



U.S. Department
of Transportation
**Pipeline and Hazardous
Materials Safety
Administration**

901 Locust Street, Suite 480
Kansas City, MO 64106

NOTICE OF AMENDMENT

VIA ELECTRONIC MAIL TO: jblount@colpipe.com; QFrazier@colpipe.com

May 27, 2022

Joseph A. Blount
President & CEO
Colonial Pipeline Company
1185 Sanctuary Parkway, Suite 100
Alpharetta, GA 30009

CPF 3-2022-028-NOA

Dear Mr. Blount:

From January 27, through November 12, 2020, a representative of the Pipeline and Hazardous Materials Safety Administration (PHMSA) pursuant to Chapter 601 of 49 United States Code inspected Colonial Pipeline Company's (Colonial's) Control Room Management (CRM) procedures in Linden, NJ, Hebert, LA, Greensboro, NC, and Alpharetta, GA.

This Notice is in response to PHMSA's CRM Initiative, a national level program that includes inspectors from every region. As a result, you may have received this Notice from a different Regional Director than typical because the CRM Initiative inspections are currently separate from the standard inspection program. Notices and correspondence from other types of inspections will remain unchanged. On the basis of the inspection, PHMSA has identified the apparent inadequacies found within Colonial's plans or procedures, as described below:

1. § 195.446 Control Room

(a)General. This section applies to each operator of a pipeline facility with a controller working in a control room who monitors and controls all or part of a pipeline facility through a SCADA system. Each operator must have and follow written control room management procedures that implement the requirements of this section. The procedures required by this section must be integrated, as appropriate with the operator's written procedure required by §195.402. An operator must develop the procedures no later than August 1, 2011 and must implement the procedures according to the following schedule. The procedures required by paragraphs (b), (c)(5), (d)(2) and (d)(3), (f) and (g) of this section must be implemented no later than October 1, 2011. The procedures required by paragraphs (c)(1) through (4), (d)(1), (d)(4) and (e) must be implemented no later than August 1, 2012. The training procedures required by paragraph (h) must be implemented no later than August 1, 2012, except that any training required by another paragraph of this section must be implemented no later than the deadline for that paragraph.

Colonial procedure ADM-CPC-006 Revision 13.0: 7/2/2020 (CRM Plan) fails to define the roles and responsibilities of controllers related to time absent from the console when conducting a shift turnover during normal operations, and is therefore inadequate to comply with the requirements of § 195.446(b)(1). In the CRM Plan, two sections cover the unplanned changes in controller responsibilities: Control Room Area Activities and Controller Shift Turnover and Handover of Responsibility Method.

- Control Room Area Activities states: “If the controlling individual must leave the control area, then another qualified individual must assume responsibility for any operations that occurs during this period and shall document this turnover of responsibility in the narrative log. This may also include responding to Abnormal or Emergency Operating Conditions (AOC’s or EOC’s).

An appropriate exchange of information concerning system status along with any current or upcoming operations that may occur during the normal controlling individual’s absence.” (CRM Plan, at 6)

- Controller Shift Turnover and Handover of Responsibility Method states: “A shift turnover/handover of responsibility shall not include when a Controller steps away for a brief, reasonable amount of time (i.e., restroom break, personal call, etc.) where the Controller, or another qualified individual may monitor the console, line or system and respond to audible or visible alarm indication.” (CRM Plan, at 12).

The procedures did address covering a console during a "reasonable" amount of time to cover breaks and to provide an “appropriate exchange”. The words "reasonable" and “appropriate” did not impose a time limit or require specific information to be exchanged. These ambiguities left the interpretation to the individual, where the meaning can vary from one controller to the next.

Colonial must amend its procedures to adequately define time limits during short absences before a shift change is required and the information to be shared during these short breaks to clarify the roles and responsibilities of the controller.

2. § 195.446 Control room management.

(a)General. This section applies to each operator of a pipeline facility with a controller working in a control room who monitors and controls all or part of a pipeline facility through a SCADA system. Each operator must have and follow written control room management procedures that implement the requirements of this section. The procedures required by this section must be integrated, as appropriate with the operator’s written procedure required by § 195.402. An operator must develop the procedures no later than August 1, 2011 and must implement the procedures according to the following schedule. The procedures required by paragraphs (b), (c)(5), (d)(2) and (d)(3), (f) and (g) of this section must be implemented no later than October 1, 2011. The procedures required by paragraphs (c)(1) through (4), (d)(1), (d)(4) and (e) must be implemented no later than August 1, 2012. The training procedures required by paragraph (h) must be implemented no later than August 1, 2012, except that any training required by another paragraph of this section must be implemented no later than the deadline for that paragraph.

