United States Environmental Protection Agency / Region 4

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

## Circle K Terminal Alabama

Birmingham, Alabama
March 28, 2023

## 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 the RMP for the covered process of butane blending at Circle K Terminal Alabama (Facility) located at 2529 28th St SW., Birmingham, Alabama 35211. The inspection consisted of an examination of RMP process level 3 documentation such as Risk Management Plan (RMPlan), Process Safety Information (PSI), Process Hazard Analysis (PHA), Compliance Audit (CA), Operating Procedures (OP), Mechanical Integrity (MI), etc., as well as site review/facility walkthrough of the butane blending process operations. This report provides background information about the facility and lists observations.

## 2.0 Background

The Facility is owned and operated by Circle K Stores and Alimentation Couche-Tard Inc. The Facility stores butane and blends it into gasoline. This process involves flammables in excess of the regulatory threshold quantity, and is regulated by the RMP Rule, 40 CFR Part 68.

The Facility is subject to the RMP requirements of 40 CFR Part 68 process level 3 as it is not a government entity, has public receptors within its flammable endpoint, and is subject to federal Occupational Safety and Health Administration (OSHA)'s Process Safety Management (PSM) requirements. The background specifics are summarized in Table 1 presented below.

TABLE 1: Inspection Information Summary

Inspection Team

Inspector(s): Chetan Gala, US. EPA, Region 4; and Justin Stark, US. EPA, Region 4

Date of Facility Visit: March 28, 2023

## Facility Identification

Name: Circle K Terminal Alabama
Street Address: 2529 28th St SW
City: Birmingham County: Jefferson State: Alabama Zip: 35211
EPA Facility ID No: 1000 0024 6165
Latitude: 33.458024
Longitude: -86.876982

Name of corporate parent company: Circle K Stores; and Alimentation Couche-Tard Inc.

Name, title, and email of the person responsible for 40 C.F.R. Part 68 implementation:
Name: Jason Richardson
Title: Terminal Manager
Email: jrichar@circlek.com

Name and title of emergency contact:
Name: Jason Richardson, Terminal Manager
Day phone: (205) 929-4141
24-hour Phone: (205) 529-1484
Email: jrichar@circlek.com

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

| Name | Title | Phone | Email |
|---|---|---|---|
| Jason Richardson | Terminal Manager | (205) 529-1484 | jrichar@circlek.com |
| Richard Voytek | Director US Terminals | (832) 808-9507 | Richard.voytek@circlek.com |

*Note:* ***Not a union*** *facility and* ***not a responding*** *facility.*

## Date and Program Levels of Submitted Risk Management Plan

Date of initial submission: April 21, 2021 Date of recent submission: April 21, 2021

| Process ID | Process Description | Process Chemical ID | Process Program Level | Chemical Name | Quantity (lbs) | NAICS code | Flammable / Toxic |
|---|---|---|---|---|---|---|---|
| 1000115769 | Butane Blending | 1000144732 | Level 3 | Butane CAS Number: 106-97-8 | 270,000 lbs. | Process NAIC Code: 1000117183 NAIC Code: 42471NAIC Description: Petroleum Bulk Stations and Terminals | Flammable |

## 3.0 Observations

1. 40 CFR § 68.10(a)(3) requires an owner or operator of a stationary source that has more than a threshold quantity of a regulated substance in a process, as determined under § 68.115, to comply with the requirements of this part no later than the date on which a regulated substance is first present above a threshold quantity in a process.

   - The Facility was purchased on November 28, 2017 and contained two 30,000 gallons horizontal above ground butane storage tanks. According to the representative of the Facility, the Facility stored butane until in or about mid-April 2018 when they realized of their noncompliance with the RMP regulation and stopped on-site storage except for residual in the two butane tanks. Upon stopping the on-site storage, the Facility opted to directly offload butane from the delivery truck(s) and blended it into its product tank(s). This direct offloading of butane from the delivery truck(s) continued until about April 2021. The initial RMP was submitted on April 21, 2021.

2. 40 CFR § 68.65(d)(2) requires that the owner or operator must document that equipment complies with recognized and generally accepted good engineering practices (RAGAGEP).

   - Flow direction indicator/arrow label/signage on butane piping was missing. Labels and signage on the butane storage tanks next to the National Fire Protection Association (NFPA) diamond was faded and almost not recognizable. The Butane tanks did have "Non-Odorized Butane" signage.

     - The American Society of Mechanical Engineers (ASME) and American National Standards Institute (ANSI) A13.1 (2015) requires piping mains, headers, and branches to be identified with the contents and labeling that includes the physical state and direction of flow.

   - The horizontal butane tanks did not have any vehicular barrier protection for the full length of the tanks. Also, the fill piping near the base of the butane tanks did not have such protective barrier.

