

Clean Air Act 112(r), Risk Management Program Inspection Report

DCP Midstream Mobile Bay Gas Plant

Coden, Alabama

July 27, 2021

1.0 Introduction

The U.S. Environmental Protection Agency's efforts to reduce the likelihood and severity of chemical accidents includes planning and legislative initiatives such as the National Contingency Plan, the Emergency Planning and Community Right-to-Know Act (EPCRA), and the Accidental Release Prevention requirements under Section 112(r) of the Clean Air Act (CAA), as amended in 1990. This report outlines an inspection of the Risk Management Program (RMP) as mandated by Section 112(r)(7) of the CAA.

The focus of this inspection was to assess compliance with RMP and EPCRA requirements for the natural gas processing operations at the DCP Midstream Mobile Bay Gas Plant (Mobile Bay Gas Plant). The inspection consisted of an examination of program documentation as well as site reviews of various aspects of facility operations. Personnel from the facility participated throughout the onsite inspection. Numerous documents were provided for review off-site. This report will provide background information about the facility and a listing of observations from the walkthrough.

2.0 Background

The Mobile Bay Gas Plant processes raw natural gas produced in offshore wells in the Gulf of Mexico to create a pipeline quality natural gas that is sent off-site via pipeline. The process also recovers natural gas liquids (NGLs) from the processing of natural gas that are sent off-site via pipeline to a fractionation facility in Louisiana. The Mobile Bay Gas Plant has a capacity to process up to 300 million standard cubic feet per day (mmscfd) but is currently processing between 70 mmscfd and 75 mmscfd of natural gas. Two separate raw natural gas inlet pipes enter the plant. One natural gas pipe comes directly from the offshore wells in the Gulf of Mexico and delivers approximately two-thirds of the feed gas to the plant. A second pipe from W&T Onshore Treating Facility delivers approximately one-third of the feed gas to the plant.

Natural gas entering from the offshore wells first passes through a slug catcher to remove entrained condensed liquids and solids before combining with the gas from the W&T Onshore Treating Facility. The combined gas then enters the molecular sieve dehydration unit to remove moisture before entering the cryogenic plant's gas-gas aluminum heat exchangers and expander compressor to decrease the temperature of the gas to -145°F. The cold natural gas then passes through the demethanizer tower to separate NGLs before being recompressed to between 900 psi and 950 psi in the compressor building and entering the Transco pipeline for delivery to downstream customers. The NGLs recovered from the bottom of the demethanizer tower are transferred to the surge tank. If carbonyl sulfate levels in the recovered NGLs are greater than 15 ppm, the NGLs are passed through a liquid-liquid amine contact tower before being pumped off-site via pipeline. Currently Mobile Bay Gas Plant produces between 2,200 and 2,400 barrels per day (bpd) of NGLs. Facility personnel indicated that they are currently

operating in an “ethane-rejection” mode of operations, where ethane (C2 fraction) is included in the residual gas stream rather than in the NGLs sent offsite.

A hot-oil system is used for regeneration of the molecular sieve dehydration units and the rich amine solution from the contact tower. Condensates generated from the regeneration of the molecular sieve dehydration units are trucked off-site while the off gas from the amine recovery still are sent to a thermal oxidizer for incineration. An emergency acid gas flare is co-located with the thermal oxidizer that treats amine recovery still off-gas in case of thermal oxidizers outages.

The original plant was constructed in 1998 and started operations in 1999. The facility’s second treatment train was removed in 2005 to bring the plant to its current design capacity. The plant has a total staff of 13 that includes four operators, three mechanics, and two instrumentation and electrical (I&E) technicians. The plant operates 24 hours per day, 7 days per week with one operator who is responsible for both monitoring the control room and conducting field rounds.

The facility does not consider themselves a first responder in case of an emergency. If an emergency occurs within the facility, employees are trained to evacuate and call 911. The responding agency for a fire at the Mobile Bay Gas Plant is the Bayou La Batre, Alabama Fire Department who last visited the plant in December 2020. The facility has a fixed fire suppression system that has been taken out of service due to the high maintenance requirements for the diesel driven fire pumps. The fixed fire suppression system includes the stormwater ponds used as a fire water source, a 390,000-gallon fire water tank, the diesel driven fire pumps, fire-water piping, and numerous water cannons placed within the facility. The fire water system also includes a fixed deluge system attached to the NGL surge tank associated with the demethanizer tower for cooling in the event of a fire.

The Mobile Bay Gas Plant is subject to the RMP requirements of 40 C.F.R. Part 68, Program Level 1 and EPCRA Sections 302 through 312. The background specifics are summarized as follows in Table 1.

Inspection Team

Inspectors: Mark Briggs, Eastern Research Group, Inc. (ERG)
Zach Good, ERG

Date of Facility Visit: July 27, 2021

Facility Identification

Name: Mobile Bay Gas Plant
Street Address: 5300 B Highway 188
City: Coden County: Mobile State: Alabama Zip: 36523
EPA Facility ID No: 1000 0006 4413

Latitude: 30.389528
Longitude: -88.172944

Name, address and phone of corporate parent company:
Owner/Operator: DCP Midstream, LP

Mailing Address: 370 17th Street
City: Denver State: CO Zip: 80202
Phone: (303) 595-3331
Webpage: <https://www.dcpmidstream.com/>

Name, title, and email of person responsible for 40 C.F.R. Part 68 implementation:

