

CAA112(r) INSPECTION REPORT

Name: Ingredion Incorporated Cedar Rapids Plant	
Address: 1001 First Street SW, Cedar Rapids, IA 52404	Date of Inspection: May 14-15, 2024
County: Linn	Case No: 24IA0514
Phone: (319) 398-3700	RMP No: 100000127695
High Risk: Yes	FRS No: 110000415168
CAA Title V: Yes 04-TV-001R2	Program Level: Program 3
Mailing Address: 1001 First Street SW, Cedar Rapids, IA 52404	
Process: Modified Starch, NAICS Code: 311221 Wet Corn Milling	

SUMMARY OF OBSERVATIONS

A review of the Ingredion Incorporated Cedar Rapids Plant documents and visual inspection of the facility did not reveal any preliminary findings.

INTRODUCTION

Tim Evans and I, Dave Hensley, Compliance Inspectors with the U.S. Environmental Protection Agency (EPA), Region VII, inspected Ingredion located in Cedar Rapids, Iowa on May 14 -15, 2024.

I announced for the inspection on May 10, 2024, to Mr. Robert Garrison, the person listed in the Risk Management Plan as responsible for Part 68 Implementation, and Mr. Andrew Paulsen the Emergency Contact listed. I asked that employees and any employee representative be notified of the inspection and informed that they are allowed to participate in the inspection. On Monday morning, May 13, 2024, I received an email from Mr. Paul Blocklinger, Environmental, Safety, & Health Manager at Ingredion verifying receipt of the announcement and providing directions to the visitor parking.

Ingredion was selected for inspection because of the quantity of ethylene oxide handled and the number of residents in the worst-case-scenario.

We conducted the inspection to determine if the facility was in compliance with Section 112(r) of the Clean Air Act (CAA), as amended in 1990. The inspection also included reporting provisions of the Emergency Planning and Community Right to Know Act (EPCRA) and the release reporting provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

EPA's regulations describing how these laws are to be implemented are found in the Code of Federal Regulations, Title 40, Part 68 (CAA), 355, 370, and 372 (EPCRA). The law and the implementing regulations 40 CFR 68, Chemical Accident Prevention Program (CAPP) require that the facilities must submit a complete Risk Management Plan (RMP) to the EPA for those regulated chemicals they process in amounts above the applicable threshold quantities after June 21, 1999, and to implement the program described in the RMP.

The finalized inspection report as well as the photos and photo locations (Appendix #2) will be transmitted via e-mail to the facility owner/ operator. Forms completed during this inspection is in Appendix #1. A copy of this inspection report, documents obtained, photographs taken during the inspection, checklists, and completed forms will be maintained in the EPA facility file.

HISTORY OF BUSINESS

Ingredion is on a site that has been processing corn for about 130 years.

Mr. Blocklinger described the facility as operating two main manufacturing components: Grind and Utilities, Starch, Dried Starch, Wet Modified Starch – produced through acid-treatment, or thin boiling. According to the facility’s Risk Management Plan, “The Ingredion Cedar Rapids plant utilizes a corn wet milling process to manufacture industrial starches. The manufacturing process for hydroxyethyl starch uses ethylene oxide, a regulated toxic substance which is stored on site above the EPA threshold quantity. The main components of the modified starch process are rail unloading, storage and process tanks, pumps, compressor, and associated piping. Ingredion has established limits on the number of rail cars that will be onsite at one time.”

According to Mr. Blocklinger and Ms. Kroemer, Ingredion installed a new ethylene oxide tank at the facility. Mr. Blocklinger and Ms. Kroemer stated that the facility discontinued manufacturing food-grade modified starch in approximately January of 2021, which included discontinuing the ethanol operation.

Ingredion operates 24 hours each day, seven days each week. The facility is located on approximately 23 acres. Mr. Blocklinger stated that Ingredion operates 60 facilities worldwide, including 16 facilities in the U.S. and 5 facilities in Canada.

Cedar Rapids, Iowa is the second largest city in Iowa at 126,326 people, the largest corn-processing city in the world, one of the leading manufacturing regions in the United States, and one of the leading bio-processing and food ingredient centers in North America (https://www.cedar-rapids.org/discover_cedar_rapids/about_us/index.php).

