EPA United States Environmental Protection Agency

Region 6 Enforcement and Compliance Assurance Division

INSPECTION REPORT

Inspection Date(s):	04/18/2019		
Media:	Air		
Regulatory Program(s)	RMP		
Company Name:	**Airgas Specialty Products**		
Facility Name:	**Airgas, Inc.**		
Facility Physical Location:	6603A West Bay Road		
(city, state, zip code)	Baytown, Texas, 77520		
Mailing address:	2530 Sever Road Suite 300		
(city, state, zip code)	Lawrenceville, Georgia, 30043		
County/Parish:	Chambers County		
Facility Contact:	Clarke Scott	Regional Manager	
	Clarke.scott@airgas.com		
FRS Number:	110046424302		
Identification/Permit Number:	N/A		
Media Number:	RMP #100000217801		
NAICS:	42469		
SIC:			

Personnel participating in inspection:

Christina Ortiz	Airgas Specialty Products	Director, EHS	678) 407-7504
Scott B. Pace	Airgas Specialty Products	Facility Manager	281) 918-0216
Patrick Lansing	Airgas Specialty Products	Employee	832) 336-1735
Todd Wilson	Airgas Specialty Products	Employee	281) 918-0216

EPA Lead Inspector Signature/Date	Kayla Buchanan Kayla Buchanan	6/11/2019 Date
Supervisor Signature/Date	Samuel Tates Samuel Tates	6/11/2019 Date

Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

I, the Environmental Protection Agency (EPA) Region 6 inspector Kayla Buchanan, arrived at the Airgas Specialty Products. (Airgas) at 9 a.m. on April 18, 2019, for an announced inspection. I convened an opening conference and met with several representatives from the facility (as denoted in the table above). I presented my credentials to the opening conference attendees and informed them that this was an EPA inspection to determine Airgas compliance with the Clean Air Act (CAA) Sections 112(r)(1) and 112(r)(7). The scope of the inspection was a partial compliance evaluation of the facility pursuant to 40 CFR Subpart 68 – Chemical Accident Prevention Provisions. An employee representative was invited to participate in the inspection but did not attend. The facility does not have union representation.

FACILITY DESCRIPTION

Airgas is a private facility located in Baytown, Texas (latitude: 29.74262, longitude: -94.92346). Aqueous ammonia is produced at the facility, and hydrochloric acid is stored and distributed to its customers. Nine (9) full time employees work at this facility.

Section III – AREAS OF CONCERN

1. **40 C.F.R. § 68.69(c)** requires operating procedures to be reviewed as often as necessary to assure that they reflect current operating practice, including changes that result from changes in process chemicals, technology, and equipment, and changes to stationary sources. The owner or operator shall certify annually that these operating procedures are current and accurate. Airgas failed to annually certify its operating procedures (Appendix 2).

2. **40 C.F.R. § 68.75(c)** requires employees involved in operating a process and maintenance and contract employees whose job tasks will be affected by a change in the process shall be informed of, and trained in, the change prior to start-up of the process or affected part of the process. Airgas failed to train its employees prior to start-up of the affected part of the process.

3. **40 C.F.R. § 68.77(b)(4)** requires the pre-startup safety review (PSSR) to confirm that prior to the introduction of regulated substances to a process, training of each employee involved in operating a process has been completed. Airgas failed to perform a PSSR that confirmed training prior to the introduction of the regulated substances to the process; training was completed after the PSSR was performed.

Section IV – FOLLOW UP

No information was received by EPA after exiting the Facility on April 19, 2019.

Section V – LIST OF APPENDICES

Appendix 1 –RMP Program 3 Checklist
Key: Y – Yes, N-No, N/A – Not Applicable, M-Marginal, S-Satisfactory, U-Unsatisfactory.

Appendix 2 – Airgas Annual Certifications

Appendix 3 – Various Airgas Management of Change (MOC) and PSSR Documentation

RMP Program Level 3 Process Checklist

Facility Name: Airgas Specialty Products

Section A – Management [68.15]

Management system developed and implemented as provided in 40 CFR 68.15? N/A Comments:	☒S	☐M	☐U	☐

Has the owner or operator:

1. Developed a management system to oversee the implementation of the risk management program elements? [68.15(a)]	☒Y	☐N	☐N/A
2. Assigned a qualified person or position that has the overall responsibility for the development, implementation, and integration of the risk management program elements? [68.15(b)]	☒Y	☐N	☐N/A
3. Documented other persons responsible for implementing individual requirements of the risk management program and defined the lines of authority through an organization chart or similar document? [68.15(c)]	☒Y	☐N	☐N/A

Section B: Hazard Assessment [68.20-68.42]

Hazard assessment conducted and documented as provided in 40 CFR 68.20-68.42? N/A Comments:	☒S	☐M	☐U	☐

Hazard Assessment: Offsite consequence analysis parameters [68.22]

1. Used the following endpoints for offsite consequence analysis for a worst-case scenario: [68.22(a)] ☒ For toxics: the endpoints provided in Appendix A of 40 CFR Part 68? [68.22(a)(1)] ☐ For flammables: an explosion resulting in an overpressure of 1 psi? [68.22(a)(2)(i)]; or ☐ For flammables: a fire resulting in a radiant heat/exposure of 5 kw/m^2 for 40 seconds? [68.22(a)(2)(ii)] ☐ For flammables: a concentration resulting in a lower flammability limit, as provided in NFPA documents or other generally recognized sources? [68.22(a)(2)(iii)]	☒Y	☐N	☐N/A
2. Used the following endpoints for offsite consequence analysis for an alternative release scenario: [68.22(a)] ☒ For toxics: the endpoints provided in Appendix A of 40 CFR Part 68? [68.22(a)(1)] ☐ For flammables: an explosion resulting in an overpressure of 1 psi? [68.22(a)(2)(i)] ☐ For flammables: a fire resulting in a radiant heat/exposure of 5 kw/m^2 for 40 seconds? [68.22(a)(2)(ii)] ☐ For flammables: a concentration resulting in a lower flammability limit, as provided in NFPA documents or other generally recognized sources? [68.22(a)(2)(iii)]	☒Y	☐N	☐N/A
3. Used appropriate wind speeds and stability classes for the release analysis? [68.22(b)]	☒Y	☐N	☐N/A
4. Used appropriate ambient temperature and humidity values for the release analysis? [68.22(c)]	☒Y	☐N	☐N/A
5. Used appropriate values for the height of the release for the release analysis? [68.22(d)]	☒Y	☐N	☐N/A
6. Used appropriate surface roughness values for the release analysis? [68.22(e)]	☒Y	☐N	☐N/A
7. Do tables and models, used for dispersion analysis of toxic substances, appropriately account for dense or neutrally buoyant gases? [68.22(f)]	☒Y	☐N	☐N/A
8. Were liquids, other than gases liquefied by refrigeration only, considered to be released at the highest daily maximum temperature, based on data for the previous three years appropriate for a stationary source, or at process temperature, whichever is higher? [68.22(g)]	☒Y	☐N	☐N/A