Colonial’s procedures for the evacuation of the control room at both field and Alpharetta Main locations failed to provide specific actions for the controller, or control room staff, to take including communicating with others, and were therefore inadequate to comply with the requirements of §

195.446(b)(3). The procedures leave out steps that are critical in the flow of the evacuation. Additionally, there are undefined job responsibilities for the lead controller for this emergency condition. The combination of undefined roles, responsibilities and procedural steps is inadequate to comply with PHMSA's regulation.

During the inspection, PHMSA identified that EOP-CC-K20 provided for the controller to leave, shut down the pipes, if they can, and call security. There was a step that required the controller to call facilities VG4 group, but did not prescribe a specific message when making the notification for evacuation (a pre-determined and programmed notification system). Then the controller called the Colonial Supervision to notify of the evacuation. Procedure COP-CPC-005 Relocation of Pipeline Control identified that the supervisor determined the need to evacuate to the backup center. This call was the responsibility of the lead controller, but it was not defined in this procedure, in the COP-CPC-005 Relocation of Pipeline Control procedure, or in the roles and responsibilities sections. This call was crucial as the supervisor determined the need to evacuate to the backup center under Colonial's procedure. The two procedures were co-dependent but did not fully support each other.

Lastly, Colonial did mention evacuation in the introduction of the CRM Plan, but the CRM Plan did not have a comprehensive evacuation plan for field locations. The field control rooms did not have backup control centers, but instead had muster sites for each location. This was not the same as managing absence from the console. Evacuation may be short term or long term and these considerations were not available through a procedure.

Colonial must amend its procedures to provide clear roles for controllers and control room staff during an emergency, even if the controller and staff were not the first to detect the emergency, including the controller's and control room staff's responsibilities to take specific actions and communicate with others when needing to evacuate the control room.

3. § 195.446 Control room management.

(a) General. This section applies to each operator of a pipeline facility with a controller working in a control room who monitors and controls all or part of a pipeline facility through a SCADA system. Each operator must have and follow written control room management procedures that implement the requirements of this section. The procedures required by this section must be integrated, as appropriate with the operator's written procedure required by §195.402. An operator must develop the procedures no later than August 1, 2011 and must implement the procedures according to the following schedule. The procedures required by paragraphs (b), (c)(5), (d)(2) and (d)(3), (f) and (g) of this section must be implemented no later than October 1, 2011. The procedures required by paragraphs (c)(1) through (4), (d)(1), (d)(4) and (e) must be implemented no later than August 1, 2012. The training procedures required by paragraph (h) must be implemented no later than August 1, 2012, except that any training required by another paragraph of this section must be implemented no later than the deadline for that paragraph.

Colonial's procedures failed to have a shift hand-over process for instances when an outgoing controller was not/unable to be present and was therefore inadequate to comply with the requirements of § 195.446(b)(4). While the operator stated they would shut down the console pipelines until they get a replacement for shift coverage or just keep the line shut down for the night, Colonial did not have a procedure to follow in making that decision.

Colonial must amend its procedures to include a method of recording controller shift-changes and any hand-over of responsibility between controllers in the event a controller is unable to complete her shift and a replacement is not readily available.

4. § 195.446 Control room management.

(a)

(b) *Roles and Responsibilities.* Each operator must define the roles and responsibilities of a controller during normal, abnormal, and emergency operating conditions. To provide for a controller's prompt and appropriate response to operating conditions, and operator must define each of the following:

(1)

(4) A method of recording controller shift-changes and any hand-over of responsibility between controllers;

Colonial's procedure for periodically changing physical responsibility failed to cover the local desk operation, for the Greensboro Control room, where the pipeline is shut down, and when the console logged out and controllers leave the console unattended on weeknights and weekends, and is therefore inadequate to comply with the requirements of § 195.446(b)(4). The procedure required shift change documents and conversations for the normal 24/7/365 consoles, but the local desk is a different operation involving two daytime shifts: approximately 6 a.m. to 2 p.m., and 2 p.m. to 10 p.m. In practice, there is a shift change document and conversation completed for the 2 p.m. weekday shift change, but no document created at the end of the 2 to 10 p.m. shift. A shift change document is required to provide the next oncoming controller a summary of the operations.

Additionally, there was no alternative, in the procedure, for monitoring alarms, normally assigned to the local desk during the unattended console times. Even if the pipeline is shut down, it was still considered in operation and therefore must have been monitored for leaks at a minimum.

Colonial must amend its procedure to adequately specify the method of recording shift changes and responsibility changes for controllers as required by § 195.446(b)(4).

5. § 195.446 Control room management.