PERSONS INTERVIEWED AND INDIVIDUAL RESPONSIBILITIES

Name	Title
Liane Kroemer	Environmental Lead
Paul Blocklinger	Environmental Health and Safety Manager
Jonathan Ibarra	Starch Unit Manager and Acting Plant Manager
Gary Netolicky	Starch Department Manager/Operation Lead
Albert Pollmeier	Lead Process Engineer
Lori Garin	Quality Assurance
Alex Druien	Reliability Engineer
Robert Garrison	Part 68 Implementation Contact
Andrew Paulsen	Emergency Contact
Jeff Madsen	Senior Process Engineer (Contingency Plan)
Andrew Paulsen	Process Engineer (Contingency Plan)

OPENING CONFERENCE

At approximately 8:35 a.m. on May 14, 2024, Mr. Evans and I conducted a visual inspection from the public right-of-way with the use of a government owned vehicle on the south, west and part of the east perimeters of the Ingredion facility; Ingredion is bordered by the Cedar River on the east side of the

facility. Mr. Evans and I arrived at the facility visitor parking area at approximately 8:45 a.m. and met Simon Stecker, Environmental Specialist, Iowa Department of Natural Resources.

On May 14, 2024, at 9:00 a.m. Messrs. Stecker and Evans and I arrived at. We were met by an employee in a visitor reception area. The employee showed us a ten-minute safety video and gave us a related test. We signed into the visitor log. Mr. Paul Blocklinger met and led us to a conference room where we met Liane Kroemer, Environmental Lead, Albert Pollmeier, Lead Process Engineer, and Jonathan Ibarra, Starch Unit Manager and Acting Plant Manager, who joined us for the in briefing. Mr. Evans and I presented our credentials and provided business cards to Ms. Kroemer and Messrs. Blocklinger, Pollmeier, and Ibarra. Ms. Kroemer and Messrs. Blocklinger, Pollmeier, and Ibarra acted as the facility representatives during the on-site inspection activities.

I conducted an opening conference and described our need to review documentation, conduct interviews, and do a field tour. I presented a Notice of Inspection form that explained the reason for the inspection. Paul Blocklinger signed this form.

Field Tour

At about 1:00 p.m. on May 14, 2024, we began a field tour. We walked past some hydrochloric acid tanks. I noticed white staining running down the sides. I asked what it was and it was explained that rain water stains these tanks. We went to where ethylene oxide rail cars are unloaded, Photo DSCN1618.JPG and Photo DSCN1619.JPG. I observed ethylene oxide monitors, fire water, access control, and other safety systems in the unloading area. I noticed what appeared to be a portable generator near the unloading area. I asked what it was. I was told it is a generator for portable pumps that are used in the area as stormwater control, and that hot work practices are followed when it is in use near flammable chemicals. We then followed the loading pipes to the ethylene oxide storage tank. It was noted that Ingredion had installed a new tank. I observed ethylene oxide monitors, fire water, access control, and other safety systems near the storage tank. Liquid Nitrogen is used in conjunction with the ethylene oxide storage tank and around valves on lines used to transport ethylene oxide to reactors. Ethylene oxide alarms are set at 20 parts per million (low concentration) and 40 parts per million (high concentration). According to Mr. Pollmeier, there are two alarms used in the ethylene oxide storage tank area and two alarms in the railcar unloading area. We continued to follow the ethylene oxide piping to the reactor buildings. I observed that ethylene oxide piping was labeled, Photo DSCN1620.JPG. Four alarms were in the Building 97 reactor area; it should be noted that there are four alarms in the Building 96 reactor area, also. We saw an eye wash station adjacent to Tank 3 was last inspected in May of 2023. According to Ms. Kroemer, the eye wash stations throughout the facility were scheduled to be inspected and tested the week of May 20, 2024. Fire Extinguishers in Building 97 had been inspected in April of 2024. I had a question about how many rail cars were stored on site at any one time. We walked to the rail car storage area. No ethylene oxide rail cars were present at the time of this tour. I later was provided detailed information on Ingredion's ethylene oxide rail car storage that was claimed confidential business information that is in EPA confidential business information folder.

EPCRA TIER II

Mr. Stecker provided EPA with the last three EPCRA Tier II Toxic Chemical Inventory reports, for the calendar years of 2023, 2022, and 2021. During the inspection, I asked how the inventories on the EPCRA Tier II reports were calculated. Ingredion stated that they use systems in place to monitor chemical quantities and calculate daily averages and maximums. We reviewed these systems and quantities and requested related documents which were claimed confidential business information and

are not included in this report. They are available in the EPA confidential business information folder in the inspection file. Ingredient appears to be in compliance with EPCRA Sections 311 and 312.

HAZARD ASSESSMENT

Ingredient used RMP*Comp to calculate its off-site consequence analysis distance to end points. Ingredient used ethylene oxide capacity data and facility design data, claimed as confidential business information, to do a worst-case scenario and alternate case scenario. I requested documentation of the hazard assessment. This was provided and claimed confidential business information. This documentation is maintained in EPA's confidential business information file. The hazard assessment appeared to meet the requirements.

PROCESS SAFETY INFORMATION (PSI)

I asked how Ingredient gathered and maintains PSI. They explained they use two digital filling systems. According to Mr. Blocklinger, a new database was launched at Ingredient in January of 2024. The facility is still using an old database and is gradually transitioning over to use of the new database, Cority. We observed and collected multiple pieces of process safety information during the inspection.

