18-1  
Boston, MA 02109-3912

with a copy by electronic mail to:

Leonard Wallace, Environmental Scientist  
U.S. Environmental Protection Agency, Region 1  
[wallace.len@epa.gov](mailto:wallace.len@epa.gov);

and

David Peterson, Senior Enforcement Counsel  
U.S. Environmental Protection Agency, Region 1  
[peterson.david@epa.gov](mailto:peterson.david@epa.gov).

63. **Collection of Unpaid EPCRA Penalty:** Pursuant to 31 U.S.C. § 3717, EPA is entitled to assess interest and penalties on debts owed to the United States and a charge to cover the cost of processing and handling a delinquent claim. In the event that any portion of the civil penalty amount relating to the alleged EPCRA violations is not paid when due, the penalty shall be payable, plus accrued interest, without demand. Interest shall be payable at the rate of the United States Treasury tax and loan rate in accordance with 31 C.F.R. § 901.9(b)(2) and shall accrue from the original date on which the penalty was due to the date of payment. In addition, a penalty charge of six percent per year will be assessed on any portion of the debt which remains delinquent more than

ninety (90) days after payment is due. Should assessment of the penalty charge on the debt be required, it will be assessed as of the first day payment is due under 31 C.F.R. § 901.9(d). In any such collection action, the validity, amount, and appropriateness of the penalty shall not be subject to review.

64. **Collection of Unpaid CAA Civil Penalty:** In the event that any portion of the civil penalty amount relating to the alleged CAA violations is not paid when due without demand, pursuant to Section 113(d)(5) of the CAA, Respondent will be subject to an action to compel payment, plus interest, enforcement expenses, and a nonpayment penalty. Interest will be assessed on the civil penalty if it is not paid when due. In that event, interest will accrue from the due date at the “underpayment rate” established pursuant to 26 U.S.C § 6621(a)(2). In the event that a penalty is not paid when due, an additional charge will be assessed to cover the United States’ enforcement expenses, including attorney’s fees and collection costs. In addition, a quarterly nonpayment penalty will be assessed for each quarter during which the failure to pay the penalty persists. Such nonpayment penalty shall be 10 percent of the aggregate amount of Respondent’s outstanding civil penalties and nonpayment penalties hereunder accrued as of the beginning of such quarter. In any such collection action, the validity, amount, and appropriateness of the penalty shall not be subject to review.

65. All penalties, interest, and other charges shall represent penalties assessed by EPA within the meaning of 26 U.S.C. § 162(f) and are not deductible for purposes of federal, state or local law. Accordingly, Respondent agrees to treat all payments made pursuant to this CAFO as penalties within the meaning of 26 C.F.R. § 1.162-21, and

further agrees not to use these payments in any way as, or in furtherance of, a tax deduction under federal, state, or local law.

#### **F. EFFECT OF CONSENT AGREEMENT AND ATTACHED FINAL ORDER**

66. In accordance with 40 C.F.R. § 22.18(c), completion of the terms of this Consent Agreement and Final Order resolves only Respondent's liability for federal civil penalties for the violations and facts specifically alleged above.

67. Penalties paid pursuant to this Agreement shall not be deductible for purposes of federal taxes.

68. The provisions of this Agreement shall apply to and be binding upon Respondent and its officers, directors, employees, agents, trustees, servants, authorized representatives, successors, and assigns.

69. By signing this Agreement, Respondent acknowledges that this Agreement and Order will be available to the public and agrees that this Agreement does not contain any confidential business information or personally identifiable information.

70. By signing this Agreement, the undersigned representative of Complainant and the undersigned representative of Respondent each certify that he or she is fully authorized to execute and enter into the terms and conditions of this Agreement and has the legal capacity to bind the party he or she represents to this Agreement.

71. This Agreement constitutes the entire agreement and understanding of the parties and supersedes any prior agreements or understandings, whether written or oral, among the parties with respect to the subject matter hereof.

72. The terms, conditions, and compliance requirements of this Agreement may not be modified or amended except upon the written agreement of both parties, and approval of the Regional Judicial Officer.