Name: James Green
Title: Health, Safety and PSM Manager
Phone: (970) 652-8712
Email: JEGreen@dcpmidstream.com

Name and title of emergency contact:

Name: Roy D. Walker
Title: Plant Supervisor
Day phone: (251) 873-5011
24-hour Phone: (251) 591-6762
Email: RDWalker@dcpmidstream.com

Name and titles of stationary source personnel involved in site inspection (*accompanied site tours, provided documents and explanations*):

Name	Title	Phone	Email
Roy Walker	Plant Supervisor	(251) 873-5011	RDWalker@dcpmidstream.com
James Green	Health, Safety and PSM Manager	(970) 652-8712	JEGreen@dcpmidstream.com

Date and Program Levels of Submitted Risk Management Plan (RMPlan)

Date of most recent submissions: August 16, 2018

Process 1 as reported in RMPlan:

Process: Natural Gas Processing

Process ID: 1000090262

Process Chemical ID: 1000112850 (Flammable Mixture)

Process Chemical Quantity: 1,750,000 pounds

Program Level as reported in RMPlan: 1

NAICS code: 21113 (Natural Gas Extraction)

3.0 Observations

The inspection of the facility evaluated compliance with various sections of the RMP regulations (40 C.F.R. Part 68, Program Level 1) and the inspection checklist included in “Guidance for Conducting Risk Management Programs Inspections under Clean Air Act Section 112(r).” The inspection included discussions with the facility representatives regarding operation of the natural gas processing units, a walk-through of the facility, and documentation associated with the facility’s most recent RMPlan. An inspection in-brief and out-brief were conducted. Observations from the RMP inspection at the facility are discussed below:

Page 3 of 6

Mobile Bay Gas Plant, Coden, AL

RMP Inspection Report

1. 40 C.F.R. § 68.48(b) requires the owner or operator to ensure that the process is designed in compliance with recognized and generally accepted good engineering practices (RAGAGEP). Compliance with Federal or state regulations that address industry-specific safe design or with industry-specific design codes and standards may be used to demonstrate compliance with this paragraph.
 - Mobile Bay Gas Plant is decommissioning their fixed fire water suppression system including their fixed fire suppression system and a deluge system on the demethanizer bottoms surge tank. API 2510 (2001), Section 10.3.2 states, “LPG storage vessels shall be protected by water deluge systems, fixed monitors, water spray systems, or any combination of these systems.”
 - A copy of the Fire Safety Analysis (FSA) for the Mobile Bay Gas Plant was requested to determine if decommissioning the fire suppression system within the plant was appropriate; however, an FSA was not provided. According to API 2510 (2001), Section 10.1:

“Fire protection provisions shall be based on a safety analysis of local conditions, exposure from or to other sites, availability of a water supply, and effectiveness of fire brigades and fire departments. The analysis shall include possible but realistic accident scenarios that may occur, including scenarios of vapor release, ignition, and fire.”
- Section 10.3 of API 2510 (2001) further states that, “[S]torage facilities for LPG shall be provided with a fire water system unless a safety analysis shows this protection to be unnecessary or impractical.” Without the FSA, no documentation is available to determine if decommissioning the existing fixed fire suppression system is appropriate.
- An on-going hot oil leak was present on a flange associated with the E-202A/E-202B Regen Gas Heater. A multi-wire wrap and leak sealant were applied to the flange but according to the Plant Supervisor the leak is on-going and cannot be fully repaired until the unit is taken out of service and that date has not been determined. Section 5.12 of API 570 (2009) states flanged joints that have been clamped and pumped with sealant should be checked for leakage at the bolts, as fasteners subjected to leakages may corrode or crack (e.g., caustic cracking). Section 5.12 of API 570 states that questionable fasteners should be verified or renewed.
 - Localized corrosion was observed on flow control valve LV-3205 controlling flow of NGL to the demethanizer bottoms surge tank and general corrosion was observed on level measurement equipment on the flare surge drum. According to the Plant Supervisor, corrosion observed on the surface of metal equipment is caused by the high humidity in the area and the proximity to the Gulf of Mexico that increase chloride levels in the atmosphere.
 - Piping associated with the demethanizer tower has broken or missing vapor barriers exposing the piping to the atmosphere and causing ice buildup. Excessive ice buildup and the freeze/thaw cycles can create physical stress on piping resulting in environmental cracking. The proximity of the Mobile Bay Gas Plant to the Gulf of Mexico also exposes metal surfaces to chlorides in the atmosphere that can cause chloride stress corrosion cracking (CSCC) under insulation according to Section 6.3.7(a) of API 574 (1998).

- Piping throughout the Mobile Bay Gas Plant is not labeled to show the contents or direction of flow according to ASME A13.1 (2015).
2. 40 C.F.R. § 68.90(b)(2) states that compliance with 40 C.F.R. § 68.95 (Emergency response program) is not required for stationary sources with only regulated flammable substances held in a process above the threshold quantity, provided the owner or operator has coordinated response actions with the local fire department.
- The Mobile Gas Plant provided an Emergency Action Plan (EAP) that includes how to notify the responding Fire Departments and Agency Engagement Forms for 2020 and 2021 to verify the Fire Departments have been contacted each year. Neither the EAP nor the Agency Engagement Forms indicate if the Fire Department has been informed that the existing Mobile Bay Gas Plant fire water system has been decommissioned and that the Fire Department is responsible for supplying water to the system if a fire occurs.

Inspection Report,

Prepared by:

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Jason Dressler, Chief
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