Hazard Assessment: Worst-case release scenario analysis [68.25]

9. Analyzed and reported in the RMP one worst-case release scenario estimated to create the greatest distance to an endpoint resulting from an accidental release of a regulated toxic substance from covered processes under worst-case conditions? [68.25(a)(2)(i)]	☒Y ☐N ☐N/A
10. Analyzed and reported in the RMP one worst-case release scenario estimated to create the greatest distance to an endpoint resulting from an accidental release of a regulated flammable substance from covered processes under worst-case conditions? [68.25(a)(2)(ii)]	☒Y ☐N ☐N/A
11. Analyzed and reported in the RMP additional worst-case release scenarios for a hazard class if the worst-case release from another covered process at the stationary source potentially affects public receptors different from those potentially affected by the worst-case release scenario developed under 68.25(a)(2)(i) or 68.25(a)(2)(ii)? [68.25(a)(2)(iii)]	☒Y ☐N ☐N/A
12. Has the owner or operator determined the worst-case release quantity to be the greater of the following: [68.25(b)] ☐ If released from a vessel, the greatest amount held in a single vessel, taking into account administrative controls that limit the maximum quantity? [68.25(b)(1)] ☐ If released from a pipe, the greatest amount held in the pipe, taking into account administrative controls that limit the maximum quantity? [68.25(b)(2)]	☒Y ☐N ☐N/A
13.a. Has the owner or operator for toxic substances that are normally gases at ambient temperature and handled as a gas or liquid under pressure:	
13.a.(1) Assumed the whole quantity in the vessel or pipe would be released as a gas over 10 minutes? [68.25(c)(1)]	☒Y ☐N ☐N/A
13.a.(2) Assumed the release rate to be the total quantity divided by 10, if there are no passive mitigation systems in place? [68.25(c)(1)]	☒Y ☐N ☐N/A
13.b. Has the owner or operator for toxic gases handled as refrigerated liquids at ambient pressure:	
13.b.(1) Assumed the substance would be released as a gas in 10 minutes, if not contained by passive mitigation systems or if the contained pool would have a depth of 1 cm or less? [68.25(c)(2)(i)]	☒Y ☐N ☐N/A
13.b.(2) If released substance would be contained by passive mitigation systems in a pool with a depth > 1 cm; ☒ Assumed the quantity in the vessel or pipe (as determined per 68.25(b)) would be spilled instantaneously to form a liquid pool? [68.25(c)(2)(ii)] ☐ Calculated the volatility rate at the boiling point of the substance and at the conditions specified in 68.25(d)? [68.25(c)(2)(ii)]	☒Y ☐N ☐N/A
13.c. Has the owner or operator for toxic substances that are normally liquids at ambient temperature:	
13.c.(1) Assumed the quantity in the vessel or pipe would be spilled instantaneously to form a liquid pool? [68.25(d)(1)]	☐Y ☐N ☒N/A
13.c.(2) Determined the surface area of the pool by assuming that the liquid spreads to 1 cm deep, if there is no passive mitigation system in place that would serve to contain the spill and limit the surface area, or if passive mitigation is in place, was the surface area of the contained liquid used to calculate the volatilization rate? [68.25(d)(1)(i)]	☐Y ☐N ☒N/A
13.c.(3) Taken into account the actual surface characteristics, if the release would occur onto a surface that is not paved or smooth? [68.25(d)(1)(ii)]	☐Y ☐N ☒N/A

