**EPA ENFORCEMENT ACCOUNTS RECEIVABLE CONTROL NUMBER FORM FOR ADMINISTRATIVE ACTIONS**

This form was originated by Wanda I. Santiago for Catherine S. Smith (Name of Case Attorney) 3/22/16 (Date)

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

Case Docket Number CAA-01-2016-0014, EPCRA-01-2016-0015 and CERCLA-01-2016-0016

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:

Swan Valley Cheese of VT, LLC
and Jonergin Realty, LLC
11 Jonergin Drive
Swanton, VT 05488

Total Dollar Amount of Receivable $ 7,000 + 93,000 = 100,000 Due Date: _____

SEP due? Yes _____ No _____ Date Due 4/15/16

Installment Method (if applicable)

INSTALLMENTS OF:

1ST $ _____ on _____

2nd $ _____ on _____

3rd $ _____ on _____

4th $ _____ on _____

5th $ _____ 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 I
FIVE POST OFFICE SQUARE SUITE 100
BOSTON, MASSACHUSETTS 02109-3912



**BY HAND**

March 9, 2016

H. Curtis Spalding
Regional Administrator
U.S. EPA, Region I
5 Post Office Square, Suite 100
Boston, MA 02109-3912

Re: In the Matter of Swan Valley Cheese of Vermont LLC and Jonergin Realty LLC, EPA Docket Numbers: CAA-01-2016-0014, CERCLA-01-2016-0016, and EPCRA-01-2016-0015

Dear Mr. Spalding:

In accordance with 40 C.F.R. §§ 22.13(b) and 18(b)(2), enclosed please find a Consent Agreement and Final Order ("CAFO") settling the above-captioned action. The Consent Agreement has been signed by the parties and is now being submitted to you for approval.

The settlement resolves alleged violations of the General Duty Clause of Section 112(r) of the Clean Air Act ("CAA"), Section 312 of the Emergency Planning and Community Right-to-Know Act ("EPCRA"), and Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"). The alleged violations stem from a February 2015 release of ammonia that occurred at Respondent's cheese making facility in Swanton, Vermont.

The settlement requires payment of a civil penalty of $100,000, which reflects a review of the companies' ability to pay.

A separate administrative compliance order on consent ("AOC"), dated August 12, 2015, required the companies to come into compliance with the General Duty Clause. The companies did so by removing the ammonia from the facility's refrigeration system and purchasing a newer, safer system. That AOC was issued by the Director of the Office of Environmental Stewardship pursuant to Section 113(a)(3) of the CAA, 42 U.S.C. § 7413(a)(3).

This settlement is consistent with (1) the statutory penalty factors listed in Section 113(e) of the CAA, 42 U.S.C. § 7413(e), and Section 109(a) of CERCLA, 42 U.S.C. § 9609(a); (2) the "Combined Enforcement Policy for Clean Air Act Section 112(r)(1), 112(r)(7), and 40 C.F.R. Part 68" (June 2012); and (3) the "Enforcement Response Policy for Sections 304, 311 and 312 of the Emergency Planning and Community Right-to-Know Act and Section 103 of the Comprehensive Environmental Response, Compensation and Liability Act" (September 1999).

Once the Final Order has been signed, I will file the fully executed Consent Agreement and Final Order with the Regional Hearing Clerk, thereby resolving this matter. If you have any questions about this matter, please e-mail me at smith.catherine@epa.gov, copying John Leszczak, signed the CAFO on behalf of Respondents. His e-mail address is jleszczak@lotitofoods.com.

Respectfully submitted on behalf of the case team,

Catherine Smith
Senior Enforcement Counsel
EPA Region 1

Enclosure

cc: John Leszczak
Christopher Lotito
Steve Bartlett
Len Wallace

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
5 Post Office Square, Suite 100
Boston, Massachusetts 02109-3912

**BY HAND**



March 15, 2016

Ms. Wanda Santiago
Regional Hearing Clerk
U.S. Environmental Protection Agency - Region I
5 Post Office Square, Suite 100
Mail Code: ORA 18-1
Boston, MA 02109-3912

Re: In the Matter of Swan Valley Cheese of Vermont LLC and Jonergin Realty LLC.
EPA Docket Numbers: EPA Docket Numbers: CAA-01-2016-0014, CERCLA-01-2016-0016, and EPCRA-01-2016-0015

Dear Ms. Santiago:

Please file the enclosed Consent Agreement and Final Order ("CAFO") in the above-captioned matter. I have also enclosed a Certificate of Service, an extra copy of the CAFO, and a copy of the letter to the Regional Administrator (who signed the Final Order instead of the Regional Judicial Officer). Thank you for your assistance in this matter.

Sincerely,

Catherine Smith
Senior Enforcement Counsel

Enclosures

cc: John Leszczak
Christopher Lotito
Steve Bartlett
Len Wallace

In Re: Swan Valley Cheese of Vermont LLC and Jonergin Realty LLC
EPA Docket Numbers: CAA-01-2016-0014, CERCLA-01-2016-0016, and EPCRA-01-2016-0015

CERTIFICATE OF SERVICE

I hereby certify that the foregoing Consent Agreement and Final Order ("CAFO") has been sent to the following persons on the date noted below:

Original and one copy, hand-delivered:

Wanda Santiago
Regional Hearing Clerk
U.S. EPA, Region 1
5 Post Office Square
Suite 100 (ORA18-1)
Boston, MA 02109-3912

One copy of CAFO by certified mail

John Leszczak
Chief Operating Officer, Swan Valley Cheese of Vermont LLC and Jonergin Realty LLC
c/o Lotito Foods, Inc.
240 Carter Drive
Edison, NJ 08817

Christopher Lotito
Manager, Swan Valley Cheese of Vermont LLC and Jonergin Realty LLC
240 Carter Drive
Edison, NJ 08817

Steve Bartlett
Plant Manager
Swan Valley Cheese of Vermont LLC
11 Jonergin Drive
Swanton, VT 05488

Dated: March 15, 2016

Catherine S. Smith
Senior Enforcement Counsel
U.S. EPA, Region 1
5 Post Office Square
Suite 100 (OES04-4)
Boston, MA 02109-3912
Tel: (617) 918-1777
Email: smith.catherine@epa.gov

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**REGION 1**

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| In the Matter of<br><br>Swan Valley Cheese of Vermont, LLC and Jonergin Realty, LLC<br><br>11 Jonergin Drive<br>Swanton, VT 05488<br><br>Respondents.<br><br>Proceeding under Section 113(d) of the Clean Air Act, 42 U.S.C. § 7413(d), Section 109(b) of the Comprehensive Environmental Response, Response, Compensation, and Liability Act, 42 U.S.C. § 9609(b), and Section 325(c) of the Emergency Planning and Community Right-to-Know Act, 42 U.S.C. § 11045(c) | Docket Nos.:<br>CAA-01-2016-0014<br>CERCLA-01-2016-0016<br>EPCRA-01-2016-0015 |

## CONSENT AGREEMENT AND FINAL ORDER

1. The United States Environmental Protection Agency Region 1 ("EPA" or "Complainant") and Swan Valley Cheese of Vermont, LLC ("Swan Valley") and Jonergin Realty, LLC ("Jonergin") (collectively, "Respondents") consent to the entry of this Consent Agreement and Final Order ("CAFO") pursuant to 40 C.F.R. § 22.13(b) of the Consolidated Rules of Practice Governing the Administrative Assessment of Civil Penalties and the Revocation/Suspension of Permits, 40 C.F.R. Part 22 ("Consolidated Rules of Practice"). This CAFO resolves Respondents' liability for alleged violations of Section 112(r)(1) of the Clean Air Act ("CAA" or the "Act"), 42 U.S.C. § 7412(r)(1), Section 103(a) of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. § 9603(a), and Section 312 of Title III of the Superfund Amendments and Reauthorization Act, also known

as the Emergency Planning and Community Right-to-Know Act of 1986 ("EPCRA"), 42 U.S.C. § 11022.

2. EPA and Respondents hereby agree to settle this matter through this CAFO without the filing of an administrative complaint, as authorized under 40 C.F.R. §§ 22.13(b) and 22.18(b).

3. EPA and Respondents agree that settlement of this matter is in the public interest, and that entry of this CAFO without further litigation is the most appropriate means of resolving this matter.

4. Therefore, before taking any testimony, upon the pleadings, without adjudication or admission of any issue of fact or law, it is hereby ordered as follows:

## I. PRELIMINARY STATEMENT

5. This CAFO both initiates and resolves an administrative action for the assessment of monetary penalties, pursuant to Section 113(d) of the CAA, 42 U.S.C. § 7413(d), Section 109(b) of CERCLA, 42 U.S.C. § 9609(b), and Section 325(c) of EPCRA, 42 U.S.C. § 11045(c). As more thoroughly discussed in Sections III and paragraph 114 below, the CAFO resolves the following CAA, CERCLA, and EPCRA violations that Complainant alleges occurred in conjunction with Respondents' storage and handling of anhydrous ammonia at its cheese-making facility in Swanton, Vermont:

a. failure to identify hazards which may result from accidental releases of extremely hazardous substances, in violation of the General Duty Clause, Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1);

b. failure to design and maintain a safe facility, taking such steps as are necessary to prevent such releases, in violation of the General Duty Clause, Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1);

c. failure to minimize the consequences of accidental releases, should they occur, in violation of the General Duty Clause, Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1);

d. failure to timely report a February 6, 2015, release of ammonia to the National Response Center, in violation of Section 103(a) of CERCLA, 42 U.S.C. § 9603(a); and

e. failure to timely submit Tier 2 hazardous chemical inventory forms to the proper authorities, in violation of Section 312(a) of EPCRA, 42 U.S.C. § 11022(a), and its implementing regulations at 40 C.F.R. Part 370.

Respondents have removed the anhydrous ammonia from this facility and are operating with a different refrigerant.

## II. STATUTORY AND REGULATORY AUTHORITY

### CAA Statutory Authority

6. 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 29 U.S.C. § 654, to (a) identify hazards which may result 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 which do occur. This section of the CAA is referred to as the "General Duty Clause."

7. The extremely hazardous substances listed pursuant to Section 112(r)(3) of the CAA, 42 U.S.C. § 7412(r)(3), include, among others, anhydrous ammonia.

8. The term "accidental release" is defined by Section 112(r)(2)(A) of the CAA, 42 U.S.C. § 7412(r)(2)(A), as an unanticipated emission of a regulated substance or other extremely hazardous substance into the ambient air from a stationary source.

9. The term "stationary source" is defined by Section 112(r)(2)(C) of the CAA, 42 U.S.C. § 7412(r)(2)(C), in pertinent part, as any buildings, structures, equipment, installations or substance-emitting stationary activities, located on one or more contiguous properties under the control of the same person, from which an accidental release may occur.

10. The term "have a general duty in the same manner and to the same extent as section 654, title 29 of the United States code" means owners and operators must comply with the General Duty Clause in the same manner and to the same extent as employers much comply with the Occupational Safety Health Act administered by OSHA.[1]

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[1] 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 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 (6th 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

11. Sections 113(a) and (d) of the CAA, 42 U.S.C. § 7413(a) and (d), as amended by EPA's 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 of up to $37,500 per day for violations occurring after January 12, 2009.

12. EPA and the U.S. Department of Justice have jointly determined that this action is an appropriate administrative penalty action under Section 113(d)(1) of the Act, 42 U.S.C. § 7413(d)(1).

CERCLA Statutory and Regulatory Authority

13. Section 103(a) of CERCLA requires that any person in charge of an onshore facility report the non-permitted release of a hazardous substance from the facility to the National Response Center as soon as that person has knowledge of such a release in an amount equal to or greater than the reportable quantity, as determined pursuant to Section 102 of CERCLA, 42 U.S.C. § 9602.

14. Section 102(a) of CERCLA, 42 U.S.C. § 9602(a), requires the Administrator of EPA to, among other things, promulgate regulations establishing the reportable quantities of any hazardous substance.

15. EPA promulgated the federal regulations known as the CERCLA Notification Rules, 40 C.F.R. Part 302, to implement Sections 102 and 103 of CERCLA. These regulations

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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.

designate the hazardous substances subject to notification requirements, identify the reportable quantities for those substances, and set forth the notification requirements for those substances.

16. Forty C.F.R. § 302.6 requires, among other things, that any person in charge of an onshore facility report the non-permitted release of a hazardous substance from the facility to the National Response Center as soon as that person has knowledge of such a release in an amount equal to or greater than the reportable quantity.

17. Sections 109(a) and (b) of CERCLA, 42 U.S.C. §§ 9609(a) and (b), as amended by EPA's Civil Monetary Penalty Inflation Adjustment Rule, 40 C.F.R. Part 19, promulgated in accordance with the DCIA, 31 U.S.C. § 3701, provide for the assessment of civil penalties for violations of Section 103(a) of CERCLA, 42 U.S.C. § 9603(a) in amounts of up to $37,500 per day for violations occurring after January 12, 2009. Section 109(b) of CERCLA, 42 U.S.C. § 9609(b) specifies higher penalties for subsequent violations.

