UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1 – NEW ENGLAND

IN THE MATTER OF Cold Storage Solutions II, Inc. 220 Kenneth Welch Drive Lakeville, MA 02347 Proceeding under Sections 113 and 114 of the Clean Air Act	)	**NOTICE OF VIOLATION, ADMINISTRATIVE ORDER, AND REPORTING REQUIREMENT**

INTRODUCTION

1. The United States Environmental Protection Agency Region 1 ("EPA") issues this Notice of Violation, Administrative Order, and Reporting Requirement ("NOV," "AO," and "RR") to Cold Storage Solutions II, Inc. ("CSSII" or "Respondent"), for Respondent's failure to comply with Section 112(r)(1) of the Clean Air Act ("CAA" or "the Act"), 42 U.S.C. § 7412(r)(1), in the handling of ammonia at the company's Lakeville, Massachusetts cold storage warehouse.

STATUTORY AND REGULATORY AUTHORITY

2. The NOV and AO are issued under the authority of Section 113 of the CAA, 42 U.S.C. § 7413. Section 113(a)(3) of the Act, 42 U.S.C. § 7413(a)(3), provides that EPA may issue an order requiring compliance with the requirements or prohibitions of Subchapter I of the Act (which include, among other requirements, the requirements of Section 112(r), 42 U.S.C. § 7412(r)). A copy of the order must be sent to the relevant State air pollution control agency. An order relating to a violation of Section 112 of the CAA can take effect immediately upon issuance.

3. The RR is issued under the authority of Section 114 of the CAA, 42 U.S.C. § 7414. Section 114(a)(1), 42 U.S.C. § 7414(a)(1), authorizes EPA to require a company to submit such information and conduct such reporting or auditing as EPA may reasonably require to determine compliance with the CAA and carry out the purposes of the CAA.

4. 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 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 that do occur. This section of the CAA is referred to as the "General Duty Clause."

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

GENERAL ALLEGATIONS

6. Respondent CSSII operates a cold food storage warehouse at 220 Kenneth Welch Drive in Lakeville, Massachusetts (the "Facility").

7. The Facility is near a railway line, within a third of a mile of Interstate Route 495, and within 1.5 miles of the downtown of neighboring Middleborough, two elementary schools, and a supermarket.

8. CSSII is a domestic corporation organized under the laws of Massachusetts, with its principal office located in Lakeville, Massachusetts. As a corporation,

Respondent is a "person" within the meaning of Section 302(e) of the Act, 42 U.S.C. § 7602(e), against whom an Administrative Order may be issued under Section 113(a)(3) of the Act, 42 U.S.C. § 7413(a)(3).

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

10. At all times relevant to the violations alleged herein, Respondent was the "owner or operator" of the Facility, as defined at Section 112(a)(9) of the CAA, 42 U.S.C. § 7412(a)(9).

11. According to delivery receipts obtained from the Occupational Health and Safety Administration, Respondent's refrigeration system uses approximately 7,000 pounds of anhydrous ammonia. Accordingly, Respondent "stores" and "handles" anhydrous ammonia, which, as indicated in Paragraph 5 above, is an "extremely hazardous substance" subject to the General Duty Clause.

12. Ammonia presents a significant health hazard because it is corrosive to the skin, eyes, and lungs. Exposure to 300 parts per million is immediately dangerous to life and health. Ammonia is also flammable at concentrations of approximately 15% to 28% by volume in air. It can explode if released in an enclosed space with a source of ignition present, or if a vessel containing anhydrous ammonia is exposed to fire. In light of the potential hazards posed by the mishandling of anhydrous ammonia, industry trade associations have issued standards outlining the Recognized and Generally Accepted Good Engineering Practices in the ammonia refrigeration industry. In collaboration with the American National Standards Institute, the International Institute of Ammonia

Refrigeration has issued (and updates) "Standard 2: Equipment, Design, and Installation of Closed-Circuit Ammonia Mechanical Refrigerating Systems," along with other applicable standards and guidance. Also in collaboration with the American National Standards Institute, the American Society of Heating, Refrigerating and Air-Conditioning Engineers has issued (and updates) "Standard 15: Safety Standard for Refrigeration Systems." These standards are consistently relied upon by refrigeration experts and are sometimes incorporated into state building and mechanical codes.

13. The Facility's ammonia refrigeration system ("System") was installed in 2007. The System is a "closed-loop" refrigeration system with components and piping in three connected areas of the Facility: the Machinery Room, where most of the System equipment is located (including the compressors and the recirculator) and which has two Access Doors (from the building exterior and from the Loading Dock), an area exterior to the building where the receiver, condenser, and piping is located, and the freezer warehouse spaces, where the evaporator(s) and associated piping are located.