73. Nothing in this Agreement shall relieve Respondent of the duty to comply with all applicable provisions of the CAA and/or EPCRA and other federal, state, or local laws or statutes, nor shall it restrict the EPA's authority to seek compliance with any applicable laws or regulations, nor shall it be construed to be a ruling on, or determination of, any issue related to any federal, state, or local permit.

74. Nothing herein shall be construed to limit the power of the EPA to undertake any action against Respondent or any person in response to conditions that may present an imminent and substantial endangerment to the public health, welfare, or the environment.

75. This CAFO in no way relieves Respondent or its employees of any criminal liability, and EPA reserves all its other criminal and civil enforcement authorities, including the authority to seek injunctive relief and the authority to undertake any action against Respondent in response to conditions which may present an imminent and substantial endangerment to the public health, welfare, or the environment.

76. Except as provided in Paragraph 64, each party shall bear its own costs and fees in this proceeding including attorney's fees, and specifically waive any right to recover such costs from the other party pursuant to the Equal Access to Justice Act, 5 U.S.C § 504, or other applicable laws.

### **G. EFFECTIVE DATE**

77. Respondent and Complainant agree to issuance of the attached Final Order. Upon filing, the EPA will transmit a copy of the filed Consent Agreement to the Respondent. This Consent Agreement and attached Final Order shall become effective after execution of the Final Order by the Regional Judicial Officer, on the date of filing with the Hearing Clerk.

The foregoing Consent Agreement *In the Matter of Demakes Enterprises, Inc.*, Docket Nos. CAA-01-2017-0011 & EPCRA-01-2017-0012, is hereby Stipulated, Agreed and Approved for Entry.

For Respondent:

Name:   
Title: PRESIDENT

Date: 8/1/17

Respondent's Federal tax identification Number 042549910

The foregoing Consent Agreement *In the Matter of Demakes Enterprises, Inc.*, Docket Nos. CAA-01-2017-0011 & EPCRA-01-2017-0012, is hereby Stipulated, Agreed and Approved for Entry.

For Complainant:

Susan Studien

Susan Studien, Director  
Office of Environmental Stewardship  
U.S. Environmental Protection Agency  
Region 1 – New England

08/08/2017  
Date

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

_____ )	
IN THE MATTER OF )	
Demakes Enterprises, Inc. )	<b>CONSENT AGREEMENT</b>
37 Waterhill Street )	<b>AND FINAL ORDER</b>
Lynn, MA 01905 )	
Proceeding under Section 113 of the Clean Air )	Docket Nos. CAA-01-2017-0011 &
Act, 42 U.S.C. § 7413, and Section 325(c) of )	EPCRA-01-2017-0012
the Emergency Planning and Community )	
Right-to-Know Act, 42 U.S.C. § 11045(c) )	
_____ )	

**FINAL ORDER**

Pursuant to 40 C.F.R. § 22.18(c) of EPA’s Consolidated Rules of Practice and Section 113(d) of the Clean Air Act, 42 U.S.C. § 7413(d), the attached Consent Agreement resolving this matter is incorporated by reference into this Final Order and is hereby ratified.

The Respondent is ORDERED to comply with the terms of the above Consent Agreement, effective immediately.

**So ordered.**

  
 \_\_\_\_\_  
 LeAnn Jensen  
 Acting Regional Judicial Officer  
 U.S. EPA, Region 1

  
 Date:

**Attachment 1**

**Table of General Duty Clause Violations**

EPA inspectors found several dangerous conditions at the Facility, listed in the table below, which gave rise to violations of the General Duty Clause. Many of these conditions indicate that the Facility was not following industry standards of care that are common in the ammonia refrigeration industry.

The chart cites to the versions of the industry standards and guidance in effect at the time of EPA's Inspection in July, 2014.