EPCRA Statutory and Regulatory Authority

18. In accordance with Section 312(a) of EPCRA, 42 U.S.C. § 11022(a), the owner or operator of a facility that is required under the Occupational Safety and Health Act ("OSHA") to prepare or have available a material safety data sheet ("MSDS") for a hazardous chemical must prepare and submit an emergency and hazardous chemical inventory form ("Tier 1" or "Tier 2" form) to the state emergency response commission ("SERC"), the local emergency planning committee ("LEPC"), and the local fire department. Tier 1 or Tier 2 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. Additionally, Section 312(b) of EPCRA, 42 U.S.C. § 11022(b), authorizes EPA to establish minimum threshold levels of hazardous chemicals for the purposes of Section 312(a) of EPCRA, 42 U.S.C. § 11022(a).

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

20. 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 Part 370. Under 40 C.F.R. §§ 370.20, 370.40, 370.44, and 370.45, the owner or operator of a facility that has present a quantity of a hazardous chemical exceeding the minimum threshold level must prepare and submit a Tier 1 or Tier 2 form to the LEPC, SERC, and local fire department. Forty C.F.R. § 370.45 prescribes that Tier 1 or Tier 2 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. The LEPC, SERC, or local fire department may request that a facility submit the more comprehensive Tier 2 form in lieu of the Tier 1 form. Vermont requires the Tier 2 form and requires reporting at lower thresholds than EPA (100 pounds for anhydrous ammonia).[2]

21. Section 325(c) of EPCRA, 42 U.S.C. § 11045(c), as amended by EPA's Civil Monetary Penalty Inflation Adjustment Rule, 40 C.F.R. Part 19, promulgated in accordance with the DCIA, 31 U.S.C. § 3701, provides for the assessment of civil penalties for violations of Section 312(a) of EPCRA, 42 U.S.C. § 11022(a), in amounts of up to $37,500 per day for violations occurring after January 12, 2009.

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2. See e.g., *Memorandum to Facilities Using/Possessing Hazardous Materials or Pesticides Re. Reporting Requirements for Hazardous Materials or Pesticides in the Workplace for Calendar Year 2015,* from Vermont Community Right-to-Know and EPCRA Program (Dec. 15, 2015) and Memorandum entitled *Tier II Reporting Requirements for Chemicals Used in Cooling and Freezing Processes (Refrigerants, Anhydrous Ammonia, etc.)* (undated), both found at http://vem.vermont.gov/programs/epcra.

## III. GENERAL ALLEGATIONS

22. Respondent, Swan Valley Cheese of Vermont, LLC, operates a facility located at 11 Jonergin Drive in Swanton, Vermont, where it makes cheese (the "Facility"). The company, which has a New Jersey address, is incorporated in Vermont.

23. Respondent, Jonergin Realty, LLC, owns the Facility and likewise is incorporated in Vermont with a New Jersey address.

24. The Facility is located in an industrial section of Swanton, Vermont, within approximately 700 feet (0.13 mile) of Route 78, which runs up to the Canadian border, 590 feet (0.11 mile) of the nearest residence, 1,000 feet (0.19 mile) of the Missisqoui River, and within half a mile of the downtown area, which is located across the river from the Facility. At the time of the violations alleged herein, a worst-case release of ammonia from the largest vessel on site could have seriously injured people within a 1.9-mile perimeter of the Facility.

25. Each Respondent is a limited liability company organized under the laws of the State of Vermont. As a corporation, each Respondent is a "person" within the meaning of:

(a) Section 302(e) of the Clean Air Act, 42 U.S.C. § 7602(e);

(b) Section 101(21) of CERCLA, 42 U.S.C. § 9601(21), and 40 C.F.R. § 302.3; and

(c) Section 329(7) of EPCRA, 42 U.S.C. § 11049(7), and 40 C.F.R. § 370.66.

26. The Facility is a "stationary source" as that term is defined at Section 112(r)(2)(C) of the CAA, 42 U.S.C. § 7412(r)(2)(C).

27. At the time of the violations alleged herein, the Facility had a refrigeration system, which cycled approximately 2,500 pounds of anhydrous ammonia through various physical states to cool Respondents' products. Accordingly, Respondents "stored" and "handled" anhydrous ammonia.

28. The Facility's ammonia refrigeration system was installed decades before Respondent, Jonergin Realty, LLC, acquired the Facility. Respondent, Swan Valley Cheese of Vermont, LLC, restarted the defunct plant in 2011.

29. Anhydrous ammonia is a clear, colorless gas at atmospheric conditions of temperature and pressure with a strong odor. It is often stored and shipped under pressure as a liquid. It presents a significant health hazard because it is corrosive to the skin, eyes, and lungs. Ammonia vapors may be fatal if inhaled. Exposure to 300 parts per million by volume is immediately dangerous to life and health. Ammonia gas is generally regarded as nonflammable but does burn at concentrations of approximately 15.5% to 27% by volume in air with strong ignition. 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. The fire hazard increases in the presence of oil or other combustible materials.

30. Anhydrous ammonia is an "extremely hazardous substance" subject to the General Duty Clause. It is also a "hazardous chemical" subject to reporting under EPCRA Section 312, 42 U.S.C. § 11022, and a "hazardous substance" subject to reporting under CERCLA Section 103(a), 42 U.S.C. § 9603(a).

31. Due to the dangers associated with anhydrous ammonia, the ammonia refrigeration industry has developed industry standards to control the risks associated with the use of ammonia. 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. Bulletins and guidance include without limitation: IIAR Bulletin No. 109, *Guidelines for IIAR Minimum Safety Criteria for a*

*Safe Ammonia Refrigeration System* (1997); IIAR Bulletin No. 110, *Guidelines for Start-Up, Inspection, and Maintenance of Ammonia Mechanical Refrigerating Systems* (rev. 2002); IIAR Bulletin No. 114, *Guidelines for Identification of Ammonia Refrigeration Piping and System Components* (1991 and 2014 editions); IIAR Bulletin 116, *Guidelines for Avoiding Component Failure in Industrial Refrigeration Systems Caused by Abnormal Pressure or Shock* (1992); and the 2005 *Ammonia Refrigeration Management Program* ("IIAR ARM Program"), which is intended for systems containing less than 10,000 pounds of ammonia. 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 by reference into state building, mechanical, and fire codes.

32. On February 6, 2015, at approximately 3:30 p.m., a release of approximately 1,650 pounds of anhydrous ammonia occurred during an attempt to drain oil from a compressor in the Facility's ammonia machinery room (the "Release"). Due to the lack of self-closing or manual quick-closing valve near the oil drain point, the compressor was not fully isolated, which meant that pressure in the ammonia refrigeration system forced the oil plug out in an uncontrolled manner, splashing three employees with a hot oil/ammonia mixture. The employees left the ammonia machinery room and escaped serious injury due to the protection provided by their heavy winter clothing. An ongoing ammonia release ensued.

33. At approximately 3:45 p.m. on February 6, 2015, Facility personnel contacted the Swanton Fire Department, which responded to the Facility at 4:09 p.m. According to the Fire Department's incident report, the Fire Department evacuated the remaining four Facility

employees from the Facility, established an evacuation radius of 0.5 mile, and requested assistance from the Vermont Hazardous Materials Response Team.

34. The Vermont Hazardous Materials Response Team arrived at the Facility and stopped the release at 8:50 p.m. Because the Facility lacked emergency shutdown controls outside the room and proper ventilation systems to safely vent the room for entry, the responders could not immediately stop the refrigeration system from continuing to release ammonia. The Release endured for several hours until enough ammonia was vented outside through fans so the oil plug could be reseated.

35. On February 10 and 12, 2015, the Facility's ammonia refrigeration system was recharged with a total of 1,650 pounds of anhydrous ammonia. Based on these recharge amounts, EPA estimates that approximately 1,650 pounds of anhydrous ammonia were released over a span of 320 minutes on February 6, 2015.

36. Respondents did not report the Release to the National Response Center ("NRC") immediately after it occurred. Respondents did report the Release to the NRC on March 24, 2015, after EPA inspected the Facility.

37. After hearing about the Release, a duly authorized EPA inspector, two of EPA's Senior Environmental Employment ("SEE") Program grantees, an EPA On-Scene Coordinator, and EPA emergency response contractors (collectively, the "EPA Inspectors") visited the Facility on March 24, 2015 (the "March 24, 2015 Inspection") to investigate the Release and determine whether Respondents were complying with Section 112(r) of the CAA, EPCRA, and Section 103 of CERCLA. The EPA inspectors interviewed the Plant Manager and three employees involved with the Release. They also toured areas of the Facility in which ammonia system components were located, as well as oil and chemical storage areas.

38. At the time of the violations alleged herein, Respondents' ammonia refrigeration system ("System") had several components typically found in such systems, some of which are described below:

a. ***Evaporators:*** These are the units in which the ammonia is allowed to evaporate (at a low -28° F boiling point), drawing and absorbing the heat from a room as the ammonia evaporates, thereby cooling a room. This Facility had at least two cooling areas, identified in EPA's inspection reports as Cooler #1 and Cooler #2. Ammonia pipes ran from this room through the "Green Room" (a chemical storage location) to the ammonia machinery room.

b. ***Compressors:*** After being allowed to evaporate, ammonia gas flows at low pressure to a compressor where it is compressed to a higher pressure. This compression process also raises the temperature of the gas. The hot, compressed vapor is then in a thermodynamic state known as a superheated vapor and is at a temperature and pressure at which it next will be condensed with either cooling water or cooling air. Oil is used in the compressors to help seal them and lubricate the compressor's parts. Used oil must be regularly removed from the compressors. This Facility had four compressors, although at least two of them were not in service.

c. ***Accumulator:*** An accumulator is a temporary reservoir that prevents liquid refrigerant and oil from entering the compressor because compressors are designed to compress only ammonia that is a gaseous (vapor) state. This Facility had at least one accumulator embedded in the ceiling in the ammonia machinery room.

d. ***Condenser:*** Heated ammonia vapor at high pressure flows from a compressor to the condenser, where the vapor flows through the condenser's heat exchanger. The heat exchanger cools the vapor and condenses it into a liquid. From here, the liquid typically flows at high pressure into a high pressure receiver, where it is stored. Respondents' condenser was located on the roof.

e. ***High Pressure Receiver:*** The high pressure receiver is a tank that has the function of (a) collecting ammonia after the condensing stage, (b) storing most of the ammonia in a typical refrigeration system, and (c) sending the ammonia out to the evaporators. Due to their capacity to release large amounts of ammonia if breached, it is important to maintain the integrity of high pressure receivers and associated valves. Respondents' System had one high pressure receiver, built in 1956, located in the ammonia machinery room.

f. ***Pumps and valves***: Like most ammonia refrigeration systems, the System had multiple pumps and valves to move and control the flow of ammonia through the System. Receivers have "king valves" that can be used to stop the flow of ammonia from the receivers to the rest of the System during an emergency. Closing the king valve can shorten the duration of any continuing ammonia releases. Often solenoid valves near these king valves can be activated by emergency switches outside the building so that emergency responders do not have to enter a building filled with ammonia vapors to turn off a system. This System did not have any such emergency switches.

g. ***Piping:*** Pipes throughout the Facility and on the roof carried ammonia in all its various physical states.

h. ***Ammonia detectors:*** These devices, typically placed in ammonia machinery rooms, detect ammonia vapors that have been released at certain concentrations. They activate alarms to warn of a release, and they activate ventilation systems to prevent vapors from building up to dangerous levels. It is essential for detectors to be properly placed, maintained, calibrated, and connected to alarms and ventilation systems so that they can fulfill their function. The Facility had no ammonia detectors.

i. ***Emergency controls***: An emergency control box, typically placed outside the designated machinery room door, allows emergency responders to control releases by actuating key refrigeration system equipment, such as compressors, ventilation, and king valves. The Facility had no emergency control boxes outside the ammonia machinery room access door.

j. ***Ice-Maker:*** This particular Facility had an ice-making process that included a large ice-maker box, an ammonia coil submersed in water, an ammonia-containing vessel resting on top of the ice-maker box, a surge drum, a water line, and ammonia piping.

39. During the March 24, 2015 Inspection, the EPA Inspectors observed some potentially dangerous conditions relating to the System. Due to EPA's concern over the dilapidated state of the Facility's System, EPA hired an ammonia refrigeration expert ("Expert") with over 30 years of experience to review the condition of the System. The Expert, an EPA inspector, and an additional EPA contractor inspected the Facility again on April 24, 2015 (the "April 24 2015 Inspection").

