Operator, Location, & Consequences

<table>
<thead>
<tr>
<th>Date of Failure</th>
<th>8/9/2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commodity Released</td>
<td>Natural Gas</td>
</tr>
<tr>
<td>City/County &amp; State</td>
<td>Chester Spring/Chester County, Pennsylvania</td>
</tr>
<tr>
<td>OpID &amp; Operator Name</td>
<td>2616 Columbia Gas Transmission, LLC</td>
</tr>
<tr>
<td>Unit # &amp; Unit Name</td>
<td>2891—Downingtown-PA</td>
</tr>
<tr>
<td>SMART Activity #</td>
<td>151051</td>
</tr>
<tr>
<td>Milepost/Location</td>
<td>Lat: 40.097453  Long: -75.681189</td>
</tr>
<tr>
<td>Type of Failure</td>
<td>Leak—Equipment Failure</td>
</tr>
<tr>
<td>Fatalities</td>
<td>0</td>
</tr>
<tr>
<td>Injuries</td>
<td>0</td>
</tr>
<tr>
<td>Description of area impacted</td>
<td>Class 3 Area, Non-HCA</td>
</tr>
<tr>
<td>Total Costs</td>
<td>$484,579</td>
</tr>
</tbody>
</table>
Executive Summary

On August 9, 2015, at 10:19 p.m. EST, the compression units at Eagle Compressor Station in Chester Springs, PA, shut down due to an emergency shutdown device (ESD) signal triggered by the Fire Detection/Melt-out sensors over Unit 3. At the time of the ESD, all four units at the station were running. Gas Control called the station operator, who observed a fire in the compressor building after arriving at the station. Line 1804’s blowdown stack was releasing material into the atmosphere and its suction header fire valve (L-7210) was not fully closed, allowing material to continue to flow to the station and out the blowdown stack.

Material flowing into the station through Line 1804 was shut off using manually operated upstream block valves. An inspector from the Pipeline and Hazardous Materials Safety Administration (PHMSA) Eastern Region was dispatched to the location on August 10, 2015, to conduct an investigation into the cause of the incident. The source of the fire was determined to be an ethanol coolant leak on a short flexible hose connection between the coolant header and head connection on Unit 3, and notification was made to the National Response Center by Columbia Gas Transmission at 12:16 a.m. EST, on August 10, 2015. The other three units, 1, 2, and 4, were inspected for similar failures in the ethanol hoses before they were returned to service. There were no injuries or fatalities as a result of this incident, and no reported evacuations.

System Details

There are four compressor units located in the main compressor building at Eagle Compressor Station, and the Station Maximum Allowable Operating Pressure (MAOP) is 936 psig.

The PHMSA-designated inspection unit consists of 184 miles of pipelines and 2 compressor stations. The unit boundary stretches from the launcher/receiver at Marietta Compressor Station East to just south of Eagle Compressor Station, south to the PA/MD state line, and east to Gloucester County, New Jersey. Both Eagle Compressor Station and Downingtown Compressor Station are included in this unit.

Events Leading up to the Failure

Prior to the incident, Eagle Compressor Station was operating under normal conditions at a pressure of 775 psig—below the MAOP of 936 psig—with all four compressor units in operation. It was reported that valve maintenance was being conducted at the station; however, this work was not related to the incident.

Emergency Response

On August 9, 2015, at approximately 10:19 p.m., Columbia Gas Transmission, LLC’s (CGT) Gas Control Center received a Supervisory Control and Data Acquisition (SCADA) alarm indicating a fire in the main compressor building at CGT’s Eagle Compressor Station. Two compressor station operators were dispatched to the location by Gas Control, and when the first station operator arrived he observed a fire in the compressor building. Line 1804’s blowdown stack was releasing material into the atmosphere and the Line 1804 suction header fire valve (L-7210) was not fully closed, allowing material to continue to flow to the station and out the blowdown stack.
Material flowing into the station through Line 1804 was shut off using manually operated upstream block valves.

Local residents also contacted CGT and 911 to report a fire at Eagle Station, to which local fire and police responded promptly. The ESD system automatically shut down all four compressor units to isolate the station, as it was designed to do.

An inspector from PHMSA’s Eastern Region was dispatched to the location on August 10, 2015, to conduct an investigation into the cause of the incident.

**Summary of Return-to-Service**

Units 1, 2, and 4 were returned to service on August 10, 2015, at 3:14 a.m., after operating personnel performed safety checks and inspections on the units and found no damage. Unit 3, which was damaged during the fire, remained shut down and isolated. Lighting fixtures, electrical wiring, and paneling located above Unit 3 were also damaged; Unit 3 will remain out of service until proper repairs and inspections are completed.

**Investigation Details**

The estimated volume of gas released was 6,659 thousand cubic feet (MCF).

The fire and gas release originated at Compressor Unit 3, one of four units at Eagle Compressor Station. The MAOP of the station is 936 psig, and a review of the SCADA pressures leading up to the incident showed historical operating pressures were below this. Pressure at the time of failure was 775 psig.

Damage was contained to Compressor Unit 3 and its associated ethanol cooling unit. The reinforced hose from the ethanol cooler to Unit 3 failed, causing the ethanol engine coolant to spray onto the compressor engine and exhaust piping. It is believed that the hot exhaust piping may have ignited the ethanol. The fire was a result of the ethanol release, and there was no natural gas released inside the building. Natural gas was only released as part of the isolation and station blowdown during the activation of the ESD system at the station.