13.c.(4) Determined the volatilization rate by accounting for the highest daily maximum temperature in the past three years, the temperature of the substance in the vessel, and the concentration of the substance if the liquid spilled is a mixture or solution? [68.25(d)(2)]	☐Y ☐N ☒N/A
13.c.(5) Determined the rate of release to air from the volatilization rate of the liquid pool? [68.25(d)(3)]	☐Y ☐N ☒N/A
13.c.(6) Determined the rate of release to air by using the methodology in the RMP Offsite Consequence Analysis Guidance, any other publicly available techniques that account for the modeling conditions and are recognized by industry as applicable as part of current practices, or proprietary models that account for the modeling conditions may be used provided the owner or operator allows the implementing agency access to the model and describes model features and differences from publicly available models to local emergency planners upon request? [68.25(d)(3)] What modeling technique did the owner or operator use? [68.25(g)] RMP*Comp	☐Y ☐N ☒N/A
13.d. Has the owner or operator for flammables:	
13.d.(1) Assumed the quantity in a vessel(s) of flammable gas held as a gas or liquid under pressure or refrigerated gas released to an undiked area vaporizes resulting in a vapor cloud explosion? [68.25(e)]	☐Y ☐N ☒N/A
13.d.(2) For refrigerated gas released to a contained area or liquids released below their atmospheric boiling point, assumed the quantity volatilized in 10 minutes results in a vapor cloud? [68.25(f)]	☐Y ☐N ☒N/A
13.d.(3) Assumed a yield factor of 10% of the available energy is released in the explosion for determining the distance to the explosion endpoint, if the model used is based on TNT-equivalent methods? [68.25(e)]	☐Y ☐N ☒N/A
14. Used the parameters defined in 68.22 to determine distance to the endpoints? [68.25(g)]	☐Y ☐N ☒N/A
15. Determined the rate of release to air by using the methodology in the RMP Offsite Consequence Analysis Guidance, any other publicly available techniques that account for the modeling conditions and are recognized by industry as applicable as part of current practices, or proprietary models that account for the modeling conditions may be used provided the owner or operator allows the implementing agency access to the model and describes model features and differences from publicly available models to local emergency planners upon request? [68.25(g)] What modeling technique did the owner or operator use? [68.25(g)] RMP*Comp	☐Y ☐N ☒N/A
16. Ensured that the passive mitigation system, if considered, is capable of withstanding the release event triggering the scenario and will still function as intended? [68.25(h)]	☐Y ☐N ☒N/A
17. Considered also the following factors in selecting the worst-case release scenarios: [68.25(i)] ☐ Smaller quantities handled at higher process temperature or pressure? [68.25(i)(1)] ☐ Proximity to the boundary of the stationary source? [68.25(i)(2)]	☐Y ☐N ☒N/A
Hazard Assessment: Alternative release scenario analysis [68.28]	
18. Identified and analyzed at least one alternative release scenario for each regulated toxic substance held in a covered process(es) and at least one alternative release scenario to represent all flammable substances held in covered processes? [68.28(a)]	☒Y ☐N ☐N/A
19. Selected a scenario: [68.28(b)] ☒ That is more likely to occur than the worst-case release scenario under 68.25? [68.28(b)(1)(i)] ☐ That will reach an endpoint off-site, unless no such scenario exists? [68.28(b)(1)(ii)]	☒Y ☐N ☐N/A

20. Considered release scenarios which included, but are not limited to, the following: [68.28(b)(2)] ☐ Transfer hose releases due to splits or sudden hose uncoupling? [68.28(b)(2)(i)] ☐ Process piping releases from failures at flanges, joints, welds, valves and valve seals, and drains or bleeds? [68.28(b)(2)(ii)] ☐ Process vessel or pump releases due to cracks, seal failure, or drain, bleed, or plug failure? [68.28(b)(2)(iii)] ☐ Vessel overfilling and spill, or overpressurization and venting through relief valves or rupture disks? [68.28(b)(2)(iv)] ☐ Shipping container mishandling and breakage or puncturing leading to a spill? [68.28(b)(2)(v)]	☒Y ☐N ☐N/A
21. Used the parameters defined in 68.22 to determine distance to the endpoints? [68.28(c)]	☒Y ☐N ☐N/A
22. Determined the rate of release to air by using the methodology in the RMP Offsite Consequence Analysis Guidance, any other publicly available techniques that account for the modeling conditions and are recognized by industry as applicable as part of current practices, or proprietary models that account for the modeling conditions may be used provided the owner or operator allows the implementing agency access to the model and describes model features and differences from publicly available models to local emergency planners upon request? [68.28(c)] What modeling technique did the owner or operator use? [68.25(g)] RMP*Comp	☒Y ☐N ☐N/A
23. Ensured that the passive and active mitigation systems, if considered, are capable of withstanding the release event triggering the scenario and will be functional? [68.28(d)]	☒Y ☐N ☐N/A
24. Considered the following factors in selecting the alternative release scenarios: [68.28(e)] ☐ The five-year accident history provided in 68.42? [68.28(e)(1)] ☒ Failure scenarios identified under 68.50? [68.28(e)(2)]	☒Y ☐N ☐N/A
Hazard Assessment: Defining off-site impacts–Population [68.30]	
25. Estimated population that would be included in the distance to the endpoint in the RMP based on a circle with the point of release at the center? [68.30(a)]	☒Y ☐N ☐N/A
26. Identified the presence of institutions, parks and recreational areas, major commercial, office, and industrial buildings in the RMP? [68.30(b)]	☒Y ☐N ☐N/A
27. Used most recent Census data, or other updated information to estimate the population? [68.30(c)]	☒Y ☐N ☐N/A
28. Estimated the population to two significant digits? [68.30(d)]	☒Y ☐N ☐N/A
Hazard Assessment: Defining off-site impacts–Environment [68.33]	
29. Identified environmental receptors that would be included in the distance to the endpoint based on a circle with the point of release at the center? [68.33(a)]	☒Y ☐N ☐N/A
30. Relied on information provided on local U.S.G.S. maps, or on any data source containing U.S.G.S. data to identify environmental receptors? [Source may have used LandView to obtain information] [68.33(b)]	☒Y ☐N ☐N/A
Hazard Assessment: Review and update [68.36]	
31. Reviewed and updated the off-site consequence analyses at least once every five years? [68.36(a)]	☒Y ☐N ☐N/A
32. Completed a revised analysis and submit a revised RMP within six months of a change in processes, quantities stored or handled, or any other aspect that might reasonably be expected to increase or decrease the distance to the endpoint by a factor of two or more? [68.36(b)]	☒Y ☐N ☐N/A