40. The potentially dangerous conditions observed during the March 24 and April 24, 2015 inspections are listed in the chart attached hereto as Attachment 1, which is incorporated by reference into this CAFO.

41. During the April 24, 2015 Inspection, the Expert confirmed EPA's previous findings about the System and observed several conditions that he believed should be addressed immediately, including the following:

a. ***Ice-maker deficiencies***: In the ice-builder room, a corroded ammonia ice builder vessel was resting on top of the ice maker. The ice builder box (with the ammonia coil submersed in the water) was corroded, bulging, shored up with wood columns, and had the potential to collapse, which could cause a major ammonia release from the ice builder vessel and coil. Also in that room, a water line was supported by an ammonia suction line that appeared to be rusty and insufficiently supported.
b. ***Widespread corrosion***: There were severely corroded pipes and components throughout the facility and on the roof, risking ammonia release. Many areas of piping had serious metal thinning and loss. These pipes needed non-destructive testing to determine whether they could continue to be used.
c. ***Breached vapor barriers***: Many ammonia pipes and components inside the building and on the roof had broken vapor barriers, further risking corrosion from moisture. Some of these areas with broken vapor barriers were covered in ice.
d. ***Pressure relief deficiencies***: Pressure relief valves were outdated, not tagged, and not properly maintained. The pressure relief system for the high pressure receiver was deficient. The relief header piping for the high pressure receiver seemed too small in diameter, which would create backpressure of any released ammonia on the vessels (possibly causing an explosion). Also, the relief header would not discharge at a sufficient height to prevent contact with ammonia vapor during a release.
e. ***Lack of emergency shut-off switches:*** There were no manual ventilation and emergency shut-off switches outside the ammonia machinery room.
f. ***No ventilation***: There was no ventilation for the ammonia machinery room, which, combined with the lack of emergency shut-off switches, would make any ammonia release from equipment in this room more dangerous for workers and emergency responders because it would be impossible to turn off the equipment without entering into a vapor-filled space. Specifically, there was no air inlet to the machinery room, and the only exhaust fan for the room was not working.

g. ***No ammonia detectors or alarms***: There were no ammonia detectors at the facility to detect released vapors. Nor were there audio/visual alarms to warn of an ammonia release or a windsock to indicate wind direction.
h. ***Electrical hazards***: There were multiple electrical hazards, including exposed wires throughout the facility. The danger was that ammonia is flammable in air at certain concentrations with a strong ignition source.
i. ***Lack of information about System***: There were no piping and instrumentation diagrams to help employees, contractors, emergency responders, or regulators understand the System.
j. ***No Hazard Review***: There was no hazard analysis/review to identify all the hazards associated with the system.
k. ***No spring loaded valve for safe oil draining***: There was no spring-loaded valve on the high pressure receiver to drain oil safely. Spring-loaded valves are intended to immediately close the System in the event of a problem, minimizing a release of ammonia and reducing the likelihood that a mechanic will be catastrophically exposed to ammonia when draining oil from the System.
l. ***Cylinders of ammonia in unsafe location***: There were three extra cylinders of ammonia in the ammonia machinery room. Their presence raised the risk of an ammonia release should a fire occur in the Facility. Also, there were no ammonia detectors where the cylinders were stored. Severe injuries could occur if the cylinders leaked.
m. ***Corroded hangars***: In the Green Room, which was one of the product cooling areas, the hangars supporting ammonia piping were corroded, risking an ammonia release.

42. On May 13, 2015, EPA issued a letter to Respondent, Swan Valley Cheese of Vermont, LLC, providing notice of potential General Duty Clause violations (the "Letter"). The Letter included an earlier version of the chart in Attachment 1 and provided advance warning that EPA would be issuing an order to ensure compliance with the General Duty Clause. To expedite compliance, the Letter also outlined the first few steps that such an order likelywould require.

43. Respondent, Swan Valley Cheese of Vermont, LLC, was responsive to the Letter and began taking steps to address deficiencies at the Facility.

44. On July 14, 2015, EPA sent Respondents a draft version of a Notice of Violation and Administrative Order ("NOV/AO"), requiring compliance with the General Duty Clause.

Respondents provided comments on July 31, 2015, and the parties held conference calls to discuss the comments.

45. On August 6, 2015, Respondent, Swan Valley Cheese of Vermont, LLC, notified EPA that the company planned to immediately remove the anhydrous ammonia from the System rather than fix the System. Respondent planned to replace the System with another refrigeration system that did not use anhydrous ammonia as a refrigerant.

46. On August 12, 2015, EPA issued the final NOV/AO, which incorporated comments on the draft and required a plan for safe removal of the anhydrous ammonia.

47. On September 10, 2015, Respondents removed the ammonia from the System.

48. On October 7, 2015, EPA obtained a waiver from the Department of Justice pursuant to the CAA, 42 U.S.C. § 7413(d)(1), to address the penalty stage of this action administratively. EPA also conducted an expedited review of Respondents' financial documents to facilitate Respondents' ability both to pay a penalty and reopen the Facility as soon as possible.

49. Respondents subsequently reopened the Facility and purchased a new refrigeration system.

50. As a result of EPA's inspections and review of information provided by Respondents, EPA alleges that the following violations occurred while the anhydrous ammonia was still in the System:

## IV. VIOLATIONS

## COUNT I – FAILURE TO IDENTIFY HAZARDS IN VIOLATION OF THE CAA'S GENERAL DUTY CLAUSE

51. The allegations in paragraphs 1 through 50 above are hereby realleged and incorporated herein by reference.

52. 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, in the same manner and to the same extent as Section 654 of Title 29, to, among other things, identify hazards which may result from accidental releases of such substances, using appropriate hazard assessment techniques.

53. As alleged in Paragraphs 22 through 27, Respondents own or operate a stationary source that handled and stored anhydrous ammonia, an extremely hazardous substance. Accordingly, at the time of the violations alleged herein, Respondents were subject to the General Duty Clause.

54. Industry standards and guidelines with respect to ammonia refrigeration systems are found in, among other places, ANSI/IIAR Standard 2, ANSI/ASHRAE Standard 15, IIAR bulletins, the IIAR ARM Program, and other materials consistently relied upon in the refrigeration industry.

55. The recommended industry practice and standard of care for identifying, analyzing, and evaluating potential hazards associated with ammonia refrigeration systems of the same size and type as Respondents' System is to use, among other things, standard, industry-developed hazard identification checklists, a "What If" analysis, or a Hazard and Operability (a/k/a "HAZOP") study. IIAR has developed checklists for this purpose. See, e.g., IIAR ARM Program, Section 10 and Appendix 10.1. See also IIAR's Bulletin No. 110, Startup, Inspection, and Maintenance of Ammonia Mechanical Refrigeration Systems, Section 5.2.1; and U.S.

Environmental Protection Agency, *Guidance for Implementation of the General Duty Clause Clean Air Act Section 112(r)(1)*, May 2000 ("EPA's GDC Guidance"), Section 2.3.1, currently available at http://www.epa.gov/emergencies/docs/chem/gdcregionalguidance.pdf.

56. According to EPA's GDC Guidance, the General Duty Clause's duty to identify hazards that may result from hazardous releases requires determining (a) the intrinsic hazards of the chemicals used in the processes, (b) the risks of accidental releases from the processes through possible release scenarios, and (c) the potential effect of these releases on the public and the environment. The document that contains this analysis is often referred to as a process hazard analysis or process hazard review ("Process Hazard Review").

57. As described in Paragraphs 39 through 41 above and in Attachment 1, EPA Inspectors and the Expert observed potentially dangerous conditions at the Facility that indicated a failure to identify hazards associated with the System.

58. Moreover, Respondents were not able to produce any Process Hazard Review while the EPA inspectors were at the Facility during either inspection.

59. Accordingly, Respondents violated the General Duty Clause's requirement to identify hazards associated with the refrigeration system using industry-recognized hazard assessment techniques, in violation of Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1).

## COUNT II- FAILURE TO DESIGN AND MAINTAIN A SAFE FACILITY IN VIOLATION OF THE CAA'S GENERAL DUTY CLAUSE

60. The allegations in Paragraphs 1 through 59 are hereby realleged and incorporated herein by reference.

61. 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 second 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.

62. 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 Respondents' 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, ASHRAE and others have developed standards and guidelines for this purpose, such as the IIAR Bulletins, ANSI/IIAR Standard 2, the IIAR ARM Program, and ANSI/ASHRAE Standard 15. See also EPA's GDC Guidance, Section 2.3.2 and National Fire Protection Association 1, Fire Code, Section 53.

63. At all times relevant to the allegations in this CAFO, each 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 the subparagraphs below. 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 the subparagraphs below also have resulted in violations of the General Duty Clause's third duty, as further discussed in Count III.

a. ***Inadequate information available about System***: At the time of the EPA inspections, inadequate documentation was available about the technology and equipment of the ammonia refrigeration system. For example, there was no Process and Instrumentation Diagram or floor plan that would allow Facility personnel, inspectors, or emergency responders to identify the location of key System equipment, piping, and valves. Nor did Respondents have written information about System equipment, such as valves. Such information is critical to conducting a Process Hazard Review, writing standard operating procedures, and setting up an appropriate preventative maintenance program. Attachment 1, pages 1 to 2, lists examples of industry standards of care for documenting ammonia refrigeration system information.

b. ***Inadequate support for ammonia-containing piping and components***: At the time of the EPA inspections, in the ice-builder room, a corroded ammonia-containing vessel was resting on top of the ice maker tank. The ice builder tank (with an ammonia coil submersed in the water) was corroded, bulging, shored up with wood columns, and had the potential to collapse, which could cause a major ammonia release from the ammonia-containing vessel and coil. Also in that room, a water line lay across and was being supported by an ammonia suction line that appeared to be rusty and was, itself, insufficiently supported. In the Green Room, process piping was inadequately supported due to corrosion of piping hangars. Inadequate support for ammonia-containing vessels and pipes could

cause a collapse of the equipment, leading to a release. Attachment 1, page 2, lists examples of industry standards of care for supporting ammonia-containing equipment and pipes.

c. ***Widespread corrosion:*** At the time of the EPA inspections, there were severely corroded pipes and components throughout the facility and on the roof, risking ammonia release if corrosion continues to the point of failure. EPA Inspectors found surface corrosion, pitting, and flaking on specific pipes and piping components, reducing the useful life of the equipment. The high pressure receiver, which is the component on site containing the most ammonia, had severe rust and pitting, rusted hand valves, and rusted piping. Many areas of corroded piping at the Facility had serious metal thinning and loss. Attachment 1, page 3, lists examples of industry standards of care for avoiding corrosion.

d. ***No ventilation:*** At the time of the EPA inspections, there was no fresh air intake to the ammonia machinery room that would allow adequate air exchange of the room for ventilation, and the exhaust fan for the machinery room was not working. Without adequate ventilation, ammonia vapors are more likely to build up to levels that present significant inhalation and dermal hazards or that risk causing fire or explosion. Also, where an exterior emergency shut-off switch is lacking, the buildup of dangerous levels of toxic and flammable vapors in a machinery room can delay the entry of emergency response personnel to shut off the system, resulting in a prolonged release. Accordingly, in addition to being a violation of the duty to design and maintain a safe facility, this condition also was a violation of the duty to minimize consequences of releases that do occur, as

alleged in Count III, below. Attachment 1, page 4, lists examples of industry standards of care for ventilating ammonia machinery rooms.

e. ***Broken vapor barriers on piping:*** At the time of the EPA inspections, there were broken vapor barriers (i.e., insulation) on pipes throughout the Facility and on top of the roof. Vapor barriers insulate pipes and protect them from moisture, which causes corrosion. Corroded pipes can disintegrate and break, causing an ammonia release. Attachment 1, **page 5,** lists an industry standard of care for keeping vapor barriers intact.

f. ***No ammonia detectors or alarms***: At the time of the EPA inspections, there was no ammonia detector at the Facility to detect released vapors. Nor were there audio/visual alarms to warn of an ammonia release. Ammonia detectors and alarms provide early warning that a release is taking place, enabling a quick system shutdown and response, and protecting workers, emergency responders, and the public from a larger release. Under the local fire code, such detectors must also automatically turn off electrical power when they sense vapors at certain concentrations, which could prevent further releases. Failure to have a vapor detector also was a violation of the duty to minimize consequences of releases that do occur, as alleged in Count III, below. Attachment 1, page 5, lists examples of industry standards of care for vapor detectors in ammonia machinery rooms.

g. ***Lack of emergency shut-off switches:*** At the time of the EPA inspections, there were no manual ventilation and emergency shut-off switches outside the ammonia machinery room door. The lack of such switches creates a risk of harm to

workers and emergency responders who cannot quickly shut down or properly ventilate a 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. During the Release, the lack of emergency shut-off switches contributed to Respondents' inability to prevent a continuing release, increasing the risks to emergency responders and the public and requiring a 0.5 mile evacuation zone. This hazard also was a violation of the duty to minimize consequences of releases that do occur, as alleged in Count III, below. Attachment 1 at page 6, lists examples of industry standards of care for remote emergency shut-down controls.