**Findings and Contributing Factors**

The cause of the release and subsequent fire was due to a failure of the reinforced ethanol coolant line from the ethanol cooler to Compressor Unit 3. The coolant line consisted of a flexible reinforced hose connection, and a material defect or vibration from the engine or compressor may have been a contributing factor in this incident.

**Appendices**

A 151051 Appendix A Maps
B 151051 Appendix B Photographs
C 151051 Appendix C Incident Report PHMSA Form 7100.2 20150111-16855
D 151051 Appendix D NRC Report 1125195
Reinforced flex hose connector
Heat damage to ceiling panels above compressor unit 3. Lighting fixtures and electrical wires also damaged. Units 1, 2 and 4 were not damaged.
Heat damage to ceiling panels above compressor unit 3. Lighting fixtures and electrical wires also damaged. Units 1, 2 and 4 were not damaged.
PART A - KEY REPORT INFORMATION

<table>
<thead>
<tr>
<th>Report Type: (select all that apply)</th>
<th>Original:</th>
<th>Supplemental:</th>
<th>Final:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Last Revision Date:</td>
<td>2616</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Operator's OPS-issued Operator Identification Number (OPID): COLUMBIA GAS TRANSMISSION, LLC
2. Name of Operator: 1700 MACCORKLE AVE., SE
3. Address of Operator: CHARLESTON
4. City: West Virginia
5. Zip Code: 25314
6. Local time (24-hr clock) and date of the Incident: 08/09/2015 22:20
7. Location of Incident: 40.097453
8. Latitude: -75.681189
9. Longitude:
10. National Response Center Report Number (if applicable): 1125195
11. Local time (24-hr clock) and date of initial telephonic report to the National Response Center (if applicable): 08/10/2015 00:16
12. Incident resulted from: Unintentional release of gas
13. Gas released: (select only one, based on predominant volume released): Natural Gas
14. Estimated volume of commodity released unintentionally - Thousand Cubic Feet (MCF): 6,659.08
15. Estimated volume of intentional and controlled release/blowdown - Thousand Cubic Feet (MCF):
16. Estimated volume of accompanying liquid release (Barrels):
17. Were there fatalities? No
18. If Yes, specify the number in each category:
   - Operator employees
   - Contractor employees working for the Operator
   - Non-Operator emergency responders
   - Workers working on the right-of-way, but NOT associated with this Operator
   - General public
19. Total fatalities (sum of above):
20. Were there injuries requiring inpatient hospitalization? No
21. If Yes, specify the number in each category:
   - Operator employees
   - Contractor employees working for the Operator
   - Non-Operator emergency responders
   - Workers working on the right-of-way, but NOT associated with this Operator
   - General public
22. Total injuries (sum of above):
23. Was the pipeline/facility shut down due to the incident? Yes
24. If No, Explain:

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**INSTRUCTIONS**

Important: Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at http://www.phmsa.dot.gov/pipeline/library/forms.
**PART A - EVENT INFORMATION**

15a. Local time and date of shutdown  | 08/09/2015 23:14
15b. Local time pipeline/facility restarted  | 08/10/2015 03:14
- Still shut down? (* Supplemental Report Required) | No

16. Did the gas ignite? | No
17. Did the gas explode? | No
18. Number of general public evacuated: | 0

19. Time sequence (use local time, 24-hour clock):
   - 19a. Local time operator identified Incident – effective 10-2014, changed from "Incident" to "failure" | 08/09/2015 22:19
   - 19b. Local time operator resources arrived on site | 08/09/2015 22:36

**PART B - ADDITIONAL LOCATION INFORMATION**

1. Was the origin of the Incident onshore? | Yes
   - Yes (Complete Questions 2-12) - No (Complete Questions 13-15)

   **If Onshore:**
   2. State: Pennsylvania
   3. Zip Code: 19425
   4. City: Chester Spring
   5. County or Parish: Chester County
   6. Operator designated location: Milepost/Valve Station
      Specify: L-7210
   7. Pipeline/Facility name: Eagle Compressor Station
   8. Segment name/ID: Emergency Valve
   9. Was Incident on Federal land, other than the Outer Continental Shelf (OCS)? | No
   10. Location of Incident: Operator-controlled property
   11. Area of Incident (as found): Aboveground
      Specify: Typical aboveground facility piping or appurtenance
      Other – Describe:
      Depth-of-Cover (in): 

   12. Did Incident occur in a crossing? | No
      - If Yes, specify type below:
      - If Bridge crossing –
        Cased/ Uncased:
      - If Railroad crossing –
        Cased/ Uncased/ Bored/drilled
      - If Road crossing –
        Cased/ Uncased/ Bored/drilled
      - If Water crossing –
        Cased/ Uncased
        Name of body of water (If commonly known):
        Approx. water depth (ft) at the point of the Incident:
        Select:

   **If Offshore:**
   13. Approx. water depth (ft) at the point of the Incident:
   14. Origin of Incident:
      - If "In State waters":
        - State:
        - Area:
        - Block/Tract #:
        - Nearest County/Parish:
      - If "On the Outer Continental Shelf (OCS)"
        - Area:
        - Block #:
   15. Area of Incident:

**PART C - ADDITIONAL FACILITY INFORMATION**

1. Is the pipeline or facility: - Interstate - Intrastate | Interstate
2. Part of system involved in Incident: Onshore Compressor Station Equipment and Piping
3. Item involved in Incident: Valve
   - If Pipe – Specify:
   3a. Nominal diameter of pipe (in):
   3b. Wall thickness (in):
   3c. SMYS (Specified Minimum Yield Strength) of pipe (psi):
<table>
<thead>
<tr>
<th>3d. Pipe specification:</th>
</tr>
</thead>
<tbody>
<tr>
<td>3e. Pipe Seam – Specify:</td>
</tr>
<tr>
<td>- If Other, Describe:</td>
</tr>
<tr>
<td>3f. Pipe manufacturer:</td>
</tr>
<tr>
<td>3g. Year of manufacture:</td>
</tr>
<tr>
<td>3h. Pipeline coating type at point of Incident – Specify:</td>
</tr>
<tr>
<td>- If Other, Describe:</td>
</tr>
<tr>
<td>- If Valve – Specify:</td>
</tr>
<tr>
<td>- If Mainline – Specify:</td>
</tr>
<tr>
<td>- If Other, Describe:</td>
</tr>
<tr>
<td>3i. Mainline valve manufacturer:</td>
</tr>
<tr>
<td>3j. Year of manufacture:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. Year item involved in Incident was installed: Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Material involved in Incident: Carbon Steel</td>
</tr>
<tr>
<td>- If Material other than Carbon Steel or Plastic – Specify: Other</td>
</tr>
<tr>
<td>6. Type of Incident involved: Other</td>
</tr>
<tr>
<td>- If Mechanical Puncture – Specify Approx. size:</td>
</tr>
<tr>
<td>- in. (axial) by in. (circumferential):</td>
</tr>
<tr>
<td>- If Leak - Select Type:</td>
</tr>
<tr>
<td>- If Other – Describe:</td>
</tr>
<tr>
<td>- If Rupture - Select Orientation:</td>
</tr>
<tr>
<td>- If Other – Describe:</td>
</tr>
<tr>
<td>- Approx. size: in. (widest opening): by in. (length circumferentially or axially):</td>
</tr>
<tr>
<td>- If Other – Describe:</td>
</tr>
</tbody>
</table>

**PART D - ADDITIONAL CONSEQUENCE INFORMATION**

<table>
<thead>
<tr>
<th>1. Class Location of Incident: Class 3 Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Did this Incident occur in a High Consequence Area (HCA)? No</td>
</tr>
<tr>
<td>- If Yes:</td>
</tr>
<tr>
<td>2a. Specify the Method used to identify the HCA:</td>
</tr>
<tr>
<td>3. What is the PIR (Potential Impact Radius) for the location of this Incident? Feet: 84</td>
</tr>
<tr>
<td>4. Were any structures outside the PIR impacted or otherwise damaged due to heat/fire resulting from the Incident? No</td>
</tr>
<tr>
<td>5. Were any structures outside the PIR impacted or otherwise damaged NOT by heat/fire resulting from the Incident? No</td>
</tr>
<tr>
<td>6. Were any of the fatalities or injuries reported for persons located outside the PIR? No</td>
</tr>
<tr>
<td>7. Estimated Property Damage:</td>
</tr>
<tr>
<td>7a. Estimated cost of public and non-Operator private property damage paid/reimbursed by the Operator – effective 6-2011, &quot;paid/reimbursed by the Operator&quot; removed</td>
</tr>
<tr>
<td>7b. Estimated cost of Operator's property damage &amp; repairs $ 466,000</td>
</tr>
<tr>
<td>7c. Estimated cost of Operator's emergency response $ 0</td>
</tr>
<tr>
<td>7d. Estimated other costs $ 0</td>
</tr>
<tr>
<td>- Describe: Cost of repairs to building including cranes.</td>
</tr>
<tr>
<td>7e. Property damage subtotal (sum of above) $ 466,000</td>
</tr>
</tbody>
</table>

**Cost of Gas Released**

| 7f. Estimated cost of gas released unintentionally $ 18,579 |
| 7g. Estimated cost of gas released during intentional and controlled blowdown $ 0 |
| 7h. Total estimated cost of gas released (sum of 7.f & 7.g above) $ 18,579 |
| Total of all costs $ 484,579 |
### PART E - ADDITIONAL OPERATING INFORMATION

1. Estimated pressure at the point and time of the Incident (psig): 775.00

2. Maximum Allowable Operating Pressure (MAOP) at the point and time of the Incident (psig): 936.00

Added 10-2014 2a. MAOP established by 49 CFR section: 192.619(a)(3) - If Other, specify: Pressure did not exceed MAOP

3. Describe the pressure on the system or facility relating to the Incident: No

4. Not including pressure reductions required by PHMSA regulations (such as for repairs and pipe movement), was the system or facility relating to the Incident operating under an established pressure restriction with pressure limits below those normally allowed by the MAOP?

   - If Yes - (Complete 4a and 4b below)

   4a. Did the pressure exceed this established pressure restriction?

   4b. Was this pressure restriction mandated by PHMSA or the State?

5. Was "Onshore Pipeline, Including Valve Sites" OR "Offshore Pipeline, Including Riser and Riser Bend" selected in PART C, Question 2? No

   - If Yes - (Complete 5a. – 5e. below):

   5a. Type of upstream valve used to initially isolate release source:

   5b. Type of downstream valve used to initially isolate release source:

   5c. Length of segment isolated between valves (ft):

   5d. Is the pipeline configured to accommodate internal inspection tools?