Par. 34 Sub-Sec.	Dangerous Condition	GDC Violation	How Condition Could Lead to an Accidental Release or Exacerbate Consequences of a Release	Examples of Industry Standards of Care
a.	The Emergency Action Plan (EAP) is missing several items including lists of key emergency response personal and contact information, emergency call number numbers for the National Response Center, Local Emergency Planning Committee, 911, and other required county and state emergency response agencies. The EAP is also missing chemical inventory and location information, evacuation and muster points, and specific actions to take in the case of emergency scenarios such as severe weather.	Failure to minimize the consequences of accidental releases which do occur.	Increases likelihood that a dangerous situation will not be recognized in time to prevent a release. Increases likelihood that any response to such a release will be less efficient and effective because the scenario was unanticipated and the response unplanned. Increased risk to emergency responders and increased potential for off-site impact.	<ul style="list-style-type: none"> <li>• IIAR Ammonia Refrigeration Management (ARM) Program (2005), Section 7</li> <li>• EPA, Guidance for Implementation of the General Duty Clause Clean Air Act Section 112(r)(1) (May 2000)</li> </ul>

Par. 34 Sub-Sec.	Dangerous Condition	GDC Violation	How Condition Could Lead to an Accidental Release or Exacerbate Consequences of a Release	Examples of Industry Standards of Care
b.	A significant amount of the refrigeration piping in the facility was not labeled for contents, relative pressure, physical state, and direction of flow.	<p>Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases.</p> <p>Failure to minimize the consequences of accidental releases which do occur.</p>	Makes it more difficult to: properly maintain system, operate correct valves, warn workers and emergency responders about hazards posed by system, reduce risk of human error in operating the system, and respond quickly in the event of a release.	<ul style="list-style-type: none"> <li>• ANSI/ASHRAE 15 (2013), Section 11.2.2</li> <li>• ANSI/IIAR 2-2008 (Add. B), Section 10.6</li> <li>• IIAR Bulletin No. 109, Section 4.7.6</li> <li>• IIAR Bulletin No. 114</li> </ul>
c.	None of the main shut-off, or king, valves on the East Side and West Side refrigeration systems were identified with a prominent sign having letters sufficiently large enough to be read.	<p>Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases.</p> <p>Failure to minimize the consequences of accidental releases which do occur.</p>	The king valve can be used to quickly shut off flow of ammonia from the ammonia receiver to the rest of the system. Any impediment to its use can lengthen the time of a release, endangering workers, emergency responders, and people off-site.	<ul style="list-style-type: none"> <li>• NFPA 1 (2012), Sections 53.2.4.2</li> <li>• ANSI/ASHRAE 15 (2013), Section 11.2.2.a.</li> <li>• IIAR Bulletin No. 109, Section 4.10.3</li> </ul>

Par. 34 Sub-Sec.	Dangerous Condition	GDC Violation	How Condition Could Lead to an Accidental Release or Exacerbate Consequences of a Release	Examples of Industry Standards of Care
d.	The West Side refrigeration system high pressure receiver, visual liquid level indicator, and associated piping are located at ground level in an area accessible by vehicles and are not protected against physical damage.	Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases.	The West Side refrigeration system high pressure receiver, visual liquid level indicator, and associated piping were located such that they could be inadvertently damaged or struck, risking release of ammonia.	<ul style="list-style-type: none"> <li>• ANSI/ASHRAE 15 (2013) Sections 9.11.2 and 11.1</li> <li>• ANSI/IIAR 2-2008 (Add. B), Section 12.1.1</li> <li>• IIAR Bulletin No. 109, Section 4.6.1 and Section 7 Inspection Checklists</li> </ul>
e.	None of the doors entering the refrigeration system machinery rooms or any other locations containing significant quantities of ammonia contained NFPA placards, ammonia warning signs, or emergency instructions.	<p>Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases.</p> <p>Failure to minimize the consequences of accidental releases which do occur.</p>	Proper signage provides critical information to those who are maintaining a system or responding to a release.	<ul style="list-style-type: none"> <li>• NFPA 1 (2012), Sections 53.2.4.1</li> <li>• ANSI/ASHRAE 15 (2013), Sections 8.11.8, 11.2.4, 11.7</li> <li>• ANSI/IIAR 2-2008 (Add. B), Sections 13.1.2.4, 13.1.10.4, App. L</li> </ul>