h. ***Poor design of oil drain system***: At the time of the EPA inspections, Respondents did not have an oil drain system on the high pressure receiver that was self-closing, a manual quick-closing emergency stop valve, or other suitably engineered system. Nor did Respondents have such a valve on the oil drain point between compressors #1 and #2. A spring-loaded valve would immediately close the System in the event of a problem during oil draining, minimizing a release of ammonia and reducing the likelihood of catastrophic injury to a mechanic draining oil from the System. The lack of such a valve on this System contributed to the extended Release that occurred on February 6, 2015. Due to a lack of self-closing or manual quick-closing valve near the compressors' oil drain point, the compressor was not fully isolated when the employees removed the oil plug to drain the oil. Pressure in the System forced the oil plug out in an uncontrolled manner, splashing the three employees with a hot oil/ammonia mixture. An

ammonia release ensued that lasted several hours. This condition also was a violation of the duty to minimize consequences of releases that do occur, as alleged in Count III, below. Attachment 1, page 7, lists examples of industry standards of care for oil drain systems.

i. ***Electrical hazards***: At the time of the EPA inspections, there were exposed electrical wires throughout the Facility, including the ammonia machinery room. There also were combustible materials stored in the machinery room as well as electrical panels and outlets, which could spark and serve as a source of ignition in the event of an ammonia leak. These conditions increase the risk of fire or explosion in the event of an ammonia release because ammonia is flammable at certain concentrations. A fire or explosion also could cause a much bigger release of ammonia than would otherwise occur. Accordingly, this condition also was a violation of the duty to minimize consequences of releases that do occur, as alleged in Count III, below. Attachment 1, pages 7 to 8, lists examples of industry standards of care for fire safety in ammonia machinery rooms.

j. ***Extra cylinders of ammonia present in the machinery room***: At the time of the EPA inspections, three cylinders of ammonia were improperly stored in the ammonia machinery room, which increases the risk of an ammonia release should a fire occur in the facility. Also there were no ammonia detectors located in the area where they were stored to warn people of any leakage from the cylinders, which could result in severe injuries. Attachment 1, page 8, lists examples of industry standards of care for use and storage of ammonia cylinders in ammonia machinery rooms.

k. ***Inadequate signage and labeling on System***: There was inadequate signage and labeling on various parts of the System, which meant that workers maintaining the system and emergency responders responding to releases did not have the information needed to safely perform their jobs. Signs and posted information can provide a level of protection in addition to training and operating procedures, keeping workers from inadvertently causing releases and allowing responders to quickly understand the System. Examples of deficient labeling and signage include the following:

i. There was not a legible, permanent sign anywhere on the System indicating the name and address of the installer, the refrigerant number and amount of refrigerant in the System, lubricant identity and amount, and the field test pressure(s) applied;

ii. The piping and valves were not labeled to indicate contents, direction of flow, physical state (i.e., liquid or vapor), pressure level (i.e., high or low). Nor were there distinctive markers for other system components (e.g., high pressure receiver, accumulator, etc.);

iii. The main shut-off valve (King Valve) for the high pressure receiver was not identified with a prominent sign (although a small paper tag identified the valve);

iv. The door to the machinery room lacked appropriate hazard warning labels and signage (including emergency procedures), increasing the chance of inadvertent exposure to ammonia and potentially frustrating efforts to react quickly and safely during an ammonia release.

v. There were no tags or other documentation for pressure relief valves showing the date of installation and when they had last been inspected.

Some of the labeling and signage deficiencies also violated the duty to minimize consequences of releases that do occur, as alleged in Count III, below. Examples of industry standards of care for a permanent, legible sign on the System are provided in Attachment 1, page 9; on page 12 for piping and component labeling; on page 12 for King Valve labeling; on page 8 for door labeling; and on page 13 for pressure relief valve documentation.

l. ***Additional Pressure Relief Deficiencies:*** At the time of the EPA inspections, in addition to not being tagged or having adequate documentation, pressure relief valves and systems were deficient in the following ways:

i. Pressure relief valves were outdated and improperly maintained in that they were not replaced or inspected, cleaned, and tested every five years. Old pressure relief valves could release ammonia at normal operating pressures (as opposed to when the System is over-pressurizing) because the spring inside the relief valve can weaken with age.

ii. The Facility did not have adequate pressure relief valve calculations to demonstrate that the valves installed on the System met the capacity requirements within ammonia refrigeration design standards.

iii. The pressure relief device for the accumulator did not discharge to the outdoors, which would allow ammonia releases from this corroded vessel to discharge in a space where employees might be working, risking serious injury;

iv. The discharge height of pressure relief headers from both the high pressure receiver and the compressors outside the machinery room was less than 15 feet above the roof level. Also, the relief headers appeared to be too small. Improperly-placed discharge reliefs can result in ammonia being sprayed on people during a release, and relief headers that are too narrow and small may not be able to withstand the pressure of the ammonia being released, which would create backpressure of any released ammonia on the vessels (possibly causing an explosion).

Examples of industry standards of care for maintaining pressure relief valves are found in Attachment 1, page 13; on page 13 for pressure relief valve calculations; on page 15 for discharging to outdoors; and on page 6 for pressure relief header requirements.

m. ***Inadequate training program***: At the time of the EPA inspections, the Facility lacked an adequate training program and training documentation for safely operating, maintaining, and responding to releases from the System. The Facility did not have anyone on staff trained to operate or maintain the System and used a contractor from New York for maintenance activities. Yet, the February 6, 2015 Release occurred when Facility employees were changing the oil and had difficulty removing and then reseating the oil plug. Inadequately trained operators may manage refrigeration systems unsafely, which could lead to a release that injures the operator, other employees, and people off-site – particularly when the lack of training is compounded by a lack of safety features (such as a self-closing valve on the oil drain system and proper ventilation). Also, inadequately trained

employees may not be able to respond safely during a release, thereby making the consequences of a release more dangerous. Accordingly, the lack of training was also a violation of the duty to minimize consequences of releases that do occur, as alleged in Count III, below. Examples of industry standards of care for training employees are found in Attachment 1 at pages 10 to 11.

n. ***Darkness and obstructions in ammonia machinery room:*** At the time of the EPA inspections, the ammonia machinery room was very dark, and there was not a clear and unobstructed way to access some of the equipment for inspection, service, and emergency shutdown. For example, the accumulator, embedded in the ceiling, was very difficult to examine. The EPA Inspectors had to bring their own lighting on the second inspection to adequately inspect the room. This condition also was a violation of the duty to minimize consequences of releases that do occur, as alleged in Count III, below. Examples of industry standards of care for providing a clear and unobstructed approach to refrigeration machinery are found in Attachment 1 at page 14.

o. ***Failure to protect liquid level gauge glass column and other System components from damage:*** At the time of the EPA inspections, the liquid level gauge column on the high pressure receiver was located such that it could be inadvertently damaged or struck, risking release of ammonia. Likewise evaporators in Cooler Area #1 were not properly protected from accidental damage or rupture from external sources (such as forklifts) in the passage way between Cooler Areas #1 and 2. Examples of industry standards of care for protecting sight gauges are found in Attachment 1 at page 14.

p. ***Excessive ice on piping and valves:*** At the time of the EPA inspections, there was excessive ice buildup on refrigeration piping and components in the cooling rooms and the ammonia machinery room. Ice buildup can weigh down piping, risking collapse and ammonia release. It also exposes pipes to moisture, which can cause corrosion and pipe failure. Examples of industry standards of care for reducing ice build-up are found in Attachment 1 at page 15.

q. ***No standard operating procedures***: At the time of the EPA inspections, the Facility had no standard operating procedures for employees who were changing oil or otherwise engaged in maintaining the System. Without standard operating procedures, employees may not be consistent about operating the System's equipment safely, increasing the chance of a release. Examples of industry standards of care for having standard operating procedures for a system of this size are found in Attachment 1 at page 16.

r. ***No documented mechanical integrity program:*** At the time of the EPA inspections, the Facility did not have a preventative maintenance program in place or maintenance schedules to ensure the mechanical integrity of the System. Lack of equipment inspection and maintenance can create risk of equipment breakdown, leading to a release. Examples of industry standards of care for having a mechanical integrity program for a system of this size are found in Attachment 1 at pages 16 to 17.

## COUNT III- FAILURE TO MINIMIZE THE CONSEQUENCES OF ACCIDENTAL RELEASES THAT DO OCCUR IN VIOLATION OF THE CAA'S GENERAL DUTY CLAUSE

64. The allegations in Paragraphs 1 through 63 are hereby realleged and incorporated herein by reference.

65. 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 third general duty -- to, in the same manner and to the same extent as Section 654 of Title 29, minimize the consequences of any accidental releases of anhydrous ammonia which do occur.

66. 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.

67. In addition, EPA's General Duty Clause Guidance discuss 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.

68. At all times relevant to the allegations in this CAFO, Respondents each 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, in at least the following respects. Examples of industry standards of care are found in Attachment I.

Design and maintenance measures to minimize releases that do occur

69. ***Inadequate emergency shutdown controls:*** As discussed in Count II, the Facility had no emergency shutdown controls adjacent to the ammonia machinery room door. The lack of appropriate emergency shut-offs creates a risk of harm to workers and emergency responders, who cannot quickly shut down or properly ventilate the machinery room without entering a machinery room, which room could have dangerous levels of ammonia vapors. The delay could also contribute to a longer ammonia release time, exacerbating risks to workers, emergency responders, and people off-site.

70. ***Additional Pressure Relief Deficiencies:*** As discussed in Count II, the System had many deficiencies with pressure relief devices and headers. The following deficiencies with pressure relief valves or systems could exacerbate the consequences of any release:

a. The pressure relief device for the accumulator did not discharge to the outdoors, which would allow any ammonia releases that did occur from this corroded vessel to discharges in spaces where employees might be working, risking serious injury;

b. The discharge height of the pressure relief headers outside the machinery room was less than 15 feet above the roof level. Also, the relief header appeared to be too small. Improperly-placed discharge reliefs can result in ammonia being sprayed on people during a release. Relief headers that are too narrow and small may not be able to withstand the pressure of the ammonia being released, which would create backpressure of any released ammonia on the vessels (possibly causing an explosion).

71. ***Inadequate normal and emergency ventilation system in machinery room:*** As explained in Count II, the ammonia machinery room had no functional ventilation system.

Without adequate ventilation, vapors are more likely to build up to levels that are hazardous to human health or that risk causing fire or explosion. Moreover, a buildup of vapors makes it difficult to turn off equipment in the machinery room. The need for proper ventilation is even greater in facilities without emergency shutdown controls, like this one, because responders and employees cannot enter the machinery room to turn off the equipment until vapors have been ventilated, resulting in a prolonged release.

72. ***Lack of vapor detectors:*** As explained in Count II, there were no ammonia detectors at the Facility to detect released vapors. Nor were there audio/visual alarms to warn of an ammonia release. Ammonia detectors and 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. Under the local fire code, such detectors must also automatically turn off electrical power when they sense vapors at certain concentrations, which would have the effect of preventing further releases.

73. ***Poor design of oil drain system:*** As discussed in Count II, Respondents did not have an oil drain system on the pressure vessel or compressors that was self-closing, a manual quick-closing emergency stop valve, or other suitably engineered system. A spring-loaded valve would immediately close the System in the event of a problem during oil draining, minimizing a release of ammonia and reducing the likelihood of catastrophic injury to a mechanic draining oil from the System.

74. ***Electrical hazards***: As discussed in Count II, there were exposed electrical wires throughout the Facility, including the ammonia machinery room. There were also combustible materials stored in the machinery room as well as electrical panels and outlets, which could spark and serve as a source of ignition in the event of an ammonia leak. These conditions exacerbate

the risk of fire or explosion if there is an ammonia release because ammonia is flammable at certain concentrations. A fire or explosion could result in a much bigger release of ammonia than would otherwise occur.

75. ***Inadequate signage and labeling on System:*** As discussed in Count II, above, there was inadequate signage and labeling on various parts of the System, including doors, pipes, valves and equipment. The lack of signage and labeling could prevent workers and emergency responders responding to releases from having the information they would need to safely and timely perform their jobs. Signs and posted information provide a level of protection in addition to worker training and operating procedures.

76. ***Machinery Room Door Deficiencies:*** In addition to being unlabeled, the machinery room door was not tight-fitting and gasketed. Also, the door opened into the room instead of opening out and was not self-closing. Nor was it locked. In the event of an ammonia release inside the machinery room, the failure to have a tight-fitting and self-closing door risks the spread of ammonia vapors to other parts of the building and outdoors. Also, it is more difficult for employees to escape the room when the door opens into the room rather than out. Examples of industry standards of care for ammonia machinery room doors are found in Attachment 1 at page 10.