   - If No – Which physical features limit tool accommodation? (select all that apply)

   - Changes in line pipe diameter
   - Presence of unsuitable mainline valves
   - Tight or mitered pipe bends
   - Other passage restrictions (i.e. unbarred tee’s, projecting instrumentation, etc.)
   - Extra thick pipe wall (applicable only for magnetic flux leakage internal inspection tool(s)
   - Other

   - If Other, Describe:

   5e. For this pipeline, are there operational factors which significantly complicate the execution of an internal inspection tool run?

   - If Yes, which operational factors complicate execution? (select all that apply)

   - Excessive debris or scale, wax, or other wall build-up
   - Low operating pressure(s)
   - Low flow or absence of flow
   - Incompatible commodity
   - Other

   - If Other, Describe:

5f. Function of pipeline system: Transmission System

6. Was a Supervisory Control and Data Acquisition (SCADA)-based system in place on the pipeline or facility involved in the Incident? Yes

   - If Yes:

   6a. Was it operating at the time of the incident? Yes

   6b. Was it fully functional at the time of the incident? Yes

   6c. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume or pack calculations) assist with the detection of the Incident? Yes

   6d. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the confirmation of the Incident? Yes

7. How was the Incident initially identified for the Operator? SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume or pack calculations)

   - If Other – Describe:

7a. If “Controller”, “Local Operating Personnel, including contractors”, “Air Patrol”, or “Ground Patrol by Operator or its contractor” is selected in Question 7, specify:

8. Was an investigation initiated into whether or not the controller(s) or control room issues were the cause of or a contributing factor to the Incident? No, the Operator did not find that an investigation of the controller(s) actions or control room issues was necessary due to: (provide an explanation for why the Operator did not...
Root cause investigations identified that due to a breached ethanol line initiating the fire in the compressor unit building. SCADA system functioned as it was designed to and alerted the Gas Controller to perform necessary call-outs to address the alarms.

- If Yes, Describe investigation result(s) (select all that apply):
  - Investigation reviewed work schedule rotations, continuous hours of service (while working for the operator), and other factors associated with fatigue
  - Investigation did NOT review work schedule rotations, continuous hours of service (while working for the Operator) and other factors associated with fatigue
  - Provide an explanation for why not:
    - Investigation identified no control room issues
    - Investigation identified no controller issues
    - Investigation identified incorrect controller action or controller error
    - Investigation identified that fatigue may have affected the controller(s) involved or impacted the involved controller(s) response
    - Investigation identified incorrect procedures
    - Investigation identified incorrect control room equipment operation
    - Investigation identified maintenance activities that affected control room operations, procedures, and/or controller response
    - Investigation identified areas other than those above –

**PART F - DRUG & ALCOHOL TESTING INFORMATION**

1. As a result of this Incident, were any Operator employees tested under the post-accident drug and alcohol testing requirements of DOT’s Drug & Alcohol Testing regulations? Yes
   - If Yes:
     1a. How many were tested: 1
     1b. How many failed: 0

2. As a result of this Incident, were any Operator contractor employees tested under the post-accident drug and alcohol testing requirements of DOT’s Drug & Alcohol Testing regulations? No
   - If Yes:
     2a. How many were tested:
     2b. How many failed:

**PART G - APPARENT CAUSE**

Select only one box from PART G in the shaded column on the left representing the APPARENT Cause of the Incident, and answer the questions on the right. Describe secondary, contributing, or root causes of the Incident in the narrative (PART H).

Apparent Cause: G6 - Equipment Failure

G1 - Corrosion Failure - only one sub-cause can be picked from shaded left-hand column

Corrosion Failure – Sub-cause:

- If External Corrosion:
  1. Results of visual examination:
  - If Other, Describe:

2. Type of corrosion: (select all that apply)
  - Galvanic
  - Atmospheric
  - Stray Current
  - Microbiological
  - Selective Seam
  - Other
  - If Other – Describe:

3. The type(s) of corrosion selected in Question 2 is based on the following: (select all that apply)
  - Field examination
  - Determined by metallurgical analysis
4. Was the failed item buried under the ground?
   - If Yes:
     4a. Was failed item considered to be under cathodic protection at the time of the incident?
     - If Yes, Year protection started:
     4b. Was shielding, tenting, or disbonding of coating evident at the point of the incident?
     4c. Has one or more Cathodic Protection Survey been conducted at the point of the incident?
     - If "Yes, CP Annual Survey" – Most recent year conducted:
     - If "Yes, Close Interval Survey" – Most recent year conducted:
     - If "Yes, Other CP Survey" – Most recent year conducted:
   - If No:
     4d. Was the failed item externally coated or painted?

5. Was there observable damage to the coating or paint in the vicinity of the corrosion?
   - If Internal Corrosion:

6. Results of visual examination:
   - If Other, Describe:

7. Cause of corrosion (select all that apply):
   - Corrosive Commodity
   - Water drop-out/Acid
   - Microbiological
   - Erosion
   - Other
   - If Other, Describe:

8. The cause(s) of corrosion selected in Question 7 is based on the following (select all that apply):
   - Field examination
   - Determined by metallurgical analysis
   - Other
   - If Other, Describe:

9. Location of corrosion (select all that apply):
   - Low point in pipe
   - Elbow
   - Drop-out
   - Other
   - If Other, Describe:

10. Was the gas/fluid treated with corrosion inhibitors or biocides?

11. Were cleaning/dewatering pigs (or other operations) routinely utilized?

12. Were corrosion coupons routinely utilized?

Complete the following if any Corrosion Failure sub-cause is selected AND the "Item Involved in Incident" (from PART C, Question 3) is Pipe or Weld.