Par. 34 Sub- Sec.	Dangerous Condition	GDC Violation	How Condition Could Lead to an Accidental Release or Exacerbate Consequences of a Release	Examples of Industry Standards of Care
f.	None of the doors entering the East Side or West Side refrigeration rooms contain an audible or visual alarm indicating the presence of ammonia in the room.	<p>Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases.</p> <p>Failure to minimize the consequences of accidental releases which do occur.</p>	Alarms provide early warning that a release is taking place, enabling quick response and protecting workers, emergency responders, and the public from a larger release.	<ul style="list-style-type: none"> <li>• NFPA 1 (2012), Section 53.2.3.1.2</li> <li>• ANSI/ASHRAE 15 (2013), Section 8.11.2.1</li> <li>• ANSI/IIAR 2-2008 (Add. B), Section 13.2.1.2</li> </ul>

Par. 34 Sub- Sec.	Dangerous Condition	GDC Violation	How Condition Could Lead to an Accidental Release or Exacerbate Consequences of a Release	Examples of Industry Standards of Care
g.	No remote controls were present immediately outside the East Side or West Side refrigeration system machinery room primary entrances for the purpose of shutting down the equipment or starting ventilation fans in an emergency. The controls for the East Side machinery room are located on the first floor which is up a flight of stairs and through another door. The emergency shutdown switch for the West Side machinery room equipment is in the maintenance shop, but the maintenance shop is not isolated from the machinery room in the event of an ammonia release. The West Side machinery room ventilation system remote control is located inside the machinery room.	<p>Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases.</p> <p>Failure to minimize the consequences of accidental releases which do occur.</p>	Creates risk of harm to workers and emergency responders who cannot quickly shut down or properly ventilate machinery room without entering it, which room could have dangerous levels of vapors. The delay could also contribute to a longer ammonia release time, exacerbating risks to workers, emergency responders, and people off-site.	<ul style="list-style-type: none"> <li>• NFPA 1 (2012), Section 53.2.3.3.1, 53.2.3.4.5</li> <li>• ANSI/ASHRAE-15 (2013), Section 8.12.i.</li> <li>• ANSI/IIAR 2-2008 (Add. B), Sections 13.1.13.2, 13.3.11</li> </ul>

Par. 34 Sub- Sec.	Dangerous Condition	GDC Violation	How Condition Could Lead to an Accidental Release or Exacerbate Consequences of a Release	Examples of Industry Standards of Care
h.	<p>The ammonia detection systems have not been maintained and calibrated per industry standards (i.e., annually).</p> <p>The Manning Systems GM-4000 ammonia detection system panels for the East Side and West Side refrigeration systems each indicated an ammonia reading on one of the detectors (East Side detector measured 1ppm and West Side detector measured approximately 8 or 80ppm). In addition, the West Side detection system panel indicated a "Fault" on Channel 3. Facility representatives believed the panel had a bad board inside.</p> <p>Both of the East Side machinery room gas detectors had a calibration due date of March 2012 on the detector label.</p>	<p>Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases.</p> <p>Failure to minimize the consequences of accidental releases which do occur.</p>	<p>Lack of detector maintenance and calibration can create risk that ammonia releases are not properly detected and managed, which can endanger employees and potentially result in a larger release.</p>	<ul style="list-style-type: none"> <li>• NFPA 1 (2012), Sections 53.3.2.2</li> <li>• ANSI/ASHRAE-15 (2013), Section 11.6.3</li> <li>• ANSI/IIAR 2-2008 (Add. B), Section 13.2.5</li> </ul>