77. ***Machinery room not sealed tight***: The machinery room walls contained holes and gaps for piping that were not sealed. These gaps and holes would increase the risk associated with a release by allowing ammonia vapors to spread to other parts of the building or outside, putting employees and responders at risk. Examples of industry standards of care for sealing machinery rooms are found in Attachment 1 at page 10.

78. ***Darkness and obstructions in ammonia machinery room:*** As discussed in Count II, the ammonia machinery room was very dark, and there was not a clear and unobstructed way to access some of the equipment for inspection, service, and emergency shutdown. For example, the accumulator, embedded in the ceiling, was very difficult to examine. The EPA Inspectors had to bring their own lighting on the second inspection to adequately inspect the room.

Emergency response and preparedness planning to minimize releases

79. ***Inadequate emergency action plan or coordination with fire department:*** Respondents did not report the presence and amounts of ammonia (or other chemicals) to emergency response and planning agencies as required by EPCRA. Also, the Facility had no emergency action or response plan. Examples of industry standards of care for emergency planning and coordination are found in Attachment 1 at page 17 and in paragraph 67, above.

80. ***Inadequate training program:*** As discussed in Count II, the Facility lacked an adequate training program and training documentation for safely responding to releases from the System. Inadequately trained employees may not be able to respond safely during a release, thereby making the consequences of a release more dangerous.

81. Accordingly, Respondents violated the requirement to minimize the consequences of any accidental release of anhydrous ammonia which does occur, as required under the General Duty Clause, Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1), by failing to: notify emergency planners and responders about the presence and amount of ammonia on-site; develop and implement adequate emergency response procedures; have emergency shutdown controls; have properly designed pressure relief systems; have adequate ventilation; have adequate detector and alarm systems; have a proper oil draining system; have proper signage on

machinery room doors, piping, and System components; control electrical hazards; have tight-fitting doors to the machinery room; seal the machinery room tightly; reduce obstructions in the machinery room; and have eye wash stations and showers within 55 feet.

## COUNT IV: FAILURE TO NOTIFY THE NATIONAL RESPONSE CENTER OF A RELEASE IN VIOLATION OF CERCLA

82. Complainant realleges and incorporates by reference paragraphs 1 through 81.

83. Section 103(a) of CERCLA, 42 U.S.C. 9603(a), and 40 C.F.R. § 302.6(a) require a person in charge of an onshore facility to immediately notify the National Response Center as soon as he has knowledge of a release (other than a federally permitted release) of a hazardous substance from such facility in an amount equal to or greater than the reportable quantity of that substance.

84. As alleged above, each Respondent is a "person," as defined at Section 101(21) of CERCLA, 42 U.S.C. § 9601(21), and 40 C.F.R. § 302.3.

85. The Facility is an "onshore facility," as defined at Section 101(18) of CERCLA, 42 U.S.C. § 9601(18), and 40 C.F.R. § 302.3.

86. At the time of the Release, Respondents were "in charge of" the onshore facility.

87. Ammonia is a "hazardous substance," as defined at Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), and 40 C.F.R. § 302.3.

88. Pursuant to 40 C.F.R. § 302.4, the reportable quantity for an ammonia release is 100 pounds, as determined in any 24-hour period.

89. The Release on February 6, 2015 was a "release" into the environment, as defined at Section 101(22) of CERCLA, 42 U.S.C. § 9601(22), and 40 C.F.R. § 302.3.

90. The Release of approximately 1,650 pounds of anhydrous ammonia from the Facility during the Release exceeded the reportable quantity.

91. The Release was not a "federally-permitted release," as defined at Section 101(10) of CERCLA, 42 U.S.C. § 9601(10).

92. Accordingly, Respondents were required to immediately notify the National Response Center as soon as Respondents knew that the amount of anhydrous ammonia released exceeded the reportable quantity.

93. Respondents knew or should have known that the Release exceeded the reportable quantity immediately on February 6, 2015 or shortly thereafter when the System was recharged with anhydrous ammonia.

94. Respondents did not notify the National Response Center of the Release until EPA inspected on March 24, 2015, over a month after the Release occurred and the System was recharged with 1,650 pounds of ammonia.

95. Accordingly, Respondents' failure to immediately notify the National Response Center as soon as it had knowledge that the Release at the Facility exceeded the reportable quantity violated Section 103(a) of CERCLA and 40 C.F.R. § 302.6(a).

## COUNT V: FAILURE TO SUBMIT CHEMICAL INVENTORY FORMS IN COMPLIANCE WITH EPCA SECTION 312

96. Complainant realleges and incorporates by reference paragraphs 1 through 95.

97. Pursuant to Section 312 of EPCRA, 42 U.S.C. § 11022, and 40 C.F.R. Part 370, commencing on or before the March 1 following the date upon which Respondents were required to prepare or have available an MSDS for anhydrous ammonia at or in connection with the Facility, and on or before the March 1 of each year thereafter, Respondents were required to

submit an "emergency and hazardous chemical inventory form," containing the data regarding anhydrous ammonia at the Facility, required under Section 312, for the preceding calendar year ("Inventory Form"), to the appropriate LEPC, the SERC, and the fire department with jurisdiction over the facility.

98. Specifically, Respondents were required to submit Inventory Forms to the appropriate LEPC, the SERC, and the fire department with jurisdiction over the Facility, at least on or before the following dates:

a. March 1, 2012 for reporting year ("RY") 2011;

b. March 1, 2013 for RY 2012;

c. March 1, 2014 for RY 2013; and

d. March 1, 2015 for RY 2014;

99. Respondents never submitted Inventory Forms to the appropriate LEPC, the SERC, and the fire department with jurisdiction over the Facility.

100. Pursuant to EPCRA Section 325(c)(3), 42 U.S.C. § 11045(c)(3), each day that Defendant failed to timely submit an Inventory Form for anhydrous ammonia to the appropriate LEPC, SERC, and fire department with jurisdiction over the Facility, constitutes a separate violation of Section 312 of EPCRA, 42 U.S.C. § 11022.

101. Accordingly, Respondents' failure to submit the required Inventory Forms for reporting years 2011, 2012, 2013, and 2014 violated Section 312 of EPCRA, 42 U.S.C. § 11022, and 40 C.F.R. Part 370.

## V. TERMS OF SETTLEMENT

102. The provisions of this CAFO shall apply to and be binding on EPA and on Respondents and their officers, directors, agents, successors, and assigns.

103. Respondents stipulate that EPA has jurisdiction over the subject matter alleged in this CAFO and that this CAFO states a claim upon which relief may be granted against Respondents. Each Respondent hereby waives any defenses it might have as to jurisdiction and venue relating to the violations alleged in this CAFO.

104. Respondents neither admit nor deny the specific factual allegations contained in Section III of this CAFO or the violations alleged in Section IV of this CAFO. Respondents consent to the assessment of the penalty stated herein.

105. Each Respondent hereby waives its right to a judicial or administrative hearing on any issue of law or fact set forth in this CAFO and waives its right to appeal the Final Order.

106. Respondents certify that they are currently operating the Facility in compliance with Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1), Section 103(a) of CERCLA, 42 U.S.C.§ 9603(a), and Section 312 of EPCRA, 42 U.S.C. § 11022. Respondents further certify that all anhydrous ammonia has been removed from the Facility.

107. Pursuant to Section 113(e) of the CAA, 42 U.S.C. § 7413(e), and Section 325(c) of EPCRA, 42 U.S.C. § 11045(c), and taking into account the relevant statutory penalty criteria (particularly the economic impact of the penalty on the business), the facts alleged in this CAFO, and such other circumstances as justice may require, EPA has determined that it is fair and proper to assess a civil penalty of one hundred thousand ($100,000) for the violations alleged in this matter. The penalty shall be apportioned in the following manner: $87,000 for the alleged

CAA violations, $7,000 for the alleged CERCLA violations, and $6,000 for the alleged EPCRA violations.

108. Respondents consents to the issuance of this CAFO and to the payment of the civil penalty cited in paragraph 107.

109. Within thirty (30) days of the effective date of this CAFO, Respondents shall pay the total penalty amount of $100,000 according to the following instructions:

a. Respondents shall pay the CERCLA penalty by submitting a company, bank, cashier's, or certified check, payable to the order of the "EPA Hazardous Substance Superfund," in the amount of $7,000, to:

U.S. Environmental Protection Agency
Superfund Payments
Cincinnati Finance Center
P.O. Box 979076
St. Louis, MP 63197-9000

b. Respondents shall pay the CAA and EPCRA penalties by submitting a company, bank, cashier's, or certified check, payable to the order of the "Treasurer, United States of America," in the amount of $93,000, to:

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

c. Respondents may make payment by electronic funds transfer instead of check, provided the penalty is split up as specified above in subparagraphs (a) and (b) via:

Federal Reserve Bank of New York
ABA = 021030004
Account = 68010727
SWIFT Address = FRNYUS33
33 Liberty Street
New York, NY 10045
Field Tag 4200 of the Fedwire message should read:
"D 68010727 Environmental Protection Agency"

d. Respondents shall include the case name and docket numbers ("*In re. Swan Valley Cheese, LLC and Jonergin Realty, LLC*, Docket Nos. CAA-01-2016-0014, CERCLA-01-2016-0016, EPCRA-01-2016-0015") on the face of each check or wire transfer confirmation. In addition, at the time of payment, Respondents shall simultaneously send notice of the payment and a copy of each check or electronic wire transfer confirmation to:

Wanda I. Santiago
Regional Hearing Clerk (Mail Code ORA 18-1)
U.S. Environmental Protection Agency, Region 1
5 Post Office Square, Suite 100
Boston, MA 02109-3912

and

Catherine Smith
Senior Enforcement Counsel (Mail Code OES 04-04)
U.S. Environmental Protection Agency, Region 1
5 Post Office Square, Suite 100
Boston, MA 02109-3912

110. In the event that any portion of the civil penalty amount described in paragraph 109 is not paid by the required due date, the total penalty amount of $100,000, plus all accrued interest shall become due immediately to the United States upon such failure. Then, interest as calculated in paragraphs 111 and 112 shall continue to accrue on any unpaid amounts until the total amount due has been received by the United States. Respondents shall be liable for such amount regardless of whether EPA has notified Respondents of their failure to pay or made a demand for payment. All payments to the United States under this paragraph shall be made by

company, bank, cashier's, or certified check, or by electronic funds transfer, as described in paragraph 109.

111. **Collection of Unpaid CERCLA/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 CERCLA or 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.

112. **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, Respondents 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 Respondents' 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.

113. The civil penalty under this CAFO and any interest, nonpayment penalties, and other charges described herein shall represent penalties assessed by EPA, and shall not be deductible for purposes of federal taxes. Accordingly, Respondent agrees to treat all payments made pursuant to this CAFO as penalties within the meaning of Section 1.62-21 of the Internal Revenue Code, 26 U.S.C. § 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.

114. This CAFO constitutes a settlement by EPA of all claims for civil penalties pursuant to Section 113(d) of the CAA, Section 109 of CERCLA, and Section 325(c) of EPCRA for the violations alleged herein. Compliance with this CAFO shall not be a defense to any other actions subsequently commenced pursuant to federal laws and regulations administered by EPA for matters not addressed in this CAFO, and it is the responsibility of Respondents to comply with all applicable provisions of federal, state, or local law.

115. This CAFO in no way relieves Respondents or their 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 Respondents in response to conditions which may present an imminent and substantial endangerment to the public health, welfare, or the environment.

116. Nothing in this agreement shall be construed as prohibiting, altering, or in any way limiting the ability of EPA to seek any other remedies or sanctions available by virtue of

Respondents' violation of this CAFO or of the statutes and regulations upon which the Complaint and this CAFO is based, or for Respondents' violation of any applicable provision of law.

117. This CAFO shall not relieve Respondents of their obligation to comply with all applicable provisions of federal, state, or local law; nor shall it be construed to be a ruling on, or determination of, any issue related to any federal, state, or local permit.

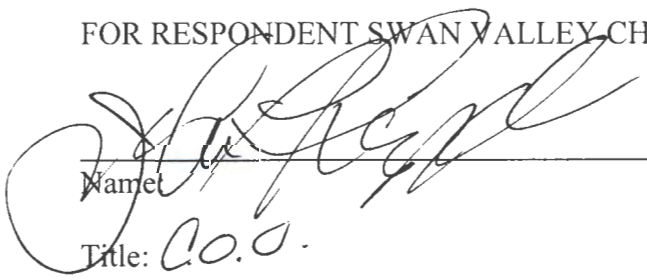
118. The parties shall bear their own costs and fees in this action, including attorney's fees, and specifically waive any right to recover such costs from the other parties pursuant to the Equal Access to Justice Act, 5 U.S.C § 504, or other applicable laws.