14. On February 13, 2012, EPA inspectors visited the Facility ("Inspection") to assess Respondent's compliance with Section 112(r) of the CAA and with Sections 302–312 of the Emergency Planning and Community Right-to-Know Act ("EPCRA").

15. During the Inspection of this Facility and three related facilities, EPA requested and received certain documentation pertaining to the System, including the Facility's emergency response plan. Respondent provided EPA with a document titled, "Anhydrous Ammonia Emergency Response Plan for Cold Storage Solutions," dated June 19, 2009 ("Plan").

16. EPA later received copies of EPCRA "Tier 2" forms that CSSII first submitted to the relevant emergency response organizations after the Inspection.

17. The Inspection and EPA's review of subsequently submitted information revealed that Respondent:

a. Had not conducted an adequate hazard analysis of the System, using appropriate hazard assessment techniques;

b. Did not have, or have available for EPA review, critical documents and information about the System that would allow Respondent to adequately identify hazards posed by the System and to maintain its equipment. For example, EPA requested, but Respondent failed to provide, a refrigeration process flow diagram, a Piping and Instrumentation Diagram, any other engineering diagrams, and information and calculations regarding the ammonia charge for the System, the alarm trigger levels, and the ventilation capacity of the Machinery Room;

c. Had not developed sufficient written operating procedures to govern the proper operation of the System and each of its components;

d. Had not designed, installed, and operated an adequate ventilation system, ensuring that the Machinery Room had sufficient air sweep to clear it of ammonia fumes in case of emergency, by not providing for automatic activation of the ventilation system by the ammonia detectors, and by not adequately locating the exhaust outlet. There were no fresh air inlet vent openings aside from an opening in the ceiling above the ammonia recirculator through which pipes passed to and from the freezer, the location of which, in

relation to the location of the exhaust fan, cannot provide adequate vertical or horizontal flow through the room. The exhaust fan was only operable manually and not automatically by ammonia detectors and a thermostat. Also, the exhaust outlet was located on a side wall of the room rather than positioned so it discharged vertically, and it was less than twenty feet from the exterior Access Door;

e. Had not designed and operated an Machinery Room that could be isolated if necessary, in that the pipes above the ammonia recirculator passed through a hole in the ceiling that was not sealed so as to be air-tight;

f. Had not posted adequate ammonia warning signs and signs restricting entry to authorized personnel at each entrance to the Machinery Room, nor signs displaying a diagram and other information about the System's capacity, operation, alarms, and emergency shutdown process, near the compressor or outside either of the two Machinery Room doors. The lone ammonia warning sign at the Facility was affixed to the roll-up Access Door from the Loading Dock, so it raises several feet above natural sightline when the door is open. Further, the evacuation route map posted at the Facility was inaccurate, in that it omitted the door between the Loading Dock and the Machinery Room;

g. Had not provided display panels for the Machinery Room and freezer ammonia analyzers that indicate the operational status of the System outside either Machinery Room door;

h. Had not kept the Machinery Room free of flammable and combustible material, in that a drum of oil and cardboard, polymer foam, and wood materials were being stored within it;

i. Had not maintained unobstructed access to the fire sprinkler controls and shutoff valves, which were partially blocked by extraneous materials being stored in front of them;

j. Had not ensured that all components and piping were protected from forklift traffic or other potential impact;

k. Did not have an eyewash and shower station inside and just outside of the Machinery Room and did not have the necessary personal protective equipment to help protect employees in case of ammonia exposure or other emergency;

l. Did not have windsocks on the roof to assist emergency responders or evacuating personnel in the event of a release at the Facility;

m. Did not have lock-out/tag-out status indications on an out-of-service ammonia pump or corresponding power switch;

n. Had not maintained the paint on the condenser support structure to prevent corrosion or provided a "confined space" sign on either of the condenser's two access doors;

o. Had not installed the receiver or condenser relief valve discharges in a safe location;

p. Had not installed the main pressure-relief vent pipe in a safe manner. The vent pipe opening was located just above the roof level. Further, it was aimed

downwards instead of upwards, and it was situated to vent in the general vicinity of the Machinery Room Access Door;

q. Had not equipped the ammonia detectors to actuate visual and audible alarms at each Machinery Room entrance;

r. Had not provided a switch controlling the emergency ventilation system or markings identifying the function or status of the key-operated emergency shutdown control outside the exterior Machinery Room door;

s. Had not labeled the King Valve on the ammonia receiver and did not have a handle on the King Valve;