Hazard Assessment: Documentation [68.39]	
33. For worst-case scenarios: a description of the vessel or pipeline and substance selected, assumptions and parameters used, the rationale for selection, and anticipated effect of the administrative controls and passive mitigation on the release quantity and rate? [68.39(a)]	☒Y ☐N ☐N/A
34. For alternative release scenarios: a description of the scenarios identified, assumptions and parameters used, the rationale for the selection of specific scenarios, and anticipated effect of the administrative controls and mitigation on the release quantity and rate? [68.39(b)]	☒Y ☐N ☐N/A
35. Documentation of estimated quantity released, release rate, and duration of release? [68.39(c)]	☒Y ☐N ☐N/A
36. Methodology used to determine distance to endpoints? [68.39(d)]	☒Y ☐N ☐N/A
37. Data used to estimate population and environmental receptors potentially affected? [68.39(e)]	☒Y ☐N ☐N/A
Hazard Assessment: Five-year accident history [68.42]	
38. Has the owner or operator included all accidental releases from covered processes that resulted in deaths, injuries, or significant property damage on site, or known offsite deaths, injuries, evacuations, sheltering in place, property damage, or environmental damage? [68.42(a)]	☐Y ☐N ☒N/A
39. Has the owner or operator reported the following information for each accidental release: [68.42(b)]	☐Y ☐N ☒N/A
☐ Date, time, and approximate duration of the release? [68.42(b)(1)]	
☐ Chemical(s) released? [68.42(b)(2)]	
☐ Estimated quantity released in pounds and percentage weight in a mixture (toxics)? [68.42(b)(3)]	
☐ NAICS code for the process? [68.42(b)(4)]	
☐ The type of release event and its source? [68.42(b)(5)]	
☐ Weather conditions (if known)? [68.42(b)(6)]	
☐ On-site impacts? [68.42(b)(7)]	
☐ Known offsite impacts? [68.42(b)(8)]	
☐ Initiating event and contributing factors (if known)? [68.42(b)(9)]	
☐ Whether offsite responders were notified (if known)? [68.42(b)(10)]	
☐ Operational or process changes that resulted from investigation of the release? [68.42(b)(11)]	

Section C: Prevention Program

Implemented the Program 3 prevention requirements as provided in 40 CFR 68.65 - 68.87? N/A	☐S ☒M ☐U ☐

Prevention Program- Safety information [68.65]

1. Has the owner or operator compiled written process safety information, which includes information pertaining to the hazards of the regulated substances used or produced by the process, information pertaining to the technology of the process, and information pertaining to the equipment in the process, before conducting any process hazard analysis required by the rule? [68.65(a)] Does the process safety information contain the following for hazards of the substances: [68.65(b)] ☒ Material Safety Data Sheets (MSDS) that meet the requirements of the OSHA Hazard Communication Standard [29 CFR 1910.1200(g)]? [68.48(a)(1)] ☒ Toxicity information? [68.65(b)(1)] ☒ Permissible exposure limits? [68.65(b)(2)] ☒ Physical data? [68.65(b)(3)] ☒ Reactivity data? [68.65(b)(4)] ☒ Corrosivity data? [68.65(b)(5)] ☒ Thermal and chemical stability data? [68.65(b)(6)] ☒ Hazardous effects of inadvertent mixing of materials that could foreseeably occur? [68.65(b)(7)]	☒Y ☐N ☐N/A
2. Has the owner documented information pertaining to technology of the process? ☒ A block flow diagram or simplified process flow diagram? [68.65(c)(1)(i)] ☒ Process chemistry? [68.65(c)(1)(ii)] ☒ Maximum intended inventory? [68.65(c)(1)(iii)] ☒ Safe upper and lower limits for such items as temperatures, pressures, flows, or compositions? [68.65(c)(1)(iv)] ☒ An evaluation of the consequences of deviation? [68.65(c)(1)(iv)]	☒Y ☐N ☐N/A
3. Does the process safety information contain the following for the equipment in the process: [68.65(d)(1)] ☒ Materials of construction? 68.65(d)(1)(i)] ☒ Piping and instrumentation diagrams [68.65(d)(1)(ii)] ☒ Electrical classification? [68.65(d)(1)(iii)] ☒ Relief system design and design basis? [68.65(d)(1)(iv)] ☒ Ventilation system design? [68.65(d)(1)(v)] ☒ Design codes and standards employed? [68.65(d)(1)(vi)] ☒ Material and energy balances for processes built after June 21, 1999? [68.65(d)(1)(vii)] ☒ Safety systems? [68.65(d)(1)(viii)]	☒Y ☐N ☐N/A

For ammonia refrigeration systems, these include (among others): ☐ Self-closing/quick closing valves on oil pots. ☐ All piping system openings, except for the relief header, are plugged or capped, or valve is locked. ☐ Equipment, piping, and valves are labeled for easy identification, and pressure vessels have legible, accessible nameplates. ☐ All pressure relief valves have been replaced in the last five years with visible confirmation of accessible pressure relief valves. [Note: Replacement every five years is the norm, but there are two other options in IIAR Bulletin 110, 6.6.3]. ☐ The system(s) has emergency shut off and ventilation switches outside machinery room. ☐ The machinery room(s) has functional, tested, ventilation. Air inlets are positioned to avoid recirculation of exhaust air and ensure sufficient inlet air to replace exhausted air. ☐ Documentation exists to show that pressure relief valves that have a common discharge header have adequately sized piping to prevent excessive backpressure on relief valves, or if built prior to 2000, have adequate diameter based on the sum of the relief valve cross-sectional areas. ☐ The system's critical shutoff valves are accessible, and a schematic is in place to show responders where to access them. ☐ Eyewash station(s) and safety shower(s) is/are present and functional. ☐ If respirators are used, the owner or operator knows where the respirators are located, and the respirators are inspected and maintained per manufacturer or industry standards. ☐ The facility has engineering controls in place to protect equipment and piping against overpressure due to hydrostatic expansion of trapped liquid refrigerant. Administrative controls are acceptable where hydrostatic overpressure can occur during maintenance operations.	☐Y ☐N ☒N/A
5. Has the owner or operator determined and documented that existing equipment, designed and constructed in accordance with codes, standards, or practices that are no longer in general use, is designed, maintained, inspected, tested, and operating in a safe manner? [68.65(d)(3)] For ammonia refrigeration systems, these include (among others), the items listed above in question 4.	☒Y ☐N ☐N/A
Prevention Program- Process Hazard Analysis [68.67]	
6. Has the owner or operator performed an initial process hazard analysis (PHA), and has this analysis identified, evaluated, and controlled the hazards involved in the process? [68.67(a)]	☒Y ☐N ☐N/A
7. Has the owner or operator determined and documented the priority order for conducting PHAs, and was it based on an appropriate rationale? [68.67(a)]	☒Y ☐N ☐N/A
8. Has the owner used one or more of the following technologies to conduct process PHA: [68.67(b)] ☐ What-if? [68.67(b)(1)] ☒ Checklist? [68.67(b)(2)] ☐ What-if/Checklist? [68.67(b)(3)] ☒ Hazard and Operability Study (HAZOP) [68.67(b)(4)] ☐ Failure Mode and Effects Analysis (FMEA) [68.67(b)(5)] ☐ Fault Tree Analysis? [68.67(b)(6)] ☐ An appropriate equivalent methodology? [68.67(b)(7)]	☒Y ☐N ☐N/A