PROCESS HAZARD ANALYSIS (PHA)

Ingredient uses What-if technology to conduct process PHA for rail storage of ethylene oxide and Hazard and Operability Study (HAZOP) for all other ethylene oxide processes. The first facility PHA was developed in 1993. The current PHA is dated 7/18/19. The facility is maintaining a 5-year cycle for conducting PHAs and is updated earlier if necessary, according to Mr. Pollmeier. According to Mr. Blocklinger, 12 operators running processes are chosen to perform the PHA; the list of Ingredient operators is included in the 2019 PHA.

STANDARD OPERATING PROCEDURES (SOPs)

Ingredient developed and implemented written operating procedures that provide instructions or steps for conducting activities associated with part of Lock Out Tag Out - Energy Isolation Procedure. Procedure CR-CH-WI-002 addresses the steps related to the ethylene oxide Unloading/Introducing ethylene oxide into storage.

TRAINING

I asked what a new employee's training process was. Lori Garin gave a detailed description of the training program that includes computer-based training and classroom training. An initial training is provided for each employee before being involved in operating a newly assigned process that includes an overview of the process and the operating procedures. Refresher training is provided at least every three years to ensure the employees understand and adhere to the current operating procedures of the RMP process. I requested training records for two employees working in the RMP process during an event that triggered an incident investigation. These were provided and claimed confidential business information. Reviewing these did not identify concerns.

MECHANICAL INTEGRITY

We discussed mechanical integrity with Alex Druen, Reliability Engineer. Ingredient has established and implemented written procedures to maintain the on-going integrity of process equipment. Ingredient uses third party inspectors with the appropriate certifications. Inspection intervals are set per industry standards. We reviewed a few inspection reports in Ingredient's electronic document system via the screen in the conference room. Each inspection report reviewed identified 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. We discussed Ingredion's mechanical integrity inspection process that led to identifying and correcting deficiencies in equipment before it became outside acceptable limits defined by their process safety information, by installing a new ethylene oxide tank.

MANAGEMENT OF CHANGE (MOC)

We discussed management of change with Albert Pollmeier, Lead Process Engineer. Ingredion has a written procedure to manage changes to process chemicals. The procedure is set up to assure that the technical basis for the proposed change, impact of change on safety and health, modifications to operating procedures, necessary time period for the change and, authorization requirements for the proposed change are addressed prior to any change. I asked for and was provided a list of MOCs that involved the RMP process. Ingredion provided a list of 27 MOCs that was claimed confidential business information. Further details can be found in the EPA confidential business information inspection file. Employees whose work is impacted by an MOC are notified of the change. According to Mr. Blocklinger, changes in the process safety information are usually found as an action item. Action Items are tracked in an electronic system.

PRE-STARTUP SAFETY REVIEW (PSSR)

Ingredion had performed a pre-startup safety review for a change on January 19, 2024. Reviewing this PSSR identified no concerns.

COMPLIANCE AUDIT

Mr. Evans reviewed the June 29-July 1, 2020, and June 20, 2023, Compliance Audit Reports. No issues were observed as part of the review of the compliance audits. Ingredion employees Paul Blocklinger and Liane Kroemer were involved with compliance audits. Audit findings are documented in the 2020 and 2023 reports as Appendix B. Recommendations and Action Items were listed in the 2023 audit report. Reminders for Action Items are sent and received electronically through e-mail.

INCIDENT INVESTIGATION

May 19, 2020, was the last time the facility contacted the National Response Center (NRC) about a 1.7 pound release of ethylene oxide. Since the release was less than 10 pounds, the facility was not required to report the release to NRC. However, the facility was issued an air permit through Linn County, who requires reporting of a release. I asked for a list of incident investigations conducted in the RMP Process. Ingredion provided a list and claimed it as confidential business information. Further information can be found in EPA's confidential business information inspection file. We discussed the incident investigations, and I requested and received confidential business information copies of two incident reports. Review of these reports did not identify concerns.

EMPLOYEE PARTICIPATION

I asked to review an employee participation written plan and was shown PSM, Employee Participation Policy CR-PSMWI003. Review of this plan showed that it met the requirements of 40 C.F.R. 68.83.

HOT WORK PERMIT

In order to use a digital camera as part of the visual inspection, Mr. Evans completed and signed a tool use permit. The permit was copied and collected as documents obtained during the inspection.

CONTRACTORS

Ingredion uses a widely used third party system to track contractor safety training. Potential fire, explosion, or toxic release hazards related to the contractor's work and the processes are provided as part of Ingredion contractor training. Ingredion built a computer-based training, which has been uploaded to ISN for contractor training. Contractors are required to complete Process Safety Management/Risk Management Program training prior to work at the facility. Ingredion process engineers or maintenance coordinators double check completed contract work. Behavioral-based safety inspections are routinely conducted.