t. Had not developed an adequate emergency response program, including an up-to-date and accurate emergency action plan that addressed release scenarios based on hazards associated with the design, location, and operation of the Facility. For example, the emergency plan provided to EPA ("Plan") was drafted for another company's operations and only partially updated to reflect the specific conditions at the Facility. The Plan erroneously includes several references to itself as being the emergency plan for the company "American Refrigeration." The Plan also severely undercounts the size of surrounding population (estimating the population within three miles to be 2,500 while EPA estimates indicate it is over 16,000) and neglects to include contact information for officials from the neighboring town of Middleborough even though the Facility is located near its populous downtown. The Plan also references an evacuation route plan that was not attached. Additionally, Respondent's failure to submit EPCRA Tier II forms deprived emergency

responders of information about the Facility, including the quantity of ammonia in the System and the location of critical equipment and shutoff mechanisms, which would compromise their ability to safely respond to an emergency at the Facility.

NOTICE OF VIOLATIONS

I. FAILURE TO IDENTIFY HAZARDS

18. The allegations in Paragraphs 1 through 17 are hereby realleged and incorporated herein by reference.

19. Pursuant to the General Duty Clause, Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1), owners and operators of stationary sources producing, processing, handling, or storing extremely hazardous substances have a general duty to identify hazards that may result from accidental releases of such substances, using appropriate hazard assessment techniques. The recommended industry practice and standard of care for indentifying, analyzing, and evaluating potential hazards associated with ammonia refrigeration systems of this size is to use standard, industry-developed checklists, a "What If" analysis, or a Hazard and Operability study. See, e.g., Int'l Inst. of Ammonia Refrigeration, Ammonia Refrigeration Management Program § 10 (2005) [hereinafter, "IIAR ARM"] (recommending formal hazard reviews and describing methods); U.S. Envtl. Prot. Agency, Guidance for Implementation of the General Duty Clause Clean Air Act Section 112(r)(1) § 2.3.1 (2000) [hereinafter "EPA GDC Guidance"] (same), available at http://www.epa.gov/oem/docs/chem/gdcregionalguidance.pdf (last checked Feb. 6, 2013).

20. As described in Paragraph 17 above, inspectors observed potentially dangerous conditions and management practices at the Facility, including Respondent's failure to possess basic documentation and information about the System, its unsafe Facility design (including the lack of marked emergency ventilation and shutdown switches and the dangerous positioning of the exhaust fan and pressure-relief discharge), its failure to post critical information on and about the System to facilitate a quick response to releases, and its failure to develop an adequate emergency response plan that accurately reflected conditions at, and potential hazards posed by, the Facility. These deficiencies indicate a failure to adequately identify hazards associated with the release of ammonia at the Facility.

21. By failing to conduct an adequate hazard analysis of the System using appropriate hazard assessment techniques, Respondent failed to identify hazards that may result from accidental releases, as required by the General Duty Clause, Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1).

II. FAILURE TO DESIGN AND MAINTAIN A SAFE FACILITY

22. The allegations in Paragraphs 1 through 21 are hereby realleged and incorporated herein by reference.

23. 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 also have a general duty to design and maintain a safe facility, taking such steps as are necessary to prevent releases.

Lack of Refrigeration System Documentation

24. As described in Paragraph 17(b), above, Respondent did not have critical information about the System, its components, and their operation that would allow Respondent to adequately maintain and inspect the System equipment. The recommended industry practice and standard of care for ammonia refrigeration systems of this size is to maintain this, and more, refrigeration system documentation, to help personnel identify hazards posed by the system and to safely maintain the system. See, e.g., IIAR ARM, supra, §§ 3.3 (ammonia inventory documents), 3.4 (flow diagrams), 3.10 (ventilation capacity); Int'l Inst. of Ammonia Refrigeration, Bulletin No. 110: Start-up, Inspection and Maintenance of Ammonia Mechanical Refrigerating Systems §§ 4 (1993) [hereinafter "IIAR Bull. 110"] (recommending retention of "[a]ll essential records relevant to the system…," including piping and instrumentation diagrams, other types of engineering diagrams, and refrigeration circuit and ventilation flow diagrams), 5.6 (total refrigerant charge).