14. Has one or more internal inspection tool collected data at the point of the Incident?
   14a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run:
   - Magnetic Flux Leakage Tool
     Most recent year run:
   - Ultrasonic
     Most recent year run:
   - Geometry
     Most recent year run:
   - Caliper
     Most recent year run:
   - Crack
     Most recent year run:
   - Hard Spot
     Most recent year run:
   - Combination Tool
     Most recent year run:
   - Transverse Field/Triaxial
     Most recent year run:
   - Other
     Most recent year run:
   - If Other, Describe:
15. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Incident?
   - If Yes, 
     | Most recent year tested: | |
     | Test pressure (psig): | |

16. Has one or more Direct Assessment been conducted on this segment?
   - If Yes, and an investigative dig was conducted at the point of the Incident:
     | Most recent year conducted: | |
   - If Yes, but the point of the Incident was not identified as a dig site:
     | Most recent year conducted: | |

17. Has one or more non-destructive examination been conducted at the point of the Incident since January 1, 2002?
   17a. If Yes, for each examination conducted since January 1, 2002, select type of non-destructive examination and indicate most recent year the examination was conducted:
     | Radiography | Most recent year examined: |
     | Guided Wave Ultrasonic | Most recent year examined: |
     | Handheld Ultrasonic Tool | Most recent year examined: |
     | Wet Magnetic Particle Test | Most recent year examined: |
     | Dry Magnetic Particle Test | Most recent year examined: |
     | Other | Most recent year examined: |

     If Other, Describe:

G2 - Natural Force Damage - only one sub-cause can be picked from shaded left-handed column

Natural Force Damage – Sub-Cause:
- If Earth Movement, NOT due to Heavy Rains/Floods:
  1. Specify: 
    - If Other, Describe:
- If Heavy Rains/Floods:
  2. Specify: 
    - If Other, Describe:
- If Lightning:
  3. Specify: 
    4. Specify:
- If Other Natural Force Damage:
  5. Describe:

Complete the following if any Natural Force Damage sub-cause is selected.

6. Were the natural forces causing the Incident generated in conjunction with an extreme weather event?
   6a. If yes, specify: (select all that apply):
      | Hurricane |
      | Tropical Storm |
      | Tornado |
      | Other |

     If Other, Describe:

G3 - Excavation Damage only one sub-cause can be picked from shaded left-hand column

Excavation Damage – Sub-Cause:
- If Previous Damage Due to Excavation Activity: Complete Questions 1-5 ONLY IF the “Item Involved in Incident” (From Part C, Question 3) is Pipe or Weld.
  1. Has one or more internal inspection tool collected data at the point of the Incident?
     1a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run:
<pre><code>    | Magnetic Flux Leakage | Year: |
    | Ultrasonic | Year: |
</code></pre>
<table>
<thead>
<tr>
<th>Description</th>
<th>Year:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geometry</td>
<td></td>
</tr>
<tr>
<td>Caliper</td>
<td></td>
</tr>
<tr>
<td>Crack</td>
<td></td>
</tr>
<tr>
<td>Hard Spot</td>
<td></td>
</tr>
<tr>
<td>Combination Tool</td>
<td></td>
</tr>
<tr>
<td>Transverse Field/Triaxial</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

2. Do you have reason to believe that the internal inspection was completed BEFORE the damage was sustained?

3. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Incident?
   - If Yes:
     - Most recent year tested:
     - Test pressure (psig): 

4. Has one or more Direct Assessment been conducted on the pipeline segment?
   - If Yes, and an investigative dig was conducted at the point of the Incident:
     - Most recent year conducted:
   - If Yes, but the point of the Incident was not identified as a dig site:
     - Most recent year conducted:

5. Has one or more non-destructive examination been conducted at the point of the Incident since January 1, 2002?
   5a. If Yes, for each examination conducted since January 1, 2002, select type of non-destructive examination and indicate most recent year the examination was conducted:
     - Radiography
     - Guided Wave Ultrasonic
     - Handheld Ultrasonic Tool
     - Wet Magnetic Particle Test
     - Dry Magnetic Particle Test
     - Other

Describe:

Complete the following if Excavation Damage by Third Party is selected as the sub-cause.

6. Did the operator get prior notification of the excavation activity?
   6a. If Yes, Notification received from (select all that apply):
     - One-Call System
     - Excavator
     - Contractor
     - Landowner

Complete the following mandatory CGA-DIRT Program questions if any Excavation Damage sub-cause is selected.

7. Do you want PHMSA to upload the following information to CGA-DIRT (www.cga-dirt.com)?
8. Right-of-Way where event occurred (select all that apply):
   - Public
     - If Public, Specify:
   - Private
     - If Private, Specify:
   - Pipeline Property/Easement
   - Power/Transmission Line
   - Railroad
   - Dedicated Public Utility Easement
   - Federal Land
   - Data not collected
   - Unknown/Other

9. Type of excavator:
10. Type of excavation equipment: 

11. Type of work performed: 

12. Was the One-Call Center notified? - Yes - No  
12a. If Yes, specify ticket number: 

12b. If this is a State where more than a single One-Call Center exists, list the name of the One-Call Center notified: 