119. The terms, conditions, and requirements of this CAFO may not be modified without the written agreement of all parties and approval of the Regional Judicial Officer.

120. In accordance with 40 C.F.R. § 22.31(b), the effective date of this CAFO is the date on which it is filed with the Regional Hearing Clerk.

121. Each undersigned representative of the parties certifies that he is fully authorized by the party responsible to enter into the terms and conditions of this CAFO and to execute and legally bind that party to it.

FOR RESPONDENT SWAN VALLEY CHEESE OF VERMONT, LLC:



Date: Feb. 1, 2016

Name:

Title: C.O.O.

Swan Valley Cheese of Vermont, LLC

FOR RESPONDENT JONERGIN REALTY, LLC:

_____ Date: Feb 1, 2016

Name:

Title: COO

Jonergin Realty, LLC

FOR U.S. ENVIRONMENTAL PROTECTION AGENCY:

Susan Studlien Date: 02/09/2016

Susan Studlien, Director
Office of Environmental Stewardship
U.S. Environmental Protection Agency, Region 1

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**REGION 1**

| | |
|---|---|
| In the matter of<br><br>Swan Valley Cheese of Vermont, LLC and Jonergin Realty, LLC<br><br>11 Jonergin Drive<br>Swanton, VT 05488<br><br>Respondents.<br><br>Proceeding under Section 113(d) of the Clean Air Act, 42 U.S.C. § 7413(d), Section 109(b) of the Comprehensive Environmental Response, Response, Compensation, and Liability Act, 42 U.S.C. § 9609(b), and Section 325(c) of the Emergency Planning and Community Right-to-Know Act, 42 U.S.C. § 11045(c) | Docket Nos.:<br>CAA-01-2016-0014<br>CERCLA-01-2016-0016<br>EPCRA-01-2016-0015 |

## FINAL ORDER

The foregoing Consent Agreement is hereby approved and incorporated by reference into this Final Order. Respondents are hereby ordered to comply with the terms of the above Consent Agreement, which will be effective on the date is filed with the Regional Hearing Clerk.

Date: 3/14/16

H. Curtis Spalding
Regional Administrator
U.S. Environmental Protection Agency, Region 1

## Attachment 1

## Table of General Duty Clause Violations

EPA inspectors and their contractors found several dangerous conditions at the Facility, listed in the table below, that 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 at the time of EPA's Inspections in 2015. The chart also indicates when those standards differ from the standards that were in effect when Swan Valley Cheese restarted the defunct plant in 2011.

| **Dangerous Condition** | **GDC Violation** | **How Condition Could Lead to an Accidental Release or Exacerbate Consequences of a Release** | **Examples of Industry Standards of Care** |
|---|---|---|---|
| Lack of a hazard analysis that identifies hazards posed by the System. | Failure to identify hazards which may result from accidental releases of extremely hazardous substances, using appropriate hazard assessment techniques | 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. | The recommended industry practice and standard of care for ammonia refrigeration systems of this size would be to identify hazards using industry checklists, a What-if analysis, or a Hazard and Operability study. See e.g., the International Institute of Ammonia Refrigeration's ("IIAR's") *Ammonia Refrigeration Management Program*, Section 10;<br><br>EPA's *Guidance for Implementation of the General Duty Clause Clean Air Act Section 112(r)(1),* available at http://www.epa.gov/oem/docs/chem/gdcregionalguidance.pdf; and<br><br>IIAR Bulletin No. 110, *Start-up, Inspection and Maintenance of Ammonia Mechanical Refrigerating Systems*, Section 5.2.1 [The owner shall confirm that a Process Hazard Analysis has been completed and that recommendations have been resolved or implemented.] |
| Inadequate documentation available about the | Failure to identify hazards which may result | These documents provide operators and inspectors with essential understanding of the | IIAR Bulletin No. 109, *Minimum Safety Criteria for a Safe Ammonia Refrigeration System*, [Safety Inspection Checklists]; |

| Dangerous Condition | GDC Violation | How Condition Could Lead to an Accidental Release or Exacerbate Consequences of a Release | Examples of Industry Standards of Care |
|---|---|---|---|
| technology and equipment in the process.<br><br>For example, the failure to have an accurate Piping and Instrumentation Diagram or a basic floor plan makes it very difficult to understand this complicated system. | from accidental releases, using appropriate hazard assessment techniques.<br><br>Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases. | functioning and capacity of the system and the risks that the system poses. They are also essential in ensuring the proper maintenance of the system. Releases are more likely, and their consequences more severe, when there is limited information available for hazard identification and minimization. | IIAR Bulletin No. 110, *Start-up, Inspection and Maintenance of Ammonia Mechanical Refrigerating Systems*, Section 4 [Records]<br><br>IIAR's *Ammonia Refrigeration Manual*, Section 3, including MSDS sheets, documentation of ammonia inventory at facility (e.g., documentation of ammonia charges, ammonia inventory during pump-out conditions, or detailed pipe-by-pipe/vessel-by-vessel inventory calculations); refrigeration flow diagrams; facility plan view (for use with fire department); equipment list for ammonia refrigeration equipment with detailed information about the equipment; desired system operating ranges (document desired system operating ranges for pressure, levels, and temperatures in the system); information re. safety systems (e.g., alarms, compressor cut-outs, and ammonia detection systems); relief system design; ventilation system capacity; Installation, operation, and maintenance manuals; and manufacturers data reports for all pressure vessels) |
| The ice maker, upon which an ammonia-containing vessel rests, has corroded and bulging sides and a potential to collapse. Also, a water line for ice-maker is resting on and weighing down an ammonia pipe.<br><br>In Green Room, process piping is inadequately | Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases. | Inadequate support for ammonia-containing vessels and pipes could cause a collapse of this equipment, leading to a release. | ANSI/ASHRAE 15 (2013), Section 8.10.4 [Refrigerant piping shall be properly isolated and supported to prevent damaging vibration, stress, or corrosion]; Section 8.1 [Foundations and supports for condensing units or compressor units shall be...capable of supporting loads imposed by such units.]<br><br>ANSI/IIAR 2-2008 (Add. B, 2012 ed.), Section 10.4 [re. requirements for piping hangars and supports]<br><br>IIAR Bulletin 110 *Start-up, Inspection and Maintenance of Ammonia Mechanical Refrigerating Systems*, Section 6 [discusses need for inspection various ammonia system components for, among other things, adequate support]<br><br>FM Global Property Loss Prevention Data Sheet 12-61 *Mechanical Refrigeration*, Section 2.2.1.2 [Piping, heat exchangers and other system pressure vessels should be well supported and protected against mechanical and corrosion damage.] |

| Dangerous Condition | GDC Violation | How Condition Could Lead to an Accidental Release or Exacerbate Consequences of a Release | Examples of Industry Standards of Care |
|---|---|---|---|
| supported due to corrosion of piping hangars. | | | |
| Corroding piping, valves, and other system components throughout building and on roof.<br><br>Also, surface corrosion, pitting and flaking was noted on specific pipes and piping components, reducing the useful life of the equipment.<br><br>Many areas of piping have serious metal thinning and loss. | Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases. | Risks release of ammonia from pipes and/or system components if corrosion continues to point of failure. | The industry standard of care calls for a *preventative* maintenance program. See e.g., IIAR's *Ammonia Refrigeration Manual,* Section 5 and Appendix 5.1;<br><br>IIAR Bulletin No. 110, *Startup, Inspection and Maintenance of Ammonia Mechanical Refrigerating Systems,* Section 4.3 [regarding inspection of equipment after being out of use for, among other things, corrosion]; Section 6.6 [Inspection and Maintenance – Valves and Sensing Devices] and Section 6.7 [Inspection and Maintenance – Piping];<br><br>IIAR Bulletin No. 109, *IIAR Minimum Safety Criteria for a Safe Ammonia Refrigeration System,* Sections 4.7.4 and 4.7.5 and inspection checklists [4.7.4 --Uninsulated refrigerant piping should be examined for signs of corrosion. If corrosion exists, the pipe should be cleaned down to bare metal and painted with a rust prevention paint. Badly corroded pipe should be replaced.] [4.7.5 –Insulated piping showing signs of vapor barrier failure should have the insulation removed and the pipe inspected....]; [Inspection checklists have corrosion monitoring question for pressure vessels, heat exchangers, evaporators, condensers, and piping.]<br><br>FM Global Property Loss Prevention Data Sheet 12-61 *Mechanical Refrigeration*, Section 2.2.1.2 [Piping, heat exchangers and other system pressure vessels should be well supported and protected against mechanical and corrosion damage.]<br><br>Section 53.3.1.1 of NFPA 1 (2012 ed.)[1] |

[1] See 53.5.1 and 53.5.3 of NFPA 1 (2006 edition). Citations in the 2012 edition changed considerably from 2006 version, which was applicable in Vermont until 2012.

| Dangerous Condition | GDC Violation | How Condition Could Lead to an Accidental Release or Exacerbate Consequences of a Release | Examples of Industry Standards of Care |
|---|---|---|---|
| Pressure relief valves throughout facility were not tagged, outdated, and improperly maintained. | Failure to design and maintain a safe facility<br><br>Failure to minimize releases that do occur | 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. | IIAR Bulletin 109 Section 4.9.7 [Pressure relief valves releasing to the environment should be replaced or inspected, cleaned, and tested every five years of service]<br><br>IIAR Bulletin 110, Section 6.5.4 [Pressure relief valves shall be replaced at intervals not exceeding five years]; Section 6.6.3, as revised June 19, 2007 [Provides three options for replacing or recertifying pressure relief devices, specifically 1) every five years; 2) as allowable based on in-service relief valve life for specific applications using industry accepted good practices for relief valve; or 3) manufacturer's recommendations on replacement frequency of pressure relief devices shall be followed.]<br><br>ANSI/ASHRAE 15- 2013, Sections 10.1.1, 10.2 [re. testing requirements] |
| There is no fresh air intake to the machinery room that would allow adequate air exchange of the room for ventilation, and the exhaust fan for the machinery room was not working. | Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases.<br><br>Failure to minimize the consequences of releases which do occur. | 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. Also, where an exterior emergency shut off is lacking, the buildup of dangerous levels of toxic/flammable vapors in a machinery room can delay the entry of emergency response personnel to shut off the system, resulting in a prolonged release. | ANSI/ASHRAE 15-2013, *Safety Standard for Refrigeration System,* Section 8.11.4 [Provision shall be made for inlet air to replace that being exhausted. Openings for inlet air shall be positioned to avoid recirculation...]<br><br>ANSI/IIAR 2-2008 (2012 ed.), *Equipment, Design, and Installation of Closed-Circuit Ammonia Mechanical Refrigerating Systems,* Section 13.3.8.1 [Normal mechanical ventilation design capacity shall be the greater of (a) 20 Air Changes per hour (20 ACH) based on the total gross volume of the machinery room. (b) The volume required to limit the room temperature to 104°F (40°C) taking into account the ambient heating effect of all machinery in the room and with the ventilation air entering the room at a 1% ASHRAE design....]; Section 13.3.9.1 [Emergency mechanical ventilation systems shall be capable of providing at least one air change every two minutes, which is 30 air changes per hour (30 ACH) based on the gross machinery room volume.] Section 13.3.9.2 [Emergency mechanical ventilation shall be actuated by (a) A refrigerant detector at a level not exceeding 1,000 ppm; (b) Manual controls.]<br><br>Also see Section 53.2.3.3 of NFPA 1 (2012 ed.) [re. ventilation systems][2] |

[2] Sections 53.10.4 and 53.10.5 of NFPA 1 (2006 edition).