Inadequate Ventilation System Design and Operation

25. As described in Paragraph 17(d), above, Respondent had not designed, installed, and operated an adequate ventilation system, including the failure to have sufficient air sweep in the Machinery Room to clear it of ammonia fumes in case of emergency. The recommended industry practice and standard of care for ammonia refrigeration systems of this size includes designing and installing a ventilation system based on calculations and other analysis of the ammonia system and Machinery Room to determine the air sweep necessary for safe operation in normal conditions and to clear ammonia fumes in case of emergency. See, e.g., Am. Nat'l Standards Inst./Am. Soc'y of Heating,

Refrigerating and Air-Conditioning Eng'rs, Standard 15-2007: Safety Standard for Refrigeration Systems § 8.11.5 (2007) [hereinafter "ASHRAE 15-2007"]; Am. Nat'l Standards Inst./Int'l Inst. of Ammonia Refrigeration, Standard 2-1999: Equipment, Design, and Installation of Ammonia Mechanical Refrigerating Systems §§ 6.2.3.3 & 6.2.3.4 (1999) [hereinafter "IIAR 2-1999"] (normal and emergency ventilation capacities). The fresh air inlet openings should be near the machinery, should provide for vertical and horizontal sweep across the Machinery Room, and should be sufficient to allow the inlet air to replace that exhausted. See, e.g., ASHRAE 15-2007, supra, § 8.11.4; IIAR 2-1999, supra, § 6.2.3.7.

26. Also as described in Paragraph 17(d), above, Respondent failed to provide for automatic activation of the ventilation system in case of emergency. The recommended industry practice and standard of care for ammonia refrigeration systems of this size is to provide for not only manual activation of the ventilation system, but also automatic activation by refrigerant detectors and temperature sensors. Standard 2-2008: Equipment, Design, and Installation of Closed-Circuit Ammonia Mechanical Refrigerating Systems §§ 13.3.1, 13.3.8.3, 13.3.9.2 (2010 ed.) [hereinafter "IIAR 2-2008 (2010 ed.)"]; Am. Nat'l Standards Inst./Am. Soc'y of Heating, Refrigerating and Air-Conditioning Eng'rs, Standard 15-2010: Safety Standard for Refrigeration Systems § 8.11.2.1 (2010) [hereinafter "ASHRAE 15-2010"].

27. Additionally, as also described in Paragraph 17(d), above, Respondent failed to adequately locate the Machinery Room exhaust fan. The recommended industry practice and standard of care for ammonia refrigeration systems of this size is to ensure that the

exhaust fan discharges air so as to provide good dispersion and not cause danger. See, e.g., ASHRAE 15-2007, supra, § 8.11.4; IIAR 2-1999, supra, §§ 6.2.3.11 & .12.

28. Also, as described in Paragraph 17(e), above, Respondent failed to ensure that the Machinery Room was designed to be air-tight, in that the pipes above the ammonia recirculator passed through a hole in the ceiling. The recommended industry practice and standard of care for ammonia refrigeration systems of this size is to ensure any piping that pierces the ceiling is tightly sealed to the ceiling through which it passes. See, e.g., ASHRAE 15-2007, supra, § 8.12(f); IIAR 2-1999, supra, § 6.3.1.10.

Inadequate Signs

29. As described above in Paragraph 17(f), at the time of the Inspection, Respondent did not have sufficient signs to adequately identify many aspects of the Facility. The recommended industry practice and standard of care for ammonia refrigeration systems of this size is to post signs warning of the presence of ammonia and restricting entry to authorized personnel at *each* entrance to the Machinery Room, see, e.g., IIAR 2-2008 (2010 ed.), supra, § 13.1.2.4; ASHRAE 15-2010, supra, §§ 8.11.8, 11.2.4, and to post other signs with information about the operation of the System, including signs explaining the alarms and the emergency shutdown process, outside the principal Machinery Room door. See, e.g., IIAR 2-2008 (2010 ed.), supra, §§ 13.1.10.4 (systems need "informative signs, emergency signs, charts and labels in accordance with [National Fire Protection Association] 704"), 13.2.4.1 (alarms), App. L (summarizing signage and providing examples); ASHRAE 15-2010, supra, §§ 8.11.2.1 (meaning of alarms at each entrance), 11.2.1 (installer name and address, amount and kind of refrigerant, amount and kind of lubricant, and field test pressure applied), 11.7

(emergency shutdown procedures and precautions in case of a breakdown or leak); Int'l Inst. of Ammonia Refrigeration, Bulletin No. 109: IIAR Minimum Safety Criteria for a Safe Ammonia Refrigeration System §§ 4.10.4 (1997) [hereinafter "IIAR Bull. 109"] (general system information), 4.10.6 (evacuation plan with activation responsibility clearly indicated).