13. Type of Locator: 

14. Were facility locate marks visible in the area of excavation? 

15. Were facilities marked correctly? 

16. Did the damage cause an interruption in service?  
16a. If Yes, specify duration of the interruption: (hours) 

17. Description of the CGA-DIRT Root Cause (select only the one predominant first level CGA-DIRT Root Cause and then, where available as a choice, then one predominant second level CGA-DIRT Root Cause as well): 

- Predominant first level CGA-DIRT Root Cause: 
  - If One-Call Notification Practices Not Sufficient, Specify: 
  - If Locating Practices Not Sufficient, Specify: 
  - If Excavation Practices Not Sufficient, Specify: 
  - If Other/None of the Above, Explain: 

Other Outside Force Damage – Sub-Cause: 

- If Damage by Car, Truck, or Other Motorized Vehicle/Equipment NOT Engaged in Excavation: 
  1. Vehicle/Equipment operated by: 

- If Damage by Boats, Barges, Drilling Rigs, or Other Maritime Equipment or Vessels Set Adrift or Which Have Otherwise Lost Their Mooring: 
  2. Select one or more of the following IF an extreme weather event was a factor: 
    - Hurricane 
    - Tropical Storm 
    - Tornado 
    - Heavy Rains/Flood 
    - Other 
    - If Other, Describe: 

- If Previous Mechanical Damage NOT Related to Excavation: Complete Questions 3-7 ONLY IF the "Item Involved in Incident" (from PART C, Question 3) is Pipe or Weld. 
  3. Has one or more internal inspection tool collected data at the point of the Incident? 
  3a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run: 
    - Magnetic Flux Leakage 
    - Ultrasonic 
    - Geometry 
    - Caliper 
    - Crack 
    - Hard Spot 
    - Combination Tool 
    - Transverse Field/Triaxial 
    - Other: 

4. Do you have reason to believe that the internal inspection was completed BEFORE the damage was sustained? 

5. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Incident? 
  - If Yes: 
    - Most recent year tested: 
    - Test pressure (psig): 

G4 - Other Outside Force Damage - only one sub-cause can be selected from the shaded left-hand column
6. Has one or more Direct Assessment been conducted on the pipeline segment?
   - If Yes, and an investigative dig was conducted at the point of the Incident:
     Most recent year conducted:
   - If Yes, but the point of the Incident was not identified as a dig site:
     Most recent year conducted:
7. Has one or more non-destructive examination been conducted at the point of the Incident since January 1, 2002?
7a. If Yes, for each examination conducted since January 1, 2002, select type of non-destructive examination and indicate most recent year the examination was conducted:
   - Radiography
     Most recent year conducted:
   - Guided Wave Ultrasonic
     Most recent year conducted:
   - Handheld Ultrasonic Tool
     Most recent year conducted:
   - Wet Magnetic Particle Test
     Most recent year conducted:
   - Dry Magnetic Particle Test
     Most recent year conducted:
   - Other
     Most recent year conducted:
8. Specify:
   - Intentional Damage:
   - If Other, Describe:
9. Describe:

G5 - Pipe, Weld, or Joint Failure

Use this section to report material failures ONLY IF the "Item Involved in Incident" (from PART C, Question 3) is "Pipe" or "Weld."

Only one sub-cause can be selected from the shaded left-hand column

Pipe, Weld or Joint Failure – Sub-Cause:

1. The sub-cause shown above is based on the following (select all that apply):
   - Field Examination
   - Determined by Metallurgical Analysis
   - Other Analysis
     - If "Other Analysis", Describe
   - Sub-cause is Tentative or Suspected; Still Under Investigation
     (Supplemental Report required)
2. List contributing factors: (select all that apply)
   - Fatigue or Vibration related:
     Specify:
     - If Other, Describe:
   - Mechanical Stress
   - Other
     - If Other, Describe:
3. Specify:
   - If Other, Describe:

Complete the following if any Material Failure of Pipe or Weld sub-cause is selected.

4. Additional Factors (select all that apply):
   - Dent
   - Gouge
   - Pipe Bend
   - Arc Burn
   - Crack
   - Lack of Fusion
   - Lamination
   - Buckle
   - Wrinkle
   - Misalignment
   - Burnt Steel

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5. Has one or more internal inspection tool collected data at the point of the Incident?

5a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run:

<table>
<thead>
<tr>
<th>Tool</th>
<th>Most recent year run</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnetic Flux Leakage</td>
<td></td>
</tr>
<tr>
<td>Ultrasonic</td>
<td></td>
</tr>
<tr>
<td>Geometry</td>
<td></td>
</tr>
<tr>
<td>Caliper</td>
<td></td>
</tr>
<tr>
<td>Crack</td>
<td></td>
</tr>
<tr>
<td>Hard Spot</td>
<td></td>
</tr>
<tr>
<td>Combination Tool</td>
<td></td>
</tr>
<tr>
<td>Transverse Field/Triaxial</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

- Other

If Other, Describe:

6. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Incident?

- If Yes:

<table>
<thead>
<tr>
<th>Test</th>
<th>Most recent year tested</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. Has one or more Direct Assessment been conducted on the pipeline segment?