| Dangerous Condition | GDC Violation | How Condition Could Lead to an Accidental Release or Exacerbate Consequences of a Release | Examples of Industry Standards of Care |
|---|---|---|---|
| Broken vapor barriers on pipes throughout facility and on roofing. | Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases. | Vapor barriers protect pipes from moisture, which causes corrosion. Corroded pipes can break, causing an ammonia release. | IIAR Bulletin No. 109, *IIAR Minimum Safety Criteria for a Safe Ammonia Refrigeration System,* Section 4.7.5 [Insulated piping showing signs of vapor barrier failure should have the insulation removed and the pipe inspected....] |
| There were no ammonia detectors in the machinery room and no visual and audible alarms. | Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases.<br><br>Failure to minimize the consequences of releases which do occur. | Ammonia detectors and 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. | ANSI/IIAR 2-2008 (Add. B, 2012 ed.), *Equipment, Design, and Installation of Closed-Circuit Ammonia Mechanical Refrigerating Systems*, Section 13.2 [Each refrigerating machinery room shall contain at least two refrigerant detectors that actuate an alarm and mechanical ventilation.]; Section 13.2.1.2 [The detectors shall activate visual and audible alarms inside the refrigerating machinery room and outside each entrance to the refrigerating machinery room]; Section 13.3.1 [Each refrigerating machinery room shall be vented to the outdoors by means of mechanical ventilation systems actuated automatically by refrigerant detectors...]; Section 13.2.3 [requirements to have detectors activate alarms and emergency mechanical ventilation systems]; Section 13.3.9.2 [Emergency mechanical ventilation shall be actuated by (a) A refrigerant detector at a level not exceeding 1,000 ppm; (b) Manual controls.];<br><br>ANSI/ASHRAE 15-2013, *Safety Standard for Refrigeration System,* Section 8.11.2.1 [Each refrigerating machinery room shall contain a detector located in an area where refrigerant from a leak will concentrate that activates an alarm and mechanical ventilation....The alarm shall annunciate visual and audible alarms inside the refrigerating machinery room and outside each entrance to the refrigerating machinery room.].<br><br>Also see NFPA 1 (2012 ed.) Section 53.2.3.1 [requirement for vapor detectors, monitors and alarm system]; Section 53.2.3.1.4 [emergency shut-off interface requirements, requiring vapor detectors to automatically turn off electrical power at concentrations at or above 25% of LFL][3] |

[3] Sections 53.11, 53.10.2 and 53.10.9 of NFPA-1 2006 edition.

| Dangerous Condition | GDC Violation | How Condition Could Lead to an Accidental Release or Exacerbate Consequences of a Release | Examples of Industry Standards of Care |
|---|---|---|---|
| No remote emergency shutdown controls or ventilation switches outside machinery room door. | Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases.<br><br>Failure to minimize the consequences of releases which do occur. | 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. This is what happened during the February 2015 release. | ANSI/ASHRAE 15-2013, *Safety Standard for Refrigeration Systems,* Section 8.12.i Remote control of the mechanical equipment in the refrigerating machinery room shall be provided immediately outside the machinery room door solely for the purpose of shutting down the equipment in an emergency. Ventilation fans shall be on a separate electrical circuit and have a control switch located immediately outside the machinery room door.];<br><br>ANSI/IIAR 2-2008 (Add. B, 2012 ed.), *Equipment, Design, and Installation of Closed-Circuit Ammonia Mechanical Refrigerating Systems,* Section 13.1.13.2 [A remote emergency shutdown control for refrigerant compressors, refrigerant pumps, and normally closed automatic refrigerant valves within the machinery room, shall be provided immediately outside the designated principle exterior machinery room door...]; Section 13.3.1 [....The mechanical ventilation systems shall be powered independently of the machine room machinery and shall not be subject to emergency shutdown controls.].<br><br>See also NFPA 1 (2012 ed.) Section 53.2.3.1 [requirement for vapor detectors, monitors and alarm system]; Section 53.2.3.1.4 [emergency shut-off interface requirements, requiring vapor detectors to automatically turn off electrical power at concentrations at or above 25% of LFL]; and 53.2.3.1 [requiring emergency ventilation switch right outside machinery room door].[4] |
| Discharge height of the relief header outside the machinery room was less than 15 feet above the roof level. Also, the relief header | Failure to minimize releases that do occur | Improperly placed discharge reliefs can result in ammonia being sprayed on people during a release, further exacerbating the consequences of a release.<br><br>Relief headers that are too narrow and small may not be | ANSI/IIAR 2-2008 (Add. B., 2012 ed.), sections 11.3.2 and 11.3.4 [sizing requirements for relief piping and header]; Sections 11.3.6.3 [requirement to discharge at least 20 feet from window, ventilation intake or personnel exit] and 11.3.6.4 [requirement to discharge to atmosphere at least 15 feet above adjacent roof level]<br><br>ANSI/ASHRAE 15 (2013) Section 9.7.8 [Requires discharge to atmosphere 15 feet above adjoining ground level and not less than 20 feet from window, ventilation opening, or exit. Discharge shall terminate in a manner that will prevent discharged refrigerant from being sprayed on people.]; Section 9.7.8.4 [Sizing requirements – size of discharge pipe |

[4] Sections 53.11, 53.10.2, 53.10.9, and 5.10.5 of NFPA-1 2006 edition.

| Dangerous Condition | GDC Violation | How Condition Could Lead to an Accidental Release or Exacerbate Consequences of a Release | Examples of Industry Standards of Care |
|---|---|---|---|
| appears to be too small. | | able to withstand the pressure of the ammonia being released. | from a pressure relief device or fusible plug shall not be less than the outlet size of the pressure relief device or fusible plug].<br><br>NFPA 1 (2012 ed.) Section 53.2.2.1.2 and 53.2.2.2.1.3 [15 feet discharge to atmosphere requirement plus some other discharge options for ammonia flaring and diffusion systems][5] |
| Failure to have an oil drain system on a pressure vessel that is not self-closing, a manual quick-closing emergency stop valve, or other suitably engineered system | Failure to design and maintain a safe facility so as to prevent releases<br><br>Failure to minimize the consequences of releases which do occur. | The spring loaded valve is intended to immediately close the system in the event of a problem, minimizing a release of ammonia and reducing the likelihood of a catastrophic injury from exposure from ammonia to a mechanic draining oil from the system.<br><br>This was a problem during the February 2015 release. | ANSI/IIAR 2-2008 (Add. B., 2012 ed.), Section 14.2.3 [Oil removal shall be accomplished by one or more of the following: a) A rigid piped oil return system; b) A vessel equipped with an oil drain valve in series with either a self-closing or manual quick-closing emergency stop valve connected to the oil drain point, a vent line isolation valve, and an approved pressure relief device; c) Piping which provides capability for isolation and refrigerant removal to another portion of the system; d) An oil drain valve in series with a self-closing or manual quick closing emergency stop valve; e) any other suitably engineered system.] |
| Exposed electrical wires were observed throughout facility, including the ammonia machinery room. | Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases. | Exacerbates risk of fire or explosion. Ammonia is flammable at certain concentrations. | ANSI/IIAR 2-2008 (Add. B., 2012 ed.), *Equipment, Design, and Installation of Closed-Circuit Ammonia Mechanical Refrigerating Systems*, Section 13.1.3.1 [Flammable and combustible materials shall not be stored in machinery rooms.]; Section 13.1.7 Electrical Safety [requires wiring to be installed in accordance with the National Electrical Code];<br><br>NFPA 1 (2012 ed.), Section 53.3.1.3.1 [Flammable and combustible materials shall not be stored in the refrigeration machinery rooms except for incidental materials necessary for the safe and proper operation and maintenance of the system.][6] |

[5] Section 53.8.3.2 of NFPA 1-2006 edition.

[6] Section 53.10.7, 53.12, and 53.10.8.2 of NFPA-1 (2006 edition). Note that NFPA 1 (2006 ed.) has different provisions than the 2012 edition for electrical safety, but the restriction on storage of flammable or combustible materials is the same as in the 2012 edition.

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| There were also combustible materials stored in the machinery room. | Failure to minimize the consequences of releases which do occur. | | IIAR Bulletin 109 *Minimum Safety Criteria for a Safe Refrigeration System*, General Safety checklist, item (x) [Covers should be fastened to all electrical panels and junction boxes). |
| Extra cylinders of ammonia were present in the machinery room. | Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases.<br><br>Failure to minimize the consequences of releases which do occur. | Exacerbates a risk of ammonia release should a fire occur in the facility. Also there are NO ammonia detectors where the ammonia cylinders are stored. Possible severe injuries may occur if ammonia cylinders leak. | IIAR Bulletin 109 *Minimum Safety Criteria for a Safe Refrigeration System*, Section 4.10.14 [There shall be no ammonia cylinders with temporary or permanent connections to the system unless actual transfer of ammonia is being conducted by suitably qualified individuals.]<br><br>ANSI/IIAR 2-2008 (Add. B, 2012 ed.), *Equipment, Design, and Installation of Closed-Circuit Ammonia Mechanical Refrigerating Systems*, Section 13.1.3.1 [Flammable and combustible materials shall not be stored in machinery rooms.] |
| The machinery room door was not adequately labeled to warn of the hazards of entering a room with ammonia-containing machinery.<br><br>Nor was the door locked, risking entry by | Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases.<br><br>Failure to minimize the consequences of | Increases the chance of inadvertent exposure to ammonia releases and could frustrate effort to react quickly and properly during an ammonia release. Signs and posted information provide a level of protection in addition to worker training and operating procedures. | ANSI/IIAR 2-2008 (Add. B., 2012 ed.), *Equipment, Design, and Installation of Closed-Circuit Ammonia Mechanical Refrigerating Systems,* Section 13.1.10: In section entitled, "Entrances and Exits" is a requirement that refrigerating systems shall be provided with approved informative signs, emergency signs, charts and labels in accordance with NFPA 704. Hazard signs shall be in accordance with International Mechanical Code. Also see Section 13.1.2.4 (signs restricting entry to authorized personnel), Section 13.2.4.1 (signs with meaning of alarms); and Appendix L (examples of recommended machinery room door signage);<br><br>ANSI/ASHRAE 15-2013, *Safety Standard for Refrigeration Systems*, Sections 8.11.2.1 (signs with meaning of alarms); 8.11.8 (signs restricting entry to authorized personnel); 11.2.4 (same); 11.7 (posted emergency shutdown procedures); |

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| unauthorized people. | releases which do occur. | | Section 53.2.4 of NFPA 1 (2012 ed.) (signs and labels)[7] |
| Failure to have a legible, permanent sign securely attached and easily accessible in any location on the ammonia refrigeration system displaying the following information:<br>a) Name and address of the installer<br>b) The refrigerant number and the amount of refrigerant in the system<br>c) The lubricant identity and amount<br>d) The field test pressure(s) applied | Failure to design and maintain a safe facility | Information provides critical information to those who are maintaining system. | IIAR Bulletin 109, Section 4.10.4<br>IIAR Bulletin 109, general safety checklist item (i)<br>ANSI/ASHRAE 15-2013, Section 11.2.1<br>NFPA 1-2012, Section 53.2.4.1 (signage requirements include most, but not all, of the required information listed in column 1 of this table)[8] |

[7] See 53.14 of NFPA 1 (2006 edition) and Section 53.19 of NFPA 1 (2006 edition) regarding storage of refrigerants, which references other applicable chapters of NFPA 1, which in turn would include 60.1.2.11.2.1 (hazard identification signs).

[8] Section 53.14 in NFPA 1 (2006 ed.)

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| The door into the ammonia machinery room, where the high pressure receiver (HPR) was located, was not tight-fitting and gasketed. In addition, the door opened into the room (should open out), and was not self-closing. | Failure to minimize the consequences of releases which do occur. | In the event of an ammonia release inside the machinery room, the failure to have a tight-fitting and self-closing door risks the spread of ammonia vapors outside the room. Also, it is more difficult for employees to escape the room when the door opens into the room rather than out. | ANSI/IIAR 2-2008 (Add. B., 2012 ed.), *Equipment, Design, and Installation of Closed-Circuit Ammonia Mechanical Refrigerating Systems*, Section 13.1.10 [Each refrigerating machinery room shall have a tight-fitting door or doors opening outward, self-closing if they open into the building, and adequate in number to ensure freedom for persons to escape in an emergency—doors communicating with the building shall be approved, self-closing, tight-fitting fire doors equipped with panic-type hardware—the refrigerating machinery room shall have a door that opens directly to the outside air or through a vestibule equipped with self-closing, tight-fitting doors equipped with panic-type hardware];<br><br>IIAR Bulletin No. 112, *Ammonia Machinery Room Design*, Section 4.2.1(b) [A minimum of two (2) exits must be provided from the machinery room, and all exits shall be in compliance with all federal, state and local codes and regulations—exit doors shall swing outward, be equipped with panic-type hardware, and shall not be locked while machinery room is occupied—doors shall be tight-fitting, and self-closing.];<br><br>ANSI/ASHRAE 15-2013, *Safety Standard for Refrigeration System,* Section 8.12.d. [The refrigerating machinery room shall have a door that opens directly to the outdoors or through a vestibule equipped with self-closing, tight-fitting doors.]; 8.11.2 [Each refrigeration machinery room door shall be have a tight-fitting door or doors opening outward, self-closing if they open to the building and adequate in number to ensure freedom for persons to escape in an emergency. With the exception of access doors and panels in air ducts and air handling units...there shall be no openings that will permit passage of escaping refrigerant to other parts of the building.]; Section 8.12.3 [Doors communicating with the building shall be approved, self-closing, tight-fitting doors.] |
| Inadequate training program (and training documentation) for safely operating, maintaining, and responding to | Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases. | Inadequately trained operators may manage refrigeration systems unsafely, which could lead to a release that injures the operator, other employees, and people off-site. Also, inadequately trained employees | IIAR Bulletin No. 109, *Minimum Safety Criteria for a Safe Ammonia Refrigeration System*, Section 5.1 [Each plant should have an owner's appointed representative responsible for compliance with all refrigeration safety requirements.];<br><br>IIAR Bulletin No. 110, *Start-up, Inspection and Maintenance of Ammonia Mechanical Refrigerating Systems*, Section 5.2.3 [Training] |