Inadequate Basic Safety Practices

30. As described above in Paragraph 17(h), at the time of the Inspection, Respondent had failed to maintain the Machinery Room to be clear and free of flammable and combustible storage. The recommended industry practice and standard of care for ammonia refrigeration systems of this size is to store no flammable or combustible material in machine rooms or otherwise near vessels. See, e.g., IIAR 2-2008 (2010 ed.), supra, § 13.1.3.1.

31. As described above in Paragraph 17(i), at the time of the Inspection, Respondent had failed to maintain clear access to the fire sprinkler control and shutoff valves. The recommended industry practice and standard of care for ammonia refrigeration systems of this size is to provide for clear and unobstructed access to the machinery for inspection, service, and emergency shutdown. See, e.g., IIAR 2-2008 (2010 ed.), supra, § 13.1.2.2; ASHRAE 15-2010, supra, § 8.3.

32. Also, as described above in Paragraph 17(j), at the time of the Inspection, Respondent had not ensured that all components and piping were protected from forklift traffic or other impact. The recommended industry practice and standard of care for ammonia refrigeration systems of this size is to safeguard piping, controls, and other refrigeration equipment to minimize the chance of accidental damage by external sources

such as forklifts. See, e.g., ASHRAE 15-2010, supra, § 11.1; IIAR Bull. 109, supra, § 4.4.2, 4.7.3.

33. Also, as described above in Paragraph 17(k), at the time of the Inspection, Respondent had failed to provide the necessary eyewash and shower stations and personal protective equipment to protect employees in case of ammonia exposure or other emergency. The recommended industry practice and standard of care for ammonia refrigeration systems of this size is to have eyewash and shower stations inside the Machinery Room and just outside its exit. See, e.g., IIAR 2-1999, supra, § 6.3.1.4; IIAR Bull. 109, supra, § 4.10.10. It is also to have a self-contained breathing apparatus outside but nearby the Machinery Room, with a second apparatus also available. IIAR Bull. 109, supra, § 4.10.11.

34. Additionally, as described above in Paragraph 17(n), at the time of the Inspection, Respondent had failed to maintain the paint on the condenser support structures to prevent corrosion. The recommended industry practice and standard of care for ammonia refrigeration systems of this size is to adequately anchor and support condensers, including by preventing, and inspecting for, corrosion. See, e.g., IIAR Bull. 109, supra, §§ 4.2.1, 4.2.4.

Inadequate Emergency Design and Mechanisms

35. As described above in Paragraph 17(o), at the time of the Inspection, Respondent had not ensured that the receiver or condenser relief valve discharges were in a safe location. The recommended industry practice and standard of care for ammonia refrigeration systems of this size is to ensure that the discharges of relief valves are positioned above the level of any liquid refrigerant, away from the location of any

personnel servicing the equipment, and at least twenty feet away from any building exit. See, e.g., ASHRAE 15-2007, supra, §§ 9.4.8, 9.7.8; IIAR 2-1999, supra, § 7.3.2; IIAR Bull. 109, supra, § 4.9.6.

36. Also, as described above in Paragraph 17(p), at the time of the Inspection, the relief header piping was not installed in a safe manner. The recommended industry practice and standard of care for ammonia refrigeration systems of this size is to raise the relief header pipe at least fifteen feet above the adjoining surface level, orient it to point up and away from where any people may be nearby, and locate it at least twenty feet from any building exit. See, e.g., ASHRAE 15-2007, supra, §§ 9.4.8, 9.7.8; IIAR 2-1999, supra, § 7.3.2; IIAR Bull. 109, supra, § 4.9.6.

37. As described above in Paragraph 17(q), at the time of the Inspection, Respondent had not equipped the ammonia detectors at the Facility to actuate visual and audible alarms at each Machinery Room entrance. The recommended industry practice and standard of care for ammonia refrigeration systems of this size is to equip ammonia detectors to actuate visual and audible alarms inside the Machinery Room and at each of its entrances. See, e.g., IIAR 2-2008 (2010 ed.), supra, § 13.2.1.2; ASHRAE 15-2010, supra, § 8.11.2.1.

38. Also, as described above in Paragraph 17(r), at the time of the Inspection, Respondent had not provided and labeled adequate emergency shutdown and ventilation switches for the System outside the principal Machinery Room door. The recommended industry practice and standard of care for ammonia refrigeration systems of this size is to provide clearly marked emergency shutdown and ventilation switches at the principal Machinery Room door (and, preferably, all access doors). See, e.g., IIAR 2-2008 (2010

ed.), supra, §§ 13.1.13.2 (shutdown), 13.3.11 (ventilation). The shutdown switch should be either of the break-glass type or have an approved tamper resistant cover. See, e.g., id. § 13.1.13.2.