Par. 34 Sub- Sec.	Dangerous Condition	GDC Violation	How Condition Could Lead to an Accidental Release or Exacerbate Consequences of a Release	Examples of Industry Standards of Care
i.	Multiple vessel pressure relief valves (PRVs) on the East Side refrigeration system have not been tested or replaced within five years of installation. The East Side high pressure receiver (HPR) and accumulator pressure vessels had dual PRVs on each vessel. The replacement dates on the tags for HPR and accumulator were March 2012 and February 2012, respectively.	<p>Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases.</p> <p>Failure to minimize the consequences of accidental releases which do occur.</p>	Pressure relief valves should be replaced or recalibrated every five years to ensure that they will function properly. Old pressure relief valves could release ammonia at the normal operating pressure at any time because the spring inside the relief could be weakened due to age.	<ul style="list-style-type: none"> <li>• ANSI/ASHRAE-15 (2013), Sections 10.1.1 and 10.2</li> <li>• IIAR Bulletin 109, Section 4.9.7</li> <li>• IIAR Bulletin 110, Section 6.5.4</li> </ul>
j.	A large piece of spare machinery was obstructing the access doorway between the East Side machinery room and the narrow adjacent room housing vacuum pumps and other equipment. The obstruction limits access to refrigeration system components and egress from the machinery room.	<p>Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases.</p> <p>Failure to minimize the consequences of accidental releases which do occur.</p>	Makes it very difficult to access machinery for proper preventative maintenance, risking an ammonia release from improperly-maintained equipment. Likewise, emergency responders would have a hard time accessing equipment, which could increase the duration of a release.	<ul style="list-style-type: none"> <li>• ANSI/ASHRAE-15 (2013), Sections 8.3, 9.12.1</li> <li>• ANSI/IIAR 2-2008 (Add. B), Section 13.1.2.2</li> </ul>

Par. 34 Sub- Sec.	Dangerous Condition	GDC Violation	How Condition Could Lead to an Accidental Release or Exacerbate Consequences of a Release	Examples of Industry Standards of Care
k.	<p>The East Side and West Side machinery rooms are not sealed to prevent the release of ammonia to other locations.</p> <p>The East Side machinery room contains gaps in the walls around air ductwork, piping channels, and electrical conduit and one section of wall is open into the adjoining sprinkler room.</p> <p>The West Side machinery room contains two doorways with no doors present and one door that contained large air gaps.</p>	<p>Failure to minimize the consequences of accidental releases which do occur.</p>	<p>Allows release of ammonia inside the machinery rooms to spread to other parts of the building, putting employees and responders at risk.</p>	<ul style="list-style-type: none"> <li>• ANSI/ASHRAE-15 (2013), Sections 8.11.2, 8.11.7, and 8.12.b, 8.12.f</li> <li>• ANSI/IIAR 2-2008 (Add. B), Sections 13.1.1.3, 13.1.1.6, 13.1.5.2, 13.1.10.1 and 13.1.10.2</li> </ul>
l.	<p>The facility did not have a legible, permanent sign easily accessible in either of the ammonia refrigeration system machinery rooms displaying the following information:</p> <ol style="list-style-type: none"> <li>a) Name and address of the installer</li> <li>b) The refrigerant number and the amount of refrigerant in the system</li> <li>c) The lubricant identity and amount</li> <li>d) The field test pressure(s) applied</li> </ol>	<p>Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases.</p> <p>Failure to minimize the consequences of accidental releases which do occur.</p>	<p>Information provides critical information to those who are maintaining system and respond to releases.</p>	<ul style="list-style-type: none"> <li>• NFPA 1 (2012), Section 53.2.4.1</li> <li>• ANSI/ASHRAE 15 (2013), Section 11.2.1</li> <li>• IIAR Bulletin No. 109, Section 4.10.4</li> </ul>

Par. 34 Sub- Sec.	Dangerous Condition	GDC Violation	How Condition Could Lead to an Accidental Release or Exacerbate Consequences of a Release	Examples of Industry Standards of Care
m.	All air intake and exhaust ducts for the East Side machinery room are located in or near the ceiling of the room. The air circulation pattern in the room may not allow adequate ventilation of lower elevations in the room near the machinery and may short circuit the air flow.	<p>Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases.</p> <p>Failure to minimize the consequences of accidental releases which do occur.</p>	Without adequate ventilation, vapors are more likely to build up to levels that are significant inhalation and dermal hazards or that risk causing fire or explosion.	<ul style="list-style-type: none"> <li>• ANSI/IIAR 2-2008 (Add. B) Section 13.3.3.2</li> <li>• ANSI/ASHRAE-15 (2013), Section 8.11.4</li> </ul>
n.	The West Side machinery room does not contain an air intake that will guarantee fresh air enters the room. Intake air is drawn through the maintenance room, chemical storage room and other interior spaces since the machinery room is not sealed from the rest of the building.	<p>Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases.</p> <p>Failure to minimize the consequences of accidental releases which do occur.</p>	Without adequate ventilation, vapors are more likely to build up to levels that are significant inhalation and dermal hazards or that risk causing fire or explosion.	<ul style="list-style-type: none"> <li>• ANSI/ASHRAE 15 (2013), Section 8.11.7</li> <li>• ANSI/IIAR 2-2008 (Add. B) Sections 13.1.1.6, 13.3.3</li> </ul>