9. Did the PHA address: ☒ The hazards of the process? [68.67(c)(1)] ☒ Identification of any incident that had a likely potential for catastrophic consequences? [68.67(c)(2)] ☒ Engineering and administrative controls applicable to hazards and interrelationships?[68.67(c)(3)] ☐ For ammonia refrigeration systems that employ hot gas defrost, does the process hazard analysis/review include an analysis of, and identify the engineering and administrative controls for, the hazards associated with the potential of vapor propelled liquid slugs and condensation-induced hydraulic shock events? ☒ Consequences of failure of engineering and administrative controls? [68.67(c)(4)] ☒ Stationary source siting? [68.67(c)(5)] ☒ Human factors? [68.67(c)(6)] ☒ An evaluation of a range of the possible safety and health effects of failure of controls? [68.67(c)(7)]	☒Y ☐N ☐N/A
10. Was the PHA performed by a team with expertise in engineering and process operations and did the team include appropriate personnel? [68.67(d)]	☒Y ☐N ☐N/A
11. Has the owner or operator established a system to promptly address the team's findings and recommendations; assured that the recommendations are resolved in a timely manner and documented; documented what actions are to be taken; completed actions as soon as possible; developed a written schedule of when these actions are to be completed; and communicated the actions to operating, maintenance, and other employees whose work assignments are in the process and who may be affected by the recommendations? [68.67(e)]	☒Y ☐N ☐N/A
12. Has the PHA been updated and revalidated by a team every five years after the completion of the initial PHA to assure that the PHA is consistent with the current process? [68.67(f)]	☒Y ☐N ☐N/A
13. Has the owner or operator retained PHAs and updates or revalidations for each process covered, as well as the resolution of recommendations for the life of the process? [68.67(g)]	☒Y ☐N ☐N/A
Prevention Program- Operating procedures [68.69]	
14. Has the owner or operator developed and implemented written operating procedures that provide instructions or steps for conducting activities associated with each covered process consistent with the safety information? [68.69(a)]	☒Y ☐N ☐N/A

15 Do the procedures address the following: [68.69(a)] Steps for each operating phase: [68.69(a)(1)] ☒ Initial Startup? [68.69(a)(1)(i)] ☒ Normal operations? [68.69(a)(1)(ii)] ☒ Temporary operations? [68.69((a)(1)(iii)] ☒ Emergency shutdown including the conditions under which emergency shutdown is required, and the assignment of shutdown responsibility to qualified operators to ensure that emergency shutdown is executed in a safe and timely manner? [68.69(a)(1)(iv)] ☐ For ammonia refrigeration systems, the procedures include an emergency action plan pursuant to 29 CFR 1910.38(a) or an emergency response plan pursuant to 29 CFR 1910.120(q) and 40 CFR 68.95. ☒ Emergency operations? [68.69(a)(1)(v)] ☒ Normal shutdown? [68.68(a)(1)(vi)] ☒ Startup following a turnaround, or after emergency shutdown? [68.69(a)(1)(vii)] Operating limits: [68.69(a)(2)] ☒ Consequences of deviations [68.69(a)(2)(i)] ☒ Steps required to correct or avoid deviation? [68.69(a)(2)(ii)] Safety and health considerations: [68.69(a)(3)] ☒ Properties of, and physical hazards presented by, the chemicals used in the process [68.69(a)(3)(i)] ☒ Precautions necessary to prevent exposure, including engineering controls, administrative controls, and personal protective equipment? [68.69(a)(3)(ii)] ☐ For ammonia refrigeration systems, only authorized persons have access to refrigeration machinery room and the ability to alter safety settings on equipment. ☐ For ammonia refrigeration systems, written procedures are in place for proper use and care of personal protective equipment. ☒ Control measures to be taken if physical contact or airborne exposure occurs? [68.69(a)(3)(iii)] ☒ Quality control for raw materials and control of hazardous chemical inventory levels? [68.69(a)(3)(iv)] ☒ Any special or unique hazards? [68.69(a)(3)(v)] ☒ Safety systems and their functions? [68.69(a)(4)]	☒Y ☐N ☐N/A
16. Are operating procedures readily accessible to employees who are involved in a process? [68.69(b)]	☒Y ☐N ☐N/A
17. Has the owner or operator certified annually that the operating procedures are current and accurate and that procedures have been reviewed as often as necessary? [68.69(c)]	☐Y ☒N ☐N/A
18. Has the owner or operator developed and implemented safe work practices to provide for the control of hazards during specific operations, such as lockout/tagout? [68.69(d)]	☒Y ☐N ☐N/A
Prevention Program - Training [68.71]	
19 Has each employee involved in operating a process, and each employee before being involved in operating a newly assigned process, been initially trained in an overview of the process and in the operating procedures? [68.71(a)(1)]	☒Y ☐N ☐N/A
20. Did initial training include emphasis on safety and health hazards, emergency operations including shutdown, and safe work practices applicable to the employee's job tasks? [68.71(a)(1)]	☒Y ☐N ☐N/A