39. Additionally, as described above in Paragraph 17(s), at the time of the Inspection, Respondent had not labeled the King Valve and had not installed a handle on the King Valve. Both of these situations would impede quick operation of the King Valve, which can be used to shut off the flow of ammonia throughout the System, in an emergency. The recommended industry practice and standard of care for ammonia refrigeration systems of this size is to identify the King Valve with a prominent, permanent sign, see, e.g., ASHRAE 15-2010, supra, § 11.2.2 (label valves controlling refrigerant flow); IIAR ARM, supra, § 4.2 (including the labeling of emergency isolation valves as a part of writing operating procedures); IIAR Bull. 109, supra, § 4.10.3, and ensure that the King Valve is readily operable. See, e.g., IIAR 2-2008 (2010 ed.), supra, § 13.1.2.3; IIAR Bull. 109, supra, § 4.10.3.

40. Therefore, by failing to have (a) appropriate refrigeration system documentation; (b) adequate ventilation system design and operation; (c) adequate signs; (d) adequate basic safety practices; and (e) adequate emergency design and mechanisms, Respondent failed to design and maintain a safe facility, as required by the General Duty Clause, Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1).

III. FAILURE TO MINIMIZE THE CONSEQUENCES OF ACCIDENTAL RELEASES THAT DO OCCUR

41. The allegations in Paragraphs 1 through 40 are hereby realleged and incorporated herein by reference.

42. Pursuant to the General Duty Clause, Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1), owners and operators of stationary sources producing, processing, handling, or storing extremely hazardous substances have a general duty to minimize the consequences of any accidental releases of anhydrous ammonia that do occur.

43. As described above in Paragraph 17(t), at the time of the Inspection, Respondent did not have an adequate emergency response program, including an up-to-date emergency action plan that addressed release scenarios based on hazards associated with the design, location, and operation of the Facility. The emergency plan provided to EPA was not fully tailored to reflect the specific conditions at the Facility and so could not adequately address the likely consequences of an accidental release. The recommended industry practice and standard of care for ammonia refrigeration systems of this size is to 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. See, e.g., IIAR ARM, § 7. 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, e.g., id.

44. In addition, the allegations in paragraphs 25 through 31, 33, and 35 through 39 describe deficiencies that not only constitute a failure to design and maintain a safe facility, but also reflect a failure to minimize the consequences of any accidental release

of ammonia. Each of these shortcomings could exacerbate the negative effects of any release of ammonia that does occur at the Facility.

45. Accordingly, by failing to develop and implement an adequate emergency response plan based on the specific design and operation of the Facility, failing to have adequate ventilation system design and operation, failing to have adequate signs posted throughout the Facility, failing to have certain basic safety practices in place, and failing to provide adequate emergency design and mechanisms for the Facility, Respondent violated the requirement to minimize the consequences of any accidental release of anhydrous ammonia that does occur, as required under the General Duty Clause, Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1).

ADMINISTRATIVE ORDER

46. **As soon as possible, but no later than thirty (30) days after the effective date of this AO**, Respondent shall i) engage a third-party ammonia refrigeration system expert ("Refrigeration Expert") to help conduct the work required by this AO and ii) submit the Refrigeration Expert's resume and qualifications to EPA.

47. **As soon as possible, but no later than sixty (60) days after the effective date of this AO**, Respondent shall submit a work plan and schedule to correct any of the deficiencies alleged above in Paragraphs 18 through 45 that it has not already corrected. This schedule and work plan, once approved by EPA, shall be enforceable under this AO. **All work must be completed as expeditiously as practicable, but in no event longer than one (1) year after the effective date of this AO.** Specifically:

a. Respondent shall conduct a hazard analysis in accordance with Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1), for the System, using appropriate

hazard assessment techniques, including as described in Paragraph 19. The hazard analysis should indicate its date of completion. Guidance for conducting such hazard analysis is available in IIAR publications, such as the Ammonia Refrigeration Management Program, and the EPA GDC Guidance.

b. Respondent shall acquire, create, maintain, and provide to EPA the critical documents and information about the System discussed in Paragraphs 17(b) and 24, above, ensuring that any diagrams reflect the actual, "as-built" design of the Facility. Indicate the date each document was acquired or created.

c. Evaluate, design, install, and operate an adequate ventilation system, including by ensuring that the Machinery Room has sufficient air sweep necessary for normal operation and to clear it of ammonia fumes in case of emergency. Ensure that the ventilation system addresses the deficiencies discussed in Paragraphs 25 through 28, above, and is otherwise consistent with industry standards and applicable building codes. See generally IIAR 2-2008 (2010 ed.), supra, § 13.3; see also ASHRAE 15-2010, supra, §§ 8.11.3–.7, 8.12(h); IIAR Bull. 109, supra, § 4.8.1.