- If Yes, and an investigative dig was conducted at the point of the Incident:

<table>
<thead>
<tr>
<th>Most recent year conducted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

- If Yes, but the point of the Incident was not identified as a dig site:

<table>
<thead>
<tr>
<th>Most recent year conducted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

8. Has one or more non-destructive examination(s) been conducted at the point of the Incident since January 1, 2002?

8a. If Yes, for each examination conducted since January 1, 2002, select type of non-destructive examination and indicate most recent year the examination was conducted:

<table>
<thead>
<tr>
<th>Examination</th>
<th>Most recent year conducted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiography</td>
<td>silence</td>
</tr>
<tr>
<td>Guided Wave Ultrasonic</td>
<td>silence</td>
</tr>
<tr>
<td>Handheld Ultrasonic Tool</td>
<td>silence</td>
</tr>
<tr>
<td>Wet Magnetic Particle Test</td>
<td>silence</td>
</tr>
<tr>
<td>Dry Magnetic Particle Test</td>
<td>silence</td>
</tr>
<tr>
<td>Other</td>
<td>silence</td>
</tr>
</tbody>
</table>

Describe:

---

**G6 - Equipment Failure** - only one sub-cause can be selected from the shaded left-hand column

**Equipment Failure – Sub-Cause:**

Failure of Equipment Body (except Compressor), Vessel Plate, or other Material

---

**If Malfunction of Control/Relief Equipment:**

1. Specify:

<table>
<thead>
<tr>
<th>Specified Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Valve</td>
</tr>
<tr>
<td>Instrumentation</td>
</tr>
<tr>
<td>SCADA</td>
</tr>
<tr>
<td>Communications</td>
</tr>
<tr>
<td>Block Valve</td>
</tr>
<tr>
<td>- Check Valve</td>
</tr>
<tr>
<td>- Relief Valve</td>
</tr>
<tr>
<td>- Power Failure</td>
</tr>
<tr>
<td>- Stopple/Control Fitting</td>
</tr>
<tr>
<td>- Pressure Regulator</td>
</tr>
<tr>
<td>- ESD System Failure</td>
</tr>
<tr>
<td>- Other</td>
</tr>
</tbody>
</table>

- If Other, Describe:

- If Compressor or Compressor-related Equipment:

2. Specify:

- If Other, Describe:

- If Threaded Connection/Coupling Failure:

3. Specify:

- If Other, Describe:

- If Non-threaded Connection Failure:

4. Specify:

- If Other, Describe:

- If Other Equipment Failure:

5. Describe: Emergency shut valve located on Line 1804 suction header failed to close after the emergency shutdown system was activated

Complete the following if any Equipment Failure sub-cause is selected.

6. Additional factors that contributed to the equipment failure (select all that apply)

- Excessive vibration
- Overpressurization
- No support or loss of support
- Manufacturing defect
- Loss of electricity
- Improper installation
- Mismatched items (different manufacturer for tubing and tubing fittings)
- Dissimilar metals
- Breakdown of soft goods due to compatibility issues with transported gas/fluid
- Valve vault or valve can contributed to the release
- Alarm/status failure
- Misalignment
- Thermal stress
- Other

- If Other, Describe: Impurities in the actuator tubing

G8 – Other Incident Cause - only one sub-cause can be selected from the shaded left-hand column

Incorrect Operation – Sub-Cause:

- If Underground Gas Storage, Pressure Vessel, or Cavern Allowed or Caused to Overpressure:

1. Specify:

- If Other, Describe:

- If Other Incorrect Operation:

2. Describe:

Complete the following if any Incorrect Operation sub-cause is selected.

3. Was this Incident related to: (select all that apply)

- Inadequate procedure
- No procedure established
- Failure to follow procedure
- Other

- If Other, Describe:

4. What category type was the activity that caused the Incident:

5. Was the task(s) that led to the Incident identified as a covered task in your Operator Qualification Program?

5a. If Yes, were the individuals performing the task(s) qualified for the task(s)?

G8 - Other Incident Cause - only one sub-cause can be selected from the shaded left-hand column
Other Incident Cause – Sub-Cause:

<table>
<thead>
<tr>
<th>- If Miscellaneous:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Describe:</td>
<td></td>
</tr>
<tr>
<td>- If Unknown:</td>
<td></td>
</tr>
<tr>
<td>2. Specify:</td>
<td></td>
</tr>
</tbody>
</table>

**PART - H NARRATIVE DESCRIPTION OF THE INCIDENT**

On August 9, 2015 at 22:19 EST, the compression units at Eagle compressor station (CS) located in Chester Springs, PA did shut down due to an emergency shutdown (ESD) signal that was triggered by the Fire Detection/Melt-out sensors over unit 3. At the time of the ESD all 4 units at the station were running. When the station operator arrived at the station in response to a callout, he noted presence of fire in the compressor building. Line 1804 blowdown stack was found to be releasing material into atmosphere and Line 1804 suction header fire valve (L-7210) not fully closed allowing material to continue to flow to the station and out the blowdown stack.

Material flowing into the station through Line 1804 was shut off using upstream block valves which were manually closed.

The source of the fire was determined to be a coolant leak on a short flexible hose connection between the coolant header and head connection at cylinder No. 5 on an engine/compressor package. The other units were inspected for similar indications on the ethanol hoses before the other units were returned back into service. After the full inspection and safety checks on the other units was completed, they were returned back into service in sequence. Unit No. 3 is still down awaiting repairs.