21. In lieu of initial training for those employees already involved in operating a process on June 21, 1999, an owner or operator may certify in writing that the employee has the required knowledge, skills, and abilities to safely carry out the duties and responsibilities as specified in the operating procedures [68.71(a)(2)]	☒Y ☐N ☐N/A
22. Has refresher training been provided at least every three years, or more often if necessary, to each employee involved in operating a process to assure that the employee understands and adheres to the current operating procedures of the process? [68.71(b)]	☒Y ☐N ☐N/A
23, Has owner or operator ascertained and documented in record that each employee involved in operating a process has received and understood the training required? [68.71(c)]	☒Y ☐N ☐N/A
24. Does the prepared record contain the identity of the employee, the date of the training, and the means used to verify that the employee understood the training? [68.71(c)]	☒Y ☐N ☐N/A
Prevention Program - Mechanical Integrity [68.73]	
25. Has the owner or operator established and implemented written procedures to maintain the on-going integrity of the process equipment listed in 68.73(a)? [68.73(b)]	☒Y ☐N ☐N/A
26. Has the owner or operator trained each employee involved in maintaining the on-going integrity of process equipment? [68.73(c)]	☒Y ☐N ☐N/A
27. Performed inspections and tests on process equipment? [68.73(d)(1)]	☒Y ☐N ☐N/A
28. Followed recognized and generally accepted good engineering practices for inspections and testing procedures? [68.73(d)(2)]	☒Y ☐N ☐N/A
29. Ensured the frequency of inspections and tests of process equipment is consistent with applicable manufacturers' recommendations, good engineering practices, and prior operating experience? [68.73(d)(3)]	☒Y ☐N ☐N/A
30. Documented each inspection and test that had been performed on process equipment, which identifies the date of the inspection or test, the name of the person who performed the inspection or test, the serial number or other identifier of the equipment on which the inspection or test was performed, a description of the inspection or test performed, and the results of the inspection or test? [68.73(d)(4)]	☒Y ☐N ☐N/A
31. Corrected deficiencies in equipment that were outside acceptable limits defined by the process safety information before further use or in a safe and timely manner when necessary means were taken to assure safe operation? [68.73(e)] For ammonia refrigeration systems: ☐ A preventative maintenance program is in place to, among other things, detect and control: o corrosion, o deteriorated vapor barriers, o ice buildup, o pipe hammering, and o to inspect integrity of equipment/pipe supports. ☐ All piping system openings, except the relief header, are plugged or capped, or valve is locked. ☐ Equipment, piping, and valves are labeled for easy identification, and pressure vessels have legible, accessible nameplates. ☐ All atmospheric pressure relief valves have been replaced in the last five years with visible confirmation of accessible pressure relief valves [Note: Replacement every five years is general rule, but there are two other options in IIAR Bulletin 110, 6.6.3].	☒Y ☐N ☐N/A
32. Assured that equipment as it was fabricated is suitable for the process application for which it will be used in the construction of new plants and equipment? [68.73(f)(1)]	☒Y ☐N ☐N/A
33. Performed appropriate checks and inspections to assure that equipment was installed properly and consistent with design specifications and the manufacturer's instructions? [68.73(f)(2)]	☒Y ☐N ☐N/A

34. Assured that maintenance materials, spare parts and equipment were suitable for the process application for which they would be used? [68.73(f)(3)]	☒Y ☐N ☐N/A
Prevention Program - Management Of Change [68.75]	
35. Has the owner or operator established and implemented written procedures to manage changes to process chemicals, technology, equipment, and procedures, and changes to stationary sources that affect a covered process? [68.75(a)]	☒Y ☐N ☐N/A
36. Do procedures assure that the following considerations are addressed prior to any change: [68.75(b)] ☒ The technical basis for the proposed change? [68.75(b)(1)] ☒ Impact of change on safety and health? [68.75(b)(2)] ☒ Modifications to operating procedures? [68.75(b)(3)] ☒ Necessary time period for the change? [68.75(b)(4)] ☒ Authorization requirements for the proposed change? [68.75(b)(5)] ☐ For ammonia refrigeration systems, only authorized persons have the ability to alter safety settings on equipment. ☐ For ammonia refrigeration systems, all changes to automation systems (programmable logic controls and/or supervisory control and data acquisition systems), if present, are subject to management of change procedures.	☒Y ☐N ☐N/A
37. Were employees, involved in operating a process and maintenance, and contract employees, whose job tasks would be affected by a change in the process, informed of, and trained in, the change prior to start-up of the process or affected parts of the process? [68.75(c)]	☐Y ☒N ☐N/A
38. If a change resulted in a change in the process safety information, was such information updated accordingly? [68.75(d)]	☒Y ☐N ☐N/A
39. If a change resulted in a change in the operating procedures or practices, had such procedures or practices been updated accordingly? [68.75(e)]	☒Y ☐N ☐N/A
Prevention Program - Pre-startup Safety Review [68.77]	
40. If the facility installed a new stationary source, or significantly modified an existing source, (as discussed at 68.77(a)) did it perform a pre-startup safety review prior to the introduction of a regulated substance to a process to confirm: [68.77(b)] ☐ Construction and equipment was in accordance with design specifications? [68.77(b)(1)] ☐ Safety, operating, maintenance, and emergency procedures were in place and were adequate? [68.77(b)(2)] ☐ For new stationary sources, a process hazard analysis had been performed and recommendations had been resolved or implemented before startup? [68.77(b)(3)] ☐ Modified stationary sources meet the requirements contained in management of change? [68.77(b)(3)] ☒ Training of each employee involved in operating a process had been completed? [68.77(b)(4)]	☐Y ☒N ☐N/A
Prevention Program - Compliance audits [68.79]	
41. Has the owner or operator certified that the stationary source has evaluated compliance with the provisions of the prevention program at least every three years to verify that the developed procedures and practices are adequate and being followed? [68.79(a)]	☒Y ☐N ☐N/A
42. Has the audit been conducted by at least one person knowledgeable in the process? [68.79(b)]	☒Y ☐N ☐N/A