EMERGENCY RESPONSE

When the Cedar Rapids Fire Department (CRFD) conducts drills, it involves mock hydrochloric acid and ethylene oxide releases. I informed facility personnel that documented drills will be required under the new rule. The emergency response plan had been coordinated with CRFD; Mr. Blocklinger shared a drill/exercise report/write up related to ethylene oxide, conducted in November of 2018. Linn Co. offers tabletop training drills. According to Mr. Blocklinger, Ingredion employees attended a Linn County Emergency Management (LCEM) training on April 30, 2024, referred to as ESF-10 Hazardous Materials Tabletop Exercise.

Jeff Madsen, Senior Process Engineer, and Andrew Paulsen, Process Engineer, assisted with answering questions about the facility Contingency Plan. Mr. Madsen was involved in management of the Incident Management Team and is currently listed as a Primary Incident Commander in the Contingency Plan. Mr. Paulsen is also listed as Primary Incident Commander in the Contingency Plan.

I asked how often Ingredion updates the emergency action plan. According to Messrs. Madsen and Paulsen, the facility employs computer software that prompts the facility to review the facility Emergency Action Plan. Mr. Paulsen stated that he receives e-mail reminders from the Intellex system to review the emergency action plan.

MANAGEMENT SYSTEM

I requested and was provided documentation of a management system that was claimed as confidential business information and is maintained in EPA confidential business information folder.

RISK MANAGEMENT PLAN

Prior to the inspection I reviewed the Ingredion Plant Risk Management Plan. I noted that an updated RMP was submitted at least every 5 years. The last two occurring on August 26, 2016 and August 26, 2021. The Ingredion Incorporated Cedar Rapids Plant Risk Management Plan appears to meet the requirements of 40 CFR Part 68 Subpart G.

CLOSING CONFERENCE

Closing Conference Participants

- Liane Kroemer – Environmental Lead
- Paul Blocklinger – Environmental Health and Safety Manager
- Alex Druien – Reliability Engineer
- Jonathan Ibarra – Starch Unit Manager and Acting Plant Manager
- Gary Netolicky – Starch Department Manager/Operation Lead
- Albert Pollmeier – Lead Process Engineer
- Lori Garin – Quality Assurance
- Dave Hensley, EPA Region 7

- Tim Evans, EPA Region 7

Building 96 (Reactor Building) – During inspection of the area adjacent to Reactor 8, Mr. Evans observed liquid dripping out of a piece of equipment onto the floor. According to Mr. Pollmeier, the liquid was dripping out of a sample port attached to an acid scrubber designated as 96 Q01 EPO. Mr. Evans asked Mr. Pollmeier what the liquid was. Mr. Pollmeier stated that the liquid was a low pH liquid (1-2 pH) due to sulphuric acid. Mr. Evans asked Mr. Pollmeier if the liquid would be collected and reused in the process within Building 96. Mr. Pollmeier stated that the liquid would not be put back into use and would be considered waste. According to Mr. Pollmeier, the liquid was disposed in a floor drain which flowed to a large tank (EQ Tank). Mr. Pollmeier stated that liquid and material within the EQ Tank are disposed to the local wastewater treatment facility.

After conferring with Mr. Evans, it was decided that he would provide Resource Conservation and Recovery Act (RCRA)-related compliance assistance to address generation of the dripping low pH liquid observed in Building 96. During the closing conference, Mr. Evans informed facility personnel that because the liquid may be below pH 2, and the facility did not intend to continue using the liquid, that it could be considered a hazardous waste. Mr. Evans discussed point of generation (the floor of Building 96); making a waste determination; contacting the local wastewater treatment facility to inform them that low pH liquid was going into the EQ Tank; waste disposed into drains within the QA Lab; Land Disposal Restrictions one-time notice to the facility file; and waste determination documentation (e.g. SDS). Mr. Pollmeier indicated that the facility would attempt to repair the scrubber sample port to prevent it from leaking. Mr. Evans shared EPA RCRA Iowa State Coordinator Kevin Snowden's contact information with Paul Blocklinger through e-mail on May 20, 2024, in case the facility had additional questions.

**DAVE
HENSLEY**

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Dave Hensley
Compliance Inspector
Chemical Accident Prevention Section
Air Branch
Enforcement & Compliance Assurance Division
Region 7 U.S. Environmental Protection Agency

**TRACEY
CASBURN**

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Tracey Casburn
Air Branch Supervisor
Enforcement & Compliance Assurance Division
Region 7 U.S. Environmental Protection Agency

APPENDICES

- 1 – Inspection Forms
- 2 – Photo Log