(a) *General.* This section applies to each operator of a pipeline facility with a controller working in a control room who monitors and controls all or part of a pipeline facility through a SCADA system. Each operator must have and follow written control room management procedures that implement the requirements of this section. The procedures required by this section must be integrated, as appropriate with the operator's written procedure required by §195.402. An operator must develop the procedures no later than August 1, 2011 and must implement the procedures according to the following schedule. The procedures required by paragraphs (b), (c)(5), (d)(2) and (d)(3), (f) and (g) of this section must be implemented no later than October 1, 2011. The procedures required by paragraphs (c)(1) through (4), (d)(1), (d)(4) and (e) must be implemented no later than August 1, 2012. The training procedures required by paragraph (h) must be implemented no later than August 1, 2012, except that any training required by another paragraph of this section must be implemented no later than the deadline for that paragraph.

Colonial's procedures failed to address the testing and verification of the internal communications plan for manual operation and was therefore inadequate to comply with the requirements of § 195.446(c)(3).

Colonial's CRM plan only requires "[T]esting and Verification of the internal communication and manual operations procedures for a controlled shutdown of the pipeline(s)" Colonial indicated that because its system is so large, having a procedure for all contingencies would be too great a burden. So, instead, the operator had opted to shut down the pipeline and write specific procedures for the manual operation of the system. Colonial had performed such operations in the past. While actual events are acceptable methods to count as a test of a plan or process, an operator must conduct a test within the required intervals. Therefore, simply not having an actual event would not relieve the operator from the testing requirement.

Additionally, Colonial had two procedures, EOP-COC-K30 Complete Loss of Communication (SCADA and Voice) and AOP-CPC-J32 (SCADA only failure). The second procedure did not require a complete shut down, but accommodated sending personnel to field locations to monitor or control and report back to the controller or send monitor/control to Alpharetta. AOP-CPC-J32, as written, required a plan and testing requirements, which were not provided in the procedure. The CRM plan did not reference the second procedure, AOP-CPC-J32.

Colonial must amend its procedures to require testing of manual operations of the pipeline once each calendar year not to exceed 15 months.

6. § 195.446 Control room management.

- (a) General. This section applies to each operator of a pipeline facility with a controller working in a control room who monitors and controls all or part of a pipeline facility through a SCADA system. Each operator must have and follow written control room management procedures that implement the requirements of this section. The procedures required by this section must be integrated, as appropriate with the operator's written procedure required by §195.402. An operator must develop the procedures no later than August 1, 2011 and must implement the procedures according to the following schedule. The procedures required by paragraphs (b), (c)(5), (d)(2) and (d)(3), (f) and (g) of this section must be implemented no later than October 1, 2011. The procedures required by paragraphs (c)(1) through (4), (d)(1), (d)(4) and (e) must be implemented no later than August 1, 2012. The training procedures required by paragraph (h) must be implemented no later than August 1, 2012, except that any training required by another paragraph of this section must be implemented no later than the deadline for that paragraph.**

Colonial's procedure for testing the backup SCADA systems failed to require testing the field servers and was therefore inadequate to comply with the requirements of § 195.446(c)(4). Colonial interpreted the field servers (Hebert, Linden and Greensboro) as "redundant" and therefore outside the testing requirements for backup SCADA systems. The two servers were "redundant" in that they had identical hardware, software, programming, etc. Theoretically, if one server failed, the other server should, by design, automatically and instantaneously take control of the operation. However, classifying a pair of servers as "redundant" does not exempt them from the testing requirement. The regulation requires each operator to "[t]est *any* backup SCADA systems." "Backup SCADA systems" is a broad term that considers all facets and factors of a control room operation. Without these assets, the system must be operated in manual mode. The two servers, as a pair, were a backup SCADA system and Colonial must test them and verify and document that, if one failed, the other successfully switched during normal operations.

Colonial must amend its procedure to provide a test of the field SCADA servers once calendar year not to exceed 15 months.

PHMSA notes that after the field inspections, Colonial addressed this inadequacy by developing a procedure for testing the SCADA field servers. No further action is required.

7. § 195.446 Control room management.

(a)

(e) Alarm management. Each operator using a SCADA system must have a written alarm management plan to provide for effective controller response to alarms. An operator's plan must include provisions to:

(1)

(2) Identify at least once each calendar month points affecting safety that have been taken off scan in the SCADA host, have had alarms inhibited, generated false alarms, or that have had forced or manual values for periods of time exceeding that for required associated maintenance or operating activities.

Colonial's procedure for the monthly review of safety related alarms failed to define the process of review as required by § 195.446(e)(2). Specifically, Colonial did not include the process of review in its CRM Plan Revision 13.0 7/2/2020 or its Alarm Management Plan Revision 19.0 7/2/2020. Colonial had included roles and responsibilities of various positions for the review, but did not provide details on how the personnel would conduct the reviews. The Alarm Management Plan described how these events were to be logged, but Colonial did not include any language related to the form, format, review purposes, or type of analysis to be performed.