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| releases from the System.<br><br>Also, areas outside the ammonia machinery room were occupied by employees who are not trained on the hazards of ammonia refrigeration systems. | Failure to minimize the consequences of releases which do occur. | may not be able to respond safely during a release, thereby making the consequences of a release more dangerous.<br><br>This was a problem during the February 2015 release. | IIAR's *Ammonia Refrigeration Manual,* Section 2 [Management System], Section 9 [Training Program];<br><br>29 C.F.R. § 1910.1200 [requiring all employees to be trained about any operations in their work areas where hazardous chemicals are present] |
| The machinery room walls contained holes and gaps for piping and conduit that were not sealed from other spaces in the building. | Failure to minimize the consequences of releases which do occur. | Allows release of ammonia inside the machinery room to spread to other parts of the building, putting employees and responders at risk. | ANSI/ASHRAE-15(2013), Sections 8.11.2 [...With the exception of access doors and panels in air ducts and air handling units...there shall be no openings that will permit passage of escaping refrigerant to other parts of the building.]; 8.11.7 [there shall be no air flow to or from an occupied space through a machinery room unless the air is ducted and sealed in a manner to prevent any refrigerant leakage from entering the airstream]; and 8.12(f) [All pipes piercing the interior walls, ceiling, or floor of such rooms shall be tightly sealed...]<br><br>ANSI/IIAR 2-2008 (Add. B, 2012 ed.), Section 13.1.1.3 [Walls, floor, and ceiling shall be tight and of non-combustible construction – with exception from non-combustible construction requirement for buildings equipped with automatic sprinkler system]; Section 13.1.5.2 [All pipes piercing the interior walls, ceiling, or floor of machinery rooms shall be tightly sealed to the walls, ceiling, or floors through which they pass.]<br><br>ANSI/ASHRAE 15-2013, *Safety Standard for Refrigeration System,* Section 8.12.f. [All pipes piercing the interior walls, ceiling, or floor of machinery rooms shall be tightly sealed to the walls, ceiling, or floors through which they pass.] |

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| The piping and valves are not labeled to indicate contents, direction of flow, physical state (i.e., liquid or vapor), pressure level (i.e., high or low), and there are no distinctive component markers for other system equipment (e.g., receivers, accumulator, etc.). | Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases.<br><br>Failure to minimize the consequences of releases which do occur. | 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. | IIAR Bulletin No. 109, *IIAR Minimum Safety Criteria for a Safe Ammonia Refrigeration System,* Section 4.7.6 [All ammonia piping should have appropriate pipe markers attached to indicate the use of the pipe and arrows to indicate the direction of flow, such as in IIAR Bulletin No. 114...];<br><br>IIAR Bulletin No. 114, *Identification of Ammonia Refrigeration Piping and System Components*;<br><br>ANSI/IIAR 2-2008 (Add. B, 2012 ed.), *Equipment, Design, and Installation of Closed-Circuit Ammonia Mechanical Refrigerating Systems*, Section 10.6 [All piping mains, headers and branches shall be identified as to the physical state of the refrigerant (that is, vapor, liquid, etc.), the relative pressure level of the refrigerant, and the direction of flow. The identification system used shall either be one established as a standard by a recognized code or standards body or one described and documented by the facility owner.][9]<br><br>IIAR's *Ammonia Refrigeration Manual,* Section 4.2; |
| Main shut-off valve (King Valve) for receiver is not identified with a prominent sign. The system does not include remote shutdown and isolation capability. | Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases.<br><br>Failure to minimize the consequences of releases which do occur. | See above re. labeling of valves.<br><br>Also, 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. | IIAR Bulletin No. 109, *IIAR Minimum Safety Criteria for a Safe Ammonia Refrigeration System,* Section 4.10.3 [The main shut-off valve(s) (king valve(s)); hot gas defrost line main shut-off valve; and $NH_3$ pump liquid main shut-off valve(s) and/or disconnects; of the ammonia system should be readily accessible and identified with a prominent sign having letters sufficiently large to be easily read.];<br><br>ANSI/ASHRAE 15-2013, *Safety Standard for Refrigeration Systems*, Section 11.2.2 [signage requirements for valves]<br><br>See additional standards and guidance listed above for failure to have remote shutdown capability. |

[9] This particular requirement was in Section 10.5 of the 2010 edition.

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| The company did not have tags or other documentation for pressure relief valves (PRVs) showing date of installation and when they had been last inspected.<br><br>Moreover, pressure relief valves were not replaced or inspected, cleaned and tested every five years. | Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases. | Makes it very difficult to judge whether valves are still functional. Pressure relief valves should be replaced or recalibrated every five years to ensure that they will function properly. Old pressure relief valves can release ammonia. | ANSI/ASHRAE-15 (2013), Sections 10.1.1 and 10.2 [testing and declaration of test procedures applicable after complete installation and before operation]<br><br>IIAR Bulletin 109, Section 4.9.7 [pressure relief valves discharging to atmosphere should be replaced every five years of service];<br>IIAR Bulletin 110 [June 19, 2007 revision of 6.6.3 re. replacement and recalibration of pressure relief valves];<br><br>ANSI/IIAR 2-2008 (Add. B 2012 ed.), Section 12.2 |
| The facility does not have PRV sizing calculations to demonstrate that the valves installed on the System meet the capacity requirements within ammonia refrigeration design standards. | Failure to design and maintain a safe facility | Inadequately sized pressure relief valves and header could result in a catastrophic pressure buildup and/or uncontrolled release of ammonia. | ANSI/ASHRAE-15 (2013), Sections 9.7.5, 9.7.6, and 9.7.7 (re. minimum discharge capacity for pressure relief devices)<br><br>ANSI/IIAR 2-2008 (Add. B, 2012 ed.), Sections 11.2.7, 11.2.8 and 11.2.9 (requirements for discharge capacity) |

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| Failure to provide a clear and unobstructed approach and space to refrigeration machinery for inspection, service, and emergency shutdown with adequate clearances for maintenance of equipment.<br><br>Also, some rooms were particularly dark, making it difficult to see and inspect equipment –particularly equipment imbedded in ceiling. | Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases.<br><br>Failure to minimize the consequences of releases which do occur. | 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. | ANSI/IIAR 2-2008 (Add. B, 2012 ed.), Section 13.1.2.2 [Requires a clear and unobstructed approach and space to refrigeration machinery for inspection, service, and emergency shutdown with adequate clearances for maintenance of equipment.]<br><br>ANSI/ASHRAE 15 (2013), Sections 8.3 [A clear and unobstructed approach and space shall be provided for inspection, service and emergency shutdown of condensing units, compressor units, condensers, stop valves, and other serviceable components of refrigerating machinery], Section 9.12.1 [All serviceable components of refrigerating systems shall be provided with safe access.] |
| Failure to protect the liquid level gauge glass column from damage. | Failure to design and maintain a safe facility taking such steps as are necessary | Liquid level gauge column was located such that it could be inadvertently damaged or struck, risking release of ammonia. | ANSI/IIAR 2-2008 (Add. B, 2012 ed.), Section 12.1.1 [All visual liquid indicators used to observe the refrigerant level...shall be installed in such a manner that they are protected from physical damage.]<br>ANSI/ASHRAE 15 (2013), Sections 9.11.2 [Liquid level glass gage columns shall have automatic shutoff valves. All such glass columns shall be protected against external damage and properly supported. *Note exception for liquid level gage glasses of the bulls-eye type.*]; Section 11.1 [Means shall be taken to adequately safeguard piping, controls |

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| | to prevent releases. | | and other refrigeration equipment to minimize possible accidental damage or rupture due to external sources.] |
| There was excessive ice buildup on refrigeration piping and components in the Cooler Rooms and ammonia refrigeration room. | Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases. | Ice buildup can weigh down piping, risking collapse and ammonia release. It also exposes pipes to moisture, which can cause corrosion and pipe failure. | ANSI/IIAR 2-2008 (Add. B, 2012 ed.), Section 10.4.1 [Piping hangars and supports shall carry the weight of the piping, as well as any other anticipated loads. Example: refrigerant weight, insulation, **frost/ice,** seismic/wind loads, personnel, etc.]<br><br>IIAR Bulletin 109, Section 4.10.7 [Ice formations that could endanger refrigerant piping or other components should be removed and the condition(s) that caused the ice build-up corrected.]; General safety checklist, item(s)<br>ANSI/ASHRAE 15 (2013), Section 11.6 [Refrigerating systems shall be maintained by the user in a clean condition, free from accumulations of oily dirt, waste, and other debris, and shall be kept accessible at all times.]<br>IIAR Bulletin 110, Section 6.7 [re. piping maintenance] |
| Failure to have pressure relief device discharge to the outdoors (on accumulator in ammonia machinery room) | Failure to minimize the consequences of releases which do occur. | Allows ammonia releases to discharge in spaces where employees might be working, risking serious injury. | IIAR 2-2008 (2012 ed.) § 11.3.6 [Discharge from all atmospheric pressure relief valves **shall be to the outdoors,** not less than 20 feet from any window, ventilation intake, or personnel exit, and not less than 15 feet above the adjacent grade or roof level.];<br>ANSI/ASHRAE 15 (2013), Section 9.7.8 [discharge to atmosphere 15 feet above adjoining ground level and not less than 20 feet from window, ventilation opening or exit. Discharge shall terminate in a manner that will prevent discharged refrigerant from being sprayed on people.] |
| Failure to safeguard piping, valves, and other system components adequately from accidental damage | Failure to design and maintain a safe facility taking such steps as are necessary | Risks ammonia release from accidental damage to system components. | ANSI/ASHRAE 15 (2013), Section 11.1 [Means shall be taken to adequately safeguard piping, controls and other refrigeration equipment to minimize possible accidental damage or rupture due to external sources.] |

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| or rupture by external sources | to prevent releases. | | |
| The facility has more than 500 lbs. of anhydrous ammonia and has not submitted information about its storage of the chemical to the fire department. | Failure to minimize releases that do occur.<br><br>Also an EPCRA violation. | Lack of coordination with fire department and other emergency responders may impede proper emergency response. | 40 C.F.R. § 370.10 |
| No standard operating procedures available. | Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases. | Without standard operating procedures, employees may not be consistent about operating the System's equipment safely, increasing the chance of a release. | IIAR Bulletin No. 110 *Startup, Inspection and Maintenance of Ammonia Mechanical Refrigerating Systems,* Section 5.2.2 [Confirm that the operating procedures are complete and address steps for each operating phase. Ensure that the operating procedures include operating limits, safety and health considerations, and safety systems and their functions....]<br><br>IIAR's *Ammonia Refrigeration Management Program*, Section 4 [Describes purpose of standard operating procedures as providing concise and realistic descriptions of the procedures needed to operate equipment, and manage normal and abnormal situations.]; |
| No documented mechanical integrity program in place for the ammonia refrigeration system. | Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases. | Lack of equipment inspection and maintenance can create risk of equipment breakdown, leading to a release. | IIAR Bulletin No. 110, *Start-Up, Inspection and Maintenance of Ammonia Mechanical Refrigerating Systems*, Section 6.0 [For any particular refrigerating system, the inspection and maintenance program shall account for specific recommendations for the equipment comprising that system, found in the supplier's instructions manual and relevant supplementary information. The type and frequency of inspection and maintenance will also depend on the effectiveness of previous maintenance, the age of the system, the environment in which the system is located and the duty of the system.]; |

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| | | | IIAR Bulletin 109, *Minimum Safety Criteria for a Safe Refrigeration System*, checklists and Section 5;<br><br>IIAR's *Ammonia Refrigeration Management Program* Section 5, which recommends documenting regular inspections; and<br><br>Section 53.3.2 of NFPA 1 (2012 ed.) [testing of equipment]; Section 53.3.1.1 [Refrigerating 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.][10] |
| Inadequate emergency action plan. | Failure to minimize the consequences of releases which do occur. | Can impede a swift, safe emergency response and thus increase risks to workers, emergency responders and people off-site. | IIAR's *Ammonia Refrigeration Management Program* Section 7 (2005): Refrigeration facilities should develop an up-to-date, facility-specific emergency action 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 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 all relevant off-site emergency responders. See also EPA's *Guidance for Implementation of the General Duty Clause Clean Air Act Section 112(r)(1)*, available at http://www.epa.gov/oem/docs/chem/gdcregionalguidance.pdf |

[10] See NFPA 1 (2006 ed.) Section 53.15 (testing of equipment) and Section 53.5 (installation and maintenance requirements).