Par. 34 Sub-Sec.	Dangerous Condition	GDC Violation	How Condition Could Lead to an Accidental Release or Exacerbate Consequences of a Release	Examples of Industry Standards of Care
o.	The exhaust fan for the West Side machinery room draws air from the machinery room and surrounding rooms (i.e., chemical storage and maintenance shop) since there are no doors separating the adjoining rooms from the machinery room. Thus, the exhaust fan does not serve the machinery room exclusively.	<p>Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases.</p> <p>Failure to minimize the consequences of accidental releases which do occur.</p>	Without adequate ventilation, vapors are more likely to build up to levels that are significant inhalation and dermal hazards or that risk causing fire or explosion. Allows release of ammonia inside the machinery room to spread to other parts of the building, putting employees and responders at risk.	<ul style="list-style-type: none"> <li>• ANSI/ASHRAE 15 (2013), Section 8.11.4</li> <li>• ANSI/IIAR 2-2008 (Add. B) Section 13.3.4.3</li> </ul>
p.	The PRVs on the West Side condenser in operation discharged approximately 5 to 6 feet above the walkway platform on the condenser.	Failure to minimize the consequences of accidental releases which do occur.	Improperly placed discharge reliefs can result in ammonia being sprayed on people during a release, further exacerbating the consequences of a release.	<ul style="list-style-type: none"> <li>• ANSI/IIAR 2-2014, Section 15.5.1.3</li> </ul>
q.	Combustible materials including wooden pallets and cardboard boxes were stored in the machinery rooms.	Failure to minimize the consequences of accidental releases which do occur.	Exacerbates risk of fire or explosion. Ammonia is flammable at certain concentrations.	<ul style="list-style-type: none"> <li>• ANSI/IIAR 2-2008 (Add. B), Section 13.1.3.1</li> <li>• NFPA 1 (2012), Section 53.3.1.3.1</li> </ul>

Par. 34 Sub-Sec.	Dangerous Condition	GDC Violation	How Condition Could Lead to an Accidental Release or Exacerbate Consequences of a Release	Examples of Industry Standards of Care
r.	Facility contractors were performing hot work without a hot work permit while cutting and grinding on metal piping during the installation of a new condenser on the West Side refrigeration system.	Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases.	Improper procedures for conducting hot work exacerbates risk of fire or explosion. Ammonia is flammable at certain concentrations.	<ul style="list-style-type: none"> <li>• 527 Code of Massachusetts Regulations (CMR) 39.00</li> <li>• 29 C.F.R. 1910.252</li> <li>• NFPA 1 (2012), Section 1.12</li> <li>• IIAR Bulletin No. 110, Section 5.2.2</li> </ul>
u.	There were no eye wash or body shower units located in or near either the East Side or the West Side machinery rooms.	Failure to minimize the consequences of accidental releases which do occur.	Lack of eye wash or body shower units poses a risk to workers and emergency responders in the event of an ammonia release.	<ul style="list-style-type: none"> <li>• ANSI/IIAR 2-2008 (Add. B), Section 13.1.6</li> <li>• IIAR Bulletin No. 109, Section 4.10.10</li> </ul>
v.	Neither the East Side nor the West Side machinery room has a door self-closing, tight-fitting doors equipped with panic-type hardware.	Failure to minimize the consequences of accidental releases which do occur.	In the event of an ammonia release inside either of the machinery rooms, the failure to have a tight-fitting and self-closing door risks the spread of ammonia vapors outside the room.	<ul style="list-style-type: none"> <li>• ANSI/IIAR 2-2008 (Add. B), Section 13.1.10.3</li> <li>• ANSI/ASHRAE-15 (2013), Section 8.12.d.</li> </ul>

