

## Incident Report

**Completed by:** Boone Brothers

**Date:** May 29, 2020

**Location of Incident:** BD  
1211 Mary Magnan Blvd.  
Madison GA 30650

**Release Point:** Sterilizer Line 1, PRV Vent Line

**Date of Incident:** May 24-28, 2020

### **Description of Incident:**

A safety device installed in connection with the facility's Leak Detection and Reduction (LDAR) program ruptured, preventing a pressure relief valve from fully closing. The calculated amount released each day was 0.86 lbs., 0.47 lbs., 0.84 lbs., 0.87 lbs., and 0.43 lbs. respectively, approximately 3.47 pounds in total.

### **Background:**

During a planned shutdown, May 18 - 21, 2020, piping was fabricated to install a rupture disk and pressure gauge with a tell-tale indicator. The rupture disk is composed of graphite and is designed to fracture when it reaches the maximum pressure. In the present application, the rupture disk (RD) reduces the risk of accidental release of EO from the pressure relief valve (PRV), which, in turn, protects the separator tank from an overpressure event.

The RD was installed as an industry best practice to facilitate adherence to the newly mandated LDAR program. With the installation in place, the process was restarted on May 24, 2020.

On May 28, 2020, maintenance was performing routine LDAR activities on Line 1 at the Madison facility. The gas meter detected the presence of EO. Maintenance notified system operators who shut down the process shortly thereafter.

### **Root Cause Investigation:**

Investigation indicates that on May 24, 2020, a high-pressure event occurred during the sterilant removal phase of the first load of line 1 Sterilizer. The pressure fractured the RD, per its design, sending pieces of the disk into the PRV. As pressure reduced, pieces of the RD became lodged in the PRV, allowing a small flow path of the emission stream. Thus, the investigation concluded that the leak was caused by the fragmenting type of rupture disk.

Because the tell-tale gauge did not communicate the event to the control room, the event was detected at a scheduled LDAR inspection.

The investigation indicates that the release occurred during each sterilant removal phase from May 24 through May 28, 2020. It further indicated that no greater than 0.87 pounds was released in any 24-hour period.

### **Corrective Actions**

The following steps were taken as corrective action:

1. Verify the condition of the other rupture disks and evaluate alternative RD materials of construction for this application.
2. Evaluate and modify the configuration of the rupture disk, tell-tale, and pressure relief device.
3. Evaluate and install system instrumentation to provide feedback to operators in the control room.