d. Post all necessary signs in the Machinery Room, outside the Machinery Room Access Doors, and at any other appropriate locations in the Facility, including those identified in Paragraph 29, above, among any others.

e. Employ the basic safety practices discussed in Paragraphs 30 through 34 by clearing the Machinery Room of combustible storage, maintaining clear access to the fire sprinkler control and shutoff valves, protecting all components and piping from forklift traffic or other impact, providing the necessary personal

protective equipment and eyewash stations to protect employees in case of exposure or other emergency, and maintaining the paint on the condenser support structures to prevent corrosion.

f. Make needed emergency design changes, including as described in Paragraphs 35 through 39 above, by repositioning the receiver and condenser relief discharges, reconfiguring the main relief discharge piping, equipping the ammonia detectors to actuate monitored alarms, electrical shutdown, and both normal and emergency ventilation, providing and labeling adequate emergency shutdown and ventilation switches for the System outside the principal Machinery Room door, labeling the King Valve, and installing a handle on the King Valve.

48. **No later than one year after the effective date of this AO,** Respondent shall submit documentation of its correction of the deficiencies alleged above in Paragraphs 18 through 45, whether corrected before or after the date of this AO. Such documentation should include a narrative description of the actions taken, the dates the action was taken, and any relevant supporting documentation. Such documentation includes, for example: copies of diagrams and documents, information about operating parameters, maintenance logs, calculations, and photographs (of signs, appropriately-labeled refrigeration components, pipes, and newly installed equipment).

49. Notice: Respondent shall submit all notices, schedules, work plans, analyses, certification, and documentation required by this order to:

Leonard B. Wallace IV, Enforcement Officer
RCRA, EPCRA, and Federal Programs Unit (SER)
Office of Environmental Stewardship
EPA Region 1

Mailcode: OES05-1
5 Post Office Square, Suite 100
Boston, MA 02109-3912

REPORTING REQUIREMENT

50. In addition to the compliance documentation required by Paragraph 48 above, pursuant to Section 114(a)(1) of the CAA, 42 U.S.C § 7414(a)(1), Respondent shall submit the following information, audits, and reports to the EPA staff listed in Paragraph 49, above:

a. **Within sixty (60) days of the effective date of this NOV, AO, and RR**:

i. Provide delivery receipts and payment invoices documenting the quantity of ammonia added to the System on August 13, 2007 and October 2, 2007.

ii. In addition to providing the documents described in Paragraph 24, above, and Paragraph 47(b) of the AO, also provide an itemized list of any additional "essential records relevant to the system" in Respondent's possession, *including the date the document was acquired or created.* See IIAR Bull. 110, supra, § 4. Guidance regarding the "essential records relevant to the system" is available from IIAR publications, including from Section 3 of the Ammonia Refrigeration Management Program and Section 4 of Bulletin 110. For example, this documentation includes, among other information: an equipment list for each vessel and/or component in the System, including manufacturer's information and recommendations about safe operating parameters; documents, diagrams, and calculations regarding the ammonia charge, safety systems employed, pressure relief for the System and for each individual vessel and/or component, and Machinery

Room ventilation; and information about the codes or standards that apply to the System.

iii. Provide copies of any Standard Operating Procedures for the System in effect, *including the date(s) on which they were created and put into effect.* Guidance regarding the necessary written operating procedures can be found in IIAR publications and in EPA's GDC Guidance. See, e.g., IIAR ARM, supra, § 4.2; IIAR 2-2008 (2010 ed.), supra, § 14.2.1; EPA GDC Guidance, supra, § 2.3.2.b. See also IIAR Bull. 110, supra, § 5.2.2.

iv. Provide any documents setting forth information or calculations in Respondent's possession regarding ventilation at the Facility. This includes information about methods of activation and capacity, and supporting documentation such as engineering diagrams that served as the basis for calculations, for both normal and emergency ventilation situations. *Indicate the date(s) on which the documents were created or performed.*

v. Provide records pertaining to the employee training program in effect from the commencement of operation of the System, through the date of this NOV, AO, and RR, including the agenda or topics covered, and records indicating the names of employees who received the training *and the dates on which the training was performed.*

vi. Provide a copy of the building permit that authorized construction of the System.

vii. Provide a description of the steps taken by Respondent to coordinate response procedures with local emergency planning and response agencies.