     - Section 6.8.1.2 of NFPA 58 (2017) requires the LP-gas containers or systems that are installed within 10 ft (3 m) of public vehicular thoroughfares must be provided with a means of vehicular barrier protection. Section 8.4.2.2 of NFPA 58 (2011) states "Protection against vehicle impact shall be provided in accordance with good engineering practice where vehicular traffic is expected at the location." According to Annex A 8.4.2.2 of NFPA 58 (2011) there are numerous effective means to provide protection against accidental vehicle impact or damage. The method selected depends upon local conditions about the kinds of traffic that can be reasonably expected and the environment surrounding the location. While additional protection over and above that used to protect the building might not be needed at some locations, others might need additional protection. Examples of such additional protection could be the following:

       - (1) Guard rails
       - (2) Steel bollards
       - (3) Raised sidewalks

- The above ground butane piping was supported with appropriate metal supports. However, there was no barrier between the piping and its supports to minimize and prevent metal to metal contact and potential for corrosion and plausible butane release. This was also one of the findings of the PHA conducted in 2021 that remains outstanding/to be addressed.

    - Section 6.11.3.11 of NFPA 58 (2017) requires the portion of aboveground piping in contact with a support or a corrosion-causing substance to be protected against corrosion. Section 6.11.3.14 (B) of NFPA 58 (2017) requires metallic piping to be protected against corrosion in accordance with Section 6.19.1.

3. 40 CFR § 68.67(a) requires the owner or operator to perform an initial PHA (hazard evaluation) on processes covered by 40 CFR § 68. The PHA must be conducted as soon as possible. A PHA completed to comply with the Occupational Safety and Health Administration (OSHA) regulation at 29 CFR 1910.119(e) is acceptable as an initial PHA.

    - The Facility was purchased on November 28, 2017, and was subject to RMP regulation at least from November 28, 2017, to April 2018. The facility once again became subject to RMP in April 2021 and registered its RMP on April 21, 2021. The initial PHA was conducted during March 16-17, 2021, with a report produced dated April 16, 2021.

4. 40 CFR § 68.67(e) requires the owner or operator to establish a system to promptly address the team's findings and recommendations; assure that the recommendations are resolved in a timely manner and that the resolution is documented; document what actions are to be taken; complete actions as soon as possible; develop a written schedule of when these actions are to be completed; communicate the actions to operating, maintenance and other employees whose work assignments are in the process and who may be affected by the recommendations or actions.

    - Some of the actions/recommendations did not include a deadline/timeline and some did not have a status update. PHA actions/recommendations tracking needs to be updated.

5. 40 CFR § 68.73(a) MI applies to the following process equipment:

    (1) Pressure vessels and storage tanks;
    (2) Piping systems (including piping components such as valves);
    (3) Relief and vent systems and devices;
    (4) Emergency shutdown systems;
    (5) Controls (including monitoring devices and sensors, alarms, and interlocks) and,
    (6) Pumps.

    40 CFR § 68.73(d) requires MI inspection and testing to be performed on process equipment. The regulation further requires the frequency of inspections and tests of process equipment to be consistent with applicable manufacturers' recommendations and good engineering practices, and more frequently if determined to be necessary by prior operating experience.

    - The Facility's MI schedule and critical equipment list indicates external inspection of vessels every 60 months (5 yrs.) and internal inspection including ultrasonic testing (UT) of vessels every 120 months (10 yrs.) to be performed by a contractor/third party. The butane tanks were inspected and tested in 2021. Given the metal thickness measurements taken during the 2021

inspection/testing indicate the metal thickness practically at minimum specification and combined with at least one of the two butane tanks that was built in 1959 and underwent some alterations in March 2021, a more frequent inspection and testing schedule should be considered among other options to assure MI and safe operation in the future. It is unclear to the inspectors whether the half-life or the remaining life of these tanks is known to the owner/operator of the Facility.

- According to Section 6.5.1.1 of APl 510, unless justified by a Risk-Based Inspection assessment, the period between internal or on-stream inspections shall not exceed one half the remaining life of the vessel or ten years, whichever is less. Whenever the remaining life is less than four years, the inspection interval may be the full remaining life up to a maximum of two years.

- The Facility's MI schedule and critical equipment list indicates that the process piping must have visual inspection monthly and UT every 60 months (5 yrs.). The Facility is in operation from November 28, 2017, the date of purchase and has had covered process from November 28, 2017, through April 2018; and from April 21, 2021, the date of RMP registration. The Facility did not provide information demonstrating that the MI inspection(s) and testing(s) of process piping was conducted.

  - According to Section 6.4.3.2 and Table2 of API 570, piping in Class l service should be visually inspected and have thickness measurements taken at selected condition monitoring locations (CMLs) every five years.

**Inspection Report,**

Prepared by:

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