43. Are the audit findings documented in a report? [68.79(c)]	☒Y ☐N ☐N/A
44. Has the owner or operator promptly determined and documented an appropriate response to each of the findings of the audit and documented that deficiencies had been corrected? [68.79(d)]	☒Y ☐N ☐N/A
45. Has the owner or operator retained the two most recent compliance reports? [68.79(e)]	☒Y ☐N ☐N/A
Prevention Program - Incident investigation [68.81]	
46. Has the owner or operator investigated each incident that resulted in, or could reasonably have resulted in a catastrophic release of a regulated substance? [68.81(a)]	☐Y ☐N ☒N/A
47. Were all incident investigations initiated not later than 48 hours following the incident? [68.81(b)]	☐Y ☐N ☒N/A
48. Was an accident investigation team established and did it consist of at least one person knowledgeable in the process involved, including a contract employee if the incident involved work of a contractor, and other persons with appropriate knowledge and experience to thoroughly investigate and analyze the incident? [68.81(c)]	☐Y ☐N ☒N/A
49. Was a report prepared at the conclusion of every investigation? [68.81(d)]	☐Y ☐N ☒N/A
50. Does every report include: [68.81(d)] ☐ Date of incident? [68.81(d)(1)] ☐ Date investigation began? [68.81(d)(2)] ☐ A description of the incident? [68.81(d)(3)] ☐ The factors that contributed to the incident? [68.81(d)(4)] ☐ Any recommendations resulting from the investigation? [68.81(d)(5)]	☐Y ☐N ☒N/A
51. Has the owner or operator established a system to address and resolve the report findings and recommendations, and are the resolutions and corrective actions documented? [68.81(e)]	☐Y ☐N ☒N/A
52. Was the report reviewed with all affected personnel whose job tasks are relevant to the incident findings including contract employees where applicable? [68.81(f)]	☐Y ☐N ☒N/A
53. Has the owner or operator retained incident investigation reports for at least five years? [68.81(g)]	☐Y ☐N ☒N/A

Section D - Employee Participation [68.83]

1. Has the owner or operator developed a written plan of action regarding the implementation of the employee participation required by this section? [68.83(a)]	☒Y ☐N ☐N/A
2. Has the owner or operator consulted with employees and their representatives on the conduct and development of process hazards analyses and on the development of the other elements of process safety management in chemical accident prevention provisions? [68.83(b)]	☒Y ☐N ☐N/A
3. Has the owner or operator provided to employees and their representatives access to process hazards analyses and to all other information required to be developed under the chemical accident prevention rule? [68.83(c)]	☒Y ☐N ☐N/A

Section E - Hot Work Permit [68.85]

1. Has the owner or operator issued a hot work permit for each hot work operation conducted on or near a covered process? [68.85(a)]	☐Y ☐N ☒N/A
2. Does the permit document that the fire prevention and protection requirements in 29CFR 1910.252(a) have been implemented prior to beginning the hot work operations? [68.85(b)]	☐Y ☐N ☒N/A

3.	Does the permit indicate the date(s) authorized for hot work and the object(s) upon which hot work is to be performed? [68.85(b]	☐Y	☐N	☒N/A
4.	Are the permits being kept on file until completion of the hot work operations? [68.85(b)]	☐Y	☐N	☒N/A

Section F - Contractors [68.87]

1.	Has the owner or operator obtained and evaluated information regarding the contract owner or operator's safety performance and programs when selecting a contractor? [68.87(b)(1)]	☒Y	☐N	☐N/A
2.	Informed contract owner or operator of the known potential fire, explosion, or toxic release hazards related to the contractor's work and the process? [68.87(b)(2)]	☒Y	☐N	☐N/A
3.	Explained to the contract owner or operator the applicable provisions of the emergency response or the emergency action program? [68.87(b)(3)]	☒Y	☐N	☐N/A
4.	Developed and implemented safe work practices consistent with §68.69(d), to control the entrance, presence, and exit of the contract owner or operator and contract employees in the covered process areas? [68.87(b)(4)]	☒Y	☐N	☐N/A
5.	Periodically evaluated the performance of the contract owner or operator in fulfilling their obligations (as described at 68.87(c)(1) – (c)(5))? [68.87(b)(5)]	☒Y	☐N	☐N/A

Section G - Emergency Response [68.90 - 68.95]

Developed and implemented an emergency response program as provided in 40 CFR 68.90-68.95? ☒S ☐M ☐U ☐ N/A

Comments:

1.	Is the facility designated as a "first responder" in case of an accidental release of regulated substances"	☐Y	☒N	☐N/A
1.a.	If the facility is not a first responder:			
1.a.(1)	For stationary sources with any regulated substances held in a process above threshold quantities, is the source included in the community emergency response plan developed under 42 U.S.C. 11003? [68.90(b)(1)] ☐ For ammonia refrigeration systems, emergency response communication has occurred with LEPCs/local responders (although there is no explicit language in 40 CFR Part 68 for this, such communication is supported by industry standards and expected under the General Duty Clause).	☒Y	☐N	☐N/A
1.a.(2)	For stationary sources with only regulated flammable substances held in a process above threshold quantities, has the owner or operator coordinated response actions with the local fire department? [68.90(b)(2)]	☒Y	☐N	☐N/A
1.a.(3)	Are appropriate mechanisms in place to notify emergency responders when there is need for a response? [68.90(b)(3)]	☒Y	☐N	☐N/A
2.	An emergency response plan is maintained at the stationary source and contains the following? [68.95(a)(1)] ☐ Procedures for informing the public and local emergency response agencies about accidental releases? [68.95(a)(1)(i)] ☐ Documentation of proper first-aid and emergency medical treatment necessary to treat accidental human exposures? [68.95(a)(1)(ii)] ☐ Procedures and measures for emergency response after an accidental release of a regulated substance? [68.95(a)(1)(iii)]	☐Y	☐N	☒N/A
3.	The emergency response plan contains procedures for the use of emergency response equipment and for its inspection, testing, and maintenance? [68.95(a)(2)]	☐Y	☐N	☒N/A

4.	The emergency response plan requires, and there is documentation of, training for all employees in relevant procedures? [68.95(a)(3)]	☐Y ☐N ☒N/A
5.	The owner or operator has developed and implemented procedures to review and update, as appropriate, the emergency response plan to reflect changes at the stationary source and ensure that employees are informed of changes? [68.95(a)(4)]	☐Y ☐N ☒N/A
6.	Did the owner or operator use a written plan that complies with other Federal contingency plan regulations or is consistent with the approach in the National Response Team's Integrated Contingency Plan Guidance (''One Plan'')? If so, does the plan include the elements provided in paragraph (a) of 68.95, and also complies with paragraph (c) of 68.95? [68.95(b)]	☐Y ☐N ☒N/A
7.	Has the emergency response plan been coordinated with the community emergency response plan developed under EPCRA? [68.95(c)] ☐ For ammonia refrigeration systems, emergency response communication has occurred or has been attempted with LEPCs and local responders. [*Note: Until the regulations change, it may not be appropriate to seek penalties for this item. There is no explicit language in 40 CFR Part 68 requiring such communication, although such communication is supported by industry standards and expected under the General Duty Clause*.]	☐Y ☐N ☒N/A