b. Within ninety (90) days of the effective date of this NOV, AO, and RR:

i. Provide any available documentation: showing that that the System's relief valves (including on the pump recirculator, screw compressor, floor warming vessel, receiver, and condenser) are of sufficient size, supported by the necessary pressure calculations; verifying that ammonia analyzer ranges and alarm settings conform to current regulatory concentration limits; verifying that a self-closing valve is in place for oil draining; and verifying that a check valve is installed on the ammonia charging valve on the high pressure receiver.

ii. Provide any available information and records documenting Respondent's mechanical integrity ("MI") program at the Facility from January 1, 2008 until the present, including procedures and schedules for the inspection, testing, and preventative maintenance ("ITPM") of the System, and retaining records thereof, including operational logsheets and ITPM results. Guidance can be found in IIAR publications, such as sections 4, 5, and 6 of Bulletin 110. See also IIAR 2-2008 (2010 ed.), supra, § 13.3.12; ASHRAE 15-2010, supra, § 11.6.3; IIAR ARM, supra, §§ 4.3, 5 & App. 5.1.

c. Within 120 days of the effective date of this NOV, AO, and RR:

i. Provide EPA with an estimate of the cost savings realized, if any, by failing to comply with the General Duty Clause since January 1, 2008. Include all costs, including, but not limited to, costs associated with contractor fees, equipment upgrades, paperwork, and facility upgrades.

ii. Provide information on Respondent's net worth and annual sales for the fiscal years 2008 through 2012.

iii. Provide EPA with a list, including dates and supporting documentation for, any changes made to the Facility or its management or operation following the Inspection, whether made independently or in response to the Inspection.

51. Respondent may assert a business confidentiality claim covering part or all of the information requested, in the manner described by 40 C.F.R. § 2.203(b). Not all business information is entitled to confidential treatment. To properly qualify for such a claim, the information must meet the substantive criteria outlined in 40 C.F.R. § 2.208. Information covered by such a claim will be disclosed by EPA only to the extent, and by means of the procedures, set forth in 40 C.F.R. Part 2, Subpart B. If no such claim accompanies the information when EPA receives it, EPA may make the information available to the public without further notice to you.

ENFORCEMENT

52. Be advised that issuance of this NOV, AO, and RR does not preclude EPA from electing to pursue any other remedies or sanctions authorized by law that are available to address these and other violations. This NOV, AO, and RR does not resolve Respondent's liability for past violations of the Act or for any violations that continue from the date of this NOV, AO, and RR up to the date of compliance.

53. At any time after the issuance of this NOV, AO, and RR, EPA may take any or all of the following actions: issue a further order requiring compliance with the Act; issue an administrative penalty order for up to $37,500 per day for each violation; or bring a civil or criminal action seeking an injunction and penalties. See Sections 113(a)–(d) of

the CAA, 42 U.S.C. §§ 7413(a)–(d); 40 C.F.R. Part 19; and 73 Fed. Reg. 75,340–46 (Dec. 11, 2008) (Clean Air Act penalties raised from $25,000 to $32,500 for violations occurring from March 15, 2004 to January 12, 2009, and to $37,500 for violations occurring after January 12, 2009). Be advised that Section 113(e)(2) of the Act, 42 U.S.C. § 7413(e)(2), contains provisions that affect the burden of proof with respect to violations which continue following issuance of a Notice of Violation.

54. Neither EPA nor the United States, by the issuance of this NOV, AO, and RR, assumes any liability for any acts or omissions by Respondent or Respondent's employees, agents, contractors, or consultants engaged to carry out any action or activity pursuant to this NOV, AO, and RR; nor shall EPA or the United States be held as a party to any contract entered into by Respondent or Respondent's employees, agents, contractors, or consultants engaged to carry out the requirements of this NOV, AO, and RR.

EFFECTIVE DATE AND APPLICABILITY

55. The NOV, AO, and RR shall take effect thirty (30) days from receipt. The NOV, AO, and RR shall apply to Respondent, its officers, agents, servants, employees, successors and assigns, and to all persons, firms, and corporations acting under, through or for Respondent. This action is not subject to Office of Management and Budget review under the Paperwork Reduction Act, 44 U.S.C. §§ 3501–3521.

56. If Respondent has any questions regarding this NOV, AO, and RR, please contact Len Wallace at (617) 918-1835, or have your legal counsel contact Christine Foot, Enforcement Counsel, at (617) 91 8-1333. Respondent may request an opportunity to confer with EPA about this NOV, AO, and RR by contacting Len Wallace or Christine

Foot at the phone numbers listed above within fourteen (14) days of receiving this NOV, AO, and RR.

Susan Studlien

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

03/21/13
Date