Also, the Alpharetta control room SCADA system and field control room SCADA (iFix) systems were different. Colonial only applied the monthly review to Alpharetta because Colonial indicated the iFix system did not have the capability to manage points (off scan, inhibit, force or manual), and collect and review. However, the iFix systems may, in the RTU or PLC, take points off-scan, and inhibit or place a point in a forced or manual condition. Therefore, these devices were part of the SCADA system and the iFix systems' events needed to be included in the scope of the monthly review. Colonial did not mention this in their procedure, and they stated that since their SCADA did not have these capabilities, they had not developed a procedure to address this requirement.

Colonial must amend its procedures to define the process for capturing the events, gathering for review, analyzing and documenting points affecting safety that have been taken off scan in the SCADA host, had alarms inhibited, generated false alarms, or that had forced or manual values for periods of time exceeding that for required associated maintenance or operating activities. Additionally, Colonial must amend its procedures to identify any deviations from this requirement, especially if it relates to system capabilities.

8. § 195.446 Control room management.

(a)

(h) Training. Each operator must establish a controller training program and review the training program content to identify potential improvements at least once each calendar year, but at intervals not to exceed 15 months. An operator's program must provide for training each controller to carry out the roles and responsibilities defined by the operator. In addition, the training program must include the following elements:

Colonial's controller training program (CRM Plan Revision 13.0 7/2/2020) failed to require a review at least once each calendar year, but at intervals not to exceed 15 months and was therefore inadequate to comply with the requirements of § 195.446(h). Colonial had separate training paths. One path was for

the Alpharetta Main Control Room group, developed and managed by Control Room staff, and the other was for Field personnel, developed and managed by the corporate training group. The corporate training group did not have a specific procedure to review any field training content, under their responsibility. A representative from the corporate training group indicated they utilized a “continual effectiveness review” process, but the operator could not provide any written procedure that included the annual review requirement. Colonial had also decided its compliance group would audit the training programs, but there was no written procedure in place for this group to perform such an audit. While accountability and responsibility for the training programs and content fell under separate organizations, both must have adhered to the review requirements under § 195.446(h).

Colonial must amend its procedures to require a controller training program review at least once each calendar year, at intervals not to exceed 15 months. The procedure must include sufficient detail and documentation to identify what was reviewed, including all findings and improvements.

Response to this Notice

This Notice is provided pursuant to 49 U.S.C. § 60108(a) and 49 C.F.R. § 190.206. Enclosed as part of this Notice is a document entitled Response Options for Pipeline Operators in Enforcement Proceedings. Please refer to this document and note the response options. Be advised that all material you submit in response to this enforcement action is subject to being made publicly available. If you believe that any portion of your responsive material qualifies for confidential treatment under 5 U.S.C. § 552(b), along with the complete original document you must provide a second copy of the document with the portions you believe qualify for confidential treatment redacted and an explanation of why you believe the redacted information qualifies for confidential treatment under 5 U.S.C. § 552(b).

Following the receipt of this Notice, you have 30 days to submit written comments, revised procedures, or a request for a hearing under § 190.211. If you do not respond within 30 days of receipt of this Notice, this constitutes a waiver of your right to contest the allegations in this Notice and authorizes the Associate Administrator for Pipeline Safety to find facts as alleged in this Notice without further notice to you and to issue an Order Directing Amendment. If your plans or procedures are found inadequate as alleged in this Notice, you may be ordered to amend your plans or procedures to correct the inadequacies (49 C.F.R. § 190.206). If you are not contesting this Notice, we propose that you submit your amended procedures to my office within 30 days of receipt of this Notice. This period may be extended by written request for good cause. Once the inadequacies identified herein have been addressed in your amended procedures, this enforcement action will be closed.

It is requested that Colonial Pipeline maintain documentation of the safety improvement costs associated with fulfilling this Notice of Amendment (preparation/revision of plans, procedures) and submit the total to Gregor A. Ochs, Director, Central Region, Pipeline and Hazardous Materials Safety Administration. In correspondence concerning this matter, please refer to **CPF 3-2022-028-NOA** and, for each document you submit, please provide a copy in electronic format whenever possible.

Sincerely,

Gregory A. Ochs
Director, Central Region, OPS
Pipeline and Hazardous Materials Safety Administration

cc: Quintin Frazier, Director, Pipeline Compliance QFrazier@colpipe.com

Enclosure: Response Options for Pipeline Operators in Enforcement Proceedings