Section H – Risk Management Plan [40 CFR 68.190 – 68.195]

1.	Does the single registration form include, for each covered process, the name and CAS number of each regulated substance held above the threshold quantity in the process, the maximum quantity of each regulated substance or mixture in the process (in pounds) to two significant digits, the five- or six-digit NAICS code that most closely corresponds to the process and the Program level of the process? [68.160(b)(7)]	☒Y ☐N ☐N/A
2.	Did the facility assign the correct program level(s) to its covered process(es)? [68.160(b)(7)]	☒Y ☐N ☐N/A
3.	Has the owner or operator reviewed and updated the RMP and submitted it to EPA [68.190(a)]? Reason for update: ☒ Five-year update. [68.190(b)(1)] ☐ Within three years of a newly regulated substance listing. [68.190(b)(2)] ☐ At the time a new regulated substance is first present in an already regulated process above threshold quantities. [68.190(b)(3)] ☐ At the time a regulated substance is first present in an new process above threshold quantities. [68.190(b)(4)] ☐ Within six months of a change requiring revised PHA or hazard review. [68.190(b)(5)] ☐ Within six months of a change requiring a revised OCA as provided in 68.36. [68.190(b)(6)] ☐ Within six months of a change that alters the Program level that applies to any covered process. [68.190(b)(7)]	☒Y ☐N ☐N/A
4.	If the owner or operator experienced an accidental release that met the five-year accident history reporting criteria (as described at 68.42) subsequent to April 9, 2004, did the owner or operator submit the information required at 68.168, 68.170(j) and 68.175(l) within six months of the release or by the time the RMP was updated as required at 68.190, whichever was earlier. [68.195(a)]	☐Y ☐N ☒N/A
5.	If the emergency contact information required at 68.160(b)(6) has changed since June 21, 2004, did the owner or operator submit corrected information within thirty days of the change? [68.195(b)]	☐Y ☐N ☒N/A

Other items:
For fiscal years 2017-2019, EPA will be confirming that the minimum safety measures listed below are in place at facilities that have ammonia refrigeration systems. The measures also have been incorporated into the general checklist, above. The bare minimum measures must be in place, regardless of an ammonia refrigeration system's age or size, for the system to meet the requirements of 40 C.F.R. Part 68 or the General Duty Clause. This is not intended to be a complete list of important safety measures but rather a subset of easily verifiable items that EPA and IIAR believe could most help facilities prevent ammonia releases and prepare for any releases that do occur. The list was developed with the assistance of IIAR and all ten EPA regions.

The second list (in green) contains other important safety measures that should be assessed if at all possible. This list also was developed with IIAR's input.

List of Bare Minimum Safety Measures to Include in Settlements and Inspections

Identifying Hazards
Hazard Addressed: Releases or safety deficiencies that stem from a failure to identify hazards in design/operation of system

- ☐ Facility has completed a process hazard analysis or review.

Operating Activities:
Hazard Addressed: High risk of release from operating or maintenance activity

- ☐ System has self-closing/quick closing valves on oil pots.
- ☐ Facility has written procedures for maintenance and operation activities.
- ☐ Only authorized persons have access to machinery room and the ability to alter safety settings on equipment.

Maintenance/Mechanical Integrity:
Hazard Addressed: Leaks/releases from maintenance neglect

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

Machinery Room and System Design
Hazard Addressed: Inability to isolate and properly vent releases

- ☐ The System(s) has/have emergency shut-off and ventilation switches outside each machinery room.
- ☐ The machinery room(s) has/have functional, tested, ventilation. Air inlets are positioned to avoid recirculation of exhaust air and ensure sufficient inlet air to replace exhausted air.
- ☐ Documentation exists to show that pressure relief valves that have a common discharge header have adequately sized piping to prevent excessive backpressure on relief valves, or if built prior to 2000, have adequate diameter based on the sum of the relief valve cross-sectional areas.

Emergency Actions
Hazard Addressed: Inability to regain control and reduce release impact

- ☐ Critical shutoff valves are accessible, and a schematic is in place to show responders where to access them.
- ☐ EPCRA Tier II reporting is up to date.

Additional Recommended Items that Should Be Assessed During Inspections and Enforcement

Identifying Hazards

- ☐ For systems that employ hot gas defrost, the process hazard analysis/review includes an analysis of, and identifies, the engineering and administrative controls for the hazards associated with the potential of vapor propelled liquid slugs and condensation-induced hydraulic shock events.

Operating Activities and Maintenance/Mechanical Integrity

☐ Written procedures are in place for proper use and care of personal protective equipment.

☐ If respirators are used, facilities know the location of their respirators, and they are inspected and maintained per manufacturer or industry standards.

☐ All changes to automation systems (programmable logic controls and/or supervisory control and data acquisition systems), if present, are subject to management of change procedures.

Machinery Room and System Design

☐ The facility has engineering controls in place to protect equipment and piping against overpressure due to hydrostatic expansion of trapped liquid refrigerant. Administrative controls are acceptable where hydrostatic overpressure can occur only during maintenance operations.

☐ Eyewash station(s) and safety shower(s) is/are present and functional.

Emergency Actions

☐ Emergency response communication has occurred or has been attempted with the Local Emergency Planning Committee and local responders.

☐ The facility has an Emergency Action Plan pursuant to 29 C.F.R. § 1910.38(a) or an Emergency Response Plan pursuant to 29 C.F.R. § 1910.120(q) and 40 C.F.R. § 68.95.