**PART I - PREPARER AND AUTHORIZED SIGNATURE**

<table>
<thead>
<tr>
<th>Preparer's Name</th>
<th>George Hamaty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparer's Title</td>
<td>Engineer</td>
</tr>
<tr>
<td>Preparer's Telephone Number</td>
<td>(304) 357-3728</td>
</tr>
<tr>
<td>Preparer's E-mail Address</td>
<td><a href="mailto:ghamaty@cpg.com">ghamaty@cpg.com</a></td>
</tr>
<tr>
<td>Authorized Signature Title</td>
<td>Manager System Integrity</td>
</tr>
<tr>
<td>Authorized Signature Telephone Number</td>
<td>(304) 357-2548</td>
</tr>
<tr>
<td>Authorized Signature Email</td>
<td><a href="mailto:mikehoffman@cpg.com">mikehoffman@cpg.com</a></td>
</tr>
<tr>
<td>Date</td>
<td>09/04/2015</td>
</tr>
</tbody>
</table>
INCIDENT DESCRIPTION

*Report taken by: CIV NICHAULUS THREATT at 00:16 on 10-AUG-15
Incident Type: PIPELINE
Incident Cause: UNKNOWN
Affected Area:
Incident occurred on 09-AUG-15 at 23:30 local incident time.
Affected Medium: AIR   ATMOSPHERE

REPORTING PARTY
Name:  GEORGE HAMATY
Organization:  COLUMBIA GULF TRANSMISSION
Address:       1700 MACCORKLE AVENUE SE
                CHARLESTON, WV 25314
Email Address: ghamaty@cpg.com

PRIMARY Phone: (304)5538306
Type of Organization: PRIVATE ENTERPRISE

SUSPECTED RESPONSIBLE PARTY
Name:  GEORGE HAMATY
Organization:  COLUMBIA GULF TRANSMISSION
Address:       1700 MACCORKLE AVENUE SE
                CHARLESTON, WV 25314
PRIMARY Phone: (304)5538306

INCIDENT LOCATION
310 FELLOWSHIP RD.    County: CHESTER
City: CHESTER SPRING   State: PA   Zip: 19425
COMPRESSOR STATION

RELEASED MATERIAL(S)
CHRIS Code: ONG    Official Material Name: NATURAL GAS
Also Known As:
Qty Released: 0 UNKNOWN AMOUNT

DESCRIPTION OF INCIDENT
NATURAL GAS RELEASED FROM A TRANSMISSION PIPELINE COMPRESSOR STATION DUE TO AN UNKNOWN CAUSE AT THIS TIME. THE COMPRESSOR STATION ENGINE UNIT ALSO CAUGHT ON FIRE AS A RESULT OF THE INCIDENT.

**SENSITIVE INFORMATION**

---

**INCIDENT DETAILS**
Pipeline Type: TRANSMISSION
DOT Regulated: YES
Pipeline Above/Below Ground: ABOVE
Exposed or Under Water: NO
Pipeline Covered: UNKNOWN

---

**IMPACT**
Fire Involved: YES  Fire Extinguished: YES

INJURIES: NO  Hospitalized: Empl/Crew: Passenger:
FATALITIES: NO  Empl/Crew: Passenger: Occupant:
EVACUATIONS: NO  Who Evacuated: Radius/Area:

Damages: YES $50000

---

**REMEDIAL ACTIONS**
ISOLATING THE FACILITY AND MAKING IT SAFE AND AT THIS POINT IT IS SAFE.
Release Secured: YES
Release Rate:
Estimated Release Duration:

WEATHER
Weather: CLEAR, 64°F

ADDITIONAL AGENCIES NOTIFIED
Federal:
State/Local:
State/Local On Scene: FIRE DEPT.
State Agency Number:

NOTIFICATIONS BY NRC
CENTERS FOR DISEASE CONTROL (GRASP)
10-AUG-15 00:23 (770)4887100
DELWARE EMERGENCY MGMT AGENCY (MAIN OFFICE)
10-AUG-15 00:23 (302)6593362
DELWARE STATE POLICE (MAIN OFFICE)
10-AUG-15 00:23 (302)6593362
DOT CRISIS MANAGEMENT CENTER (MAIN OFFICE)
10-AUG-15 00:23 (202)3661863
DELWARE VALLEY INTEL CENTER (REGIONAL FUSION CENTER/PHILI PD)
10-AUG-15 00:23 (215)8970800
U.S. EPA III (MAIN OFFICE)
(215)8143255
FLD INTEL SUPPORT TEAM PHILADELPHIA (MAIN OFFICE)
10-AUG-15 00:23 (215)8975406
USCG NATIONAL COMMAND CENTER (MAIN OFFICE)
10-AUG-15 00:23 (202)3722100
NATIONAL INFRASTRUCTURE COORD CTR (MAIN OFFICE)
10-AUG-15 00:23 (202)2829201
NJ STATE POLICE (MARINE SERVICES BUREAU)
10-AUG-15 00:23 (609)9636900
NOAA RPTS FOR PA (MAIN OFFICE)
10-AUG-15 00:23 (206)5264911
NATIONAL RESPONSE CENTER HQ (MAIN OFFICE)
10-AUG-15 00:23
NATIONAL RESPONSE CENTER HQ (AUTOMATIC REPORTS)
10-AUG-15 00:23 (202)2671136
NRC COMMAND DUTY OFFICER (MAIN OFFICE)
(202)2672100
NTSB PIPELINE (MAIN OFFICE)
10-AUG-15 00:23 (202)3146293
PA ENVIRONMENTAL PROTECTION AGENCY (EMERGENCY ENVIRONMENTAL RESPONSE)
10-AUG-15 00:23 (717)7875715
ADDITIONAL INFORMATION

PHMSA EAST REGION WILL BE NOTIFIED.

*** END INCIDENT REPORT #1125195 ***

Report any problems by calling 1-800-424-8802

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