Par. 34 Sub-Sec.	Dangerous Condition	GDC Violation	How Condition Could Lead to an Accidental Release or Exacerbate Consequences of a Release	Examples of Industry Standards of Care
w.	An electrical extension cord was lying in a pool of water in the narrow room adjacent to the East Side machinery room and extending under the door into the meat processing room, presenting an electrical hazard.	<p>Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases.</p> <p>Failure to minimize the consequences of accidental releases which do occur.</p>	Exacerbates risk of electrocution, fire or explosion. Ammonia is flammable at certain concentrations.	<ul style="list-style-type: none"> <li>NFPA 1 (2012), Section 11.1.7</li> </ul>

GDC – General Duty Clause, CAA § 112(r)(1)

RAGAGEP - Recognized and Generally Accepted Good Engineering Practice

## ATTACHMENT 2

### LIST OF MINIMUM SAFETY MEASURES

#### *Identifying Hazards*

- Hazard Addressed: Releases or safety deficiencies that stem from a failure to identify hazards in design/operation of system
  - Facility has completed a process hazard analysis or review.
  - For systems that employ hot gas defrost, the process hazard analysis/review includes an analysis of, and identifies, the engineering and administrative controls for the hazards associated with the potential of vapor propelled liquid slugs and condensation-induced hydraulic shock events.

#### *Operating Activities:*

- Hazard Addressed: High risk of release from operating or maintenance activity
  - System has self-closing/quick closing valves on oil pots.
  - Facility has written procedures for maintenance and operation activities.
  - Only authorized persons have access to machinery room and the ability to alter safety settings on equipment.
  - Written procedures are in place for proper use and care of personal protective equipment.
  - If respirators are used, facilities know the location of their respirators, and they are inspected and maintained per manufacturer or industry standards.
  - All changes to automation systems (programmable logic controls and/or supervisory control and data acquisition systems) if present, are subject to management of change procedures.

#### *Maintenance/Mechanical Integrity:*

- Hazard Addressed: Leaks/releases from maintenance neglect
  - A preventative maintenance program is in place to, among other things, detect and control corrosion, deteriorated vapor barriers, ice buildup, and pipe hammering, and to inspect integrity of equipment/pipe supports.
  - All piping system openings except the relief header are plugged or capped, or valve is locked.
  - Equipment, piping, and emergency shutdown valves are labeled for easy identification, and pressure vessels have legible, accessible nameplates.
  - All atmospheric pressure relief valves have been replaced in the last five years with visible confirmation of accessible pressure relief valves [note – replacement every five years is the general rule but there are two other options in IIAR Bulletin 110, 6.6.3].

### *Machinery Room and System Design*

- Hazard Addressed: Inability to isolate and properly vent releases
  - The System(s) has/have emergency shut-off and ventilation switches outside each machinery room.
  - The machinery room(s) has/have functional, tested, ventilation. Air inlets are positioned to avoid recirculation of exhaust air and ensure sufficient inlet air to replace exhausted air.
- Hazard Addressed: Releases from backpressure and overpressure
  - Documentation exists to show that pressure relief valves that have a common discharge header have adequately sized piping to prevent excessive backpressure on relief valves, or if built prior to 2000, have adequate diameter based on the sum of the relief valve cross sectional areas.
  - The facility has engineering controls in place to protect equipment and piping against overpressure due to hydrostatic expansion of trapped liquid refrigerant. Administrative controls are acceptable where hydrostatic overpressure can occur only during maintenance operations.

### *Emergency Actions*

- Hazard Addressed: Inability to regain control and reduce release impact
  - Critical shutoff valves are accessible, and a schematic is in place to show responders where to access them.
  - Eyewash station(s) and safety shower(s) is/are present and functional.
  - Emergency response communication has occurred or has been attempted with the Local Emergency Planning Committee and local responders.
  - The facility has an emergency action or response plan.
  - EPCRA Tier II reporting is up to date.