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

901 Locust Street, Suite 480
Kansas City, MO 64106

NOTICE OF PROBABLE VIOLATION
PROPOSED CIVIL PENALTY
and
PROPOSED COMPLIANCE ORDER

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

May 5, 2022

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

CPF 3-2022-026-NOPV

Dear Mr. Blount:

From January 27 – November 12, 2020 and October 29 – November 4, 2021, 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) procedures and records for Control Room Management (CRM) in Linden, New Jersey; Hebert, Louisiana; Greensboro, North Carolina; and Alpharetta, Georgia.

This Notice is in response to PHMSA's Control Room Management (CRM) Initiative, which is 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.

As a result of the inspection, it is alleged that you have committed probable violations of the Pipeline Safety Regulations, Title 49, Code of Federal Regulations (CFR). The items inspected and the probable violations are:

1. § 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 procedure required by this section must be integrated, as appropriate with the operator's written procedures required by §195.402…

Colonial failed to follow its procedure, ADM-CPC-008 Rev.2 7/1/2019 Point-To-Point Verification, when documenting a point-to-point verification between SCADA displays and related field equipment, per § 195.446(c)(2), for 87 safety related pressure transmitter alarms for the Linden Station in calendar year 2019.

Page 2 of the procedure, titled Requirements, item 4 states "Documentation as evidence of point-to-point verification is required including the actual field parameters, as measured in the field, and the corresponding SCADA HMI display information. . . . Documentation will include data and names of individual involved in the verification." Item 7, on the same page, states, "All new points added to the SCADA system and or changes to the HMI display required point-to-point verification to ensure correct operation and functionality." Section 1.2, Explanation of adequate point-to-point verification, includes verification of the actual physical location and sequence among other devices and equipment at the location and verifying the data, information, and any control or alarm functions to/from the point are being accurately represented on all local HMI displays/SCADA system on which it resides.

Section 5, Pressure Transmitters and Analog Set-Points defines the analog values of HI (High) and HI-HI(Max) as Safety Related alarms. Section 5.5 states: "**NOTE** the as-found value for Point-to Point Verification documentation in SLM" (emphasis in original). Section 5.7 states: "**NOTE** the as-left value for Point-to-Point Verification documentation in SLM form (emphasis in original)"

Section 9.0 SLM Point-to-Point identifies the Safety Life Cycle Management (SLM) software application for documenting all safety related point-to-point testing. General steps for completing documentation for a safety related point/alarm (SRA) in SLM are included. Sections 9.4.5 and 9.4.6, identified as "Required Input Field(s)," require a value or set-point at which the device activates initiating alarm prior to maintenance, calibration, or repair.

Section 10.1 relates to record retention and states: "Completed point-to-point verifications are located in the SLM application…," followed by 10.1.2 stating, "Any other form of documented point-to-point verification is not considered as the official record and can be discarded after uploading to SLM."

A review of the Linden 2019 SRA point-to-point records identified 87 records for pressure transmitters where no documentation was entered for as-found/as-left field. This included 19 records for both addition of new equipment and modification of existing equipment which failed to meet the requirement of procedure ADM-CPC-008 Rev.2 7/1/2019 Point -to-Point Verification.

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 procedures required by §195.402…

Colonial failed to follow their procedures when conducting and documenting point-to-point verifications in SLM for Safety Related Alarms (SRA) to ensure alarms are accurate and support safe pipeline operations, per § 195.446(e)(1) and § 195.428(d). A review of 2019 SRA completed tests for Hebert, Linden, Alpharetta, and Greensboro identified either no documentation for as-found as-left conditions (cells were blank), or it was filled in with N/A or NA. These responses were inclusive for the SLM Reasons for the Point-to-Point related to Addition of New Equipment, Preventative Maintenance, and Modification of Existing Equipment.

A select review of SLM 2019 Point to Point and calibrations records for Hebert, Alpharetta, Linden, and Greensboro identified the following as-found/as-left data fields blank or marked NA or N/A: 1) Addition of New Equipment (All Types) Hebert 8 data points, Alpharetta 135 data points, Linden 34 data points, and none for Greensboro; 2) Preventative Maintenance (Pressure Transmitters/Switch-Hi Press/SD) Hebert 70 data points, Alpharetta 3 data points, Linden 88 data points, and Greensboro 5 data points; 3) Modification of Existing Equipment (Pressure Transmitters/Switch -Hi Press/SD) Hebert 28 data points, Alpharetta 3 data points, Linden 7 data points, none for Greensboro.

Additionally, a review of Alpharetta records for alarm descriptions "SRA- Max Tank," provided in a spreadsheet titled SRA Completed Tests for Alpharetta ACC from Jan-01-2019.xlsx, identified inconsistent results in the documentation. A Review of the "Reason for Point to Point" field from the record found some "as-found/as-left" results were entered as values, and other fields were completed with "NA" or "N/A," or with "NA" for the "as-found" field with a value entered for the "as-left" field.

Procedure ADM-CPC-008 Rev. 2 07/1/19 Section 1.0, Changes that Require Point-to-Point Verification, provides the conditions when a point-to-point verification is required. In the Requirements Section, item 7 states: "All new points added to the SCADA system and or changes to the HMI display require point-to-point. . . ." This is reiterated in Section 9.2.5.4.1 of the procedure. Item 4 of the Requirements section states: "Documentation as evidence of point-to-point verification is required including the actual field parameters, as measured in the field,

and the corresponding SCADA HMI display information." Under section 1.1.2.1, equipment installation is defined as "addition of new field equipment into operations." Sections 1.1.2.2, Equipment replacement/repair, and 1.1.2.3 Equipment Maintenance, are defined as preventative maintenance specified in the Equipment Maintenance Manual. Section 5.0, Pressure Transmitters and Analog Set-Points, define analog values of HI (High) and HI-HI (Max) as safety related. The procedures of section 5 provide a process for verification, which includes documenting the as-found and as-left. Section 6.*0*, Pressure Switches, provides a similar process requiring documentation for as-found and as left. Section 9.0, SLM Point-to-Point Required Fields for SLM Point-to-Point Verification include: 9.4.5 Value "As Found" (Required Input Field) and 9.4.6 Value "As Left" (Required Input Field). There is no language in the procedure to leave a cell block blank or insert NA or N/A as a compliant response for as-found or as-left. Finally, Section 10.0, SLM Point-to-Point Verification Documentation Retention Policy states official records older than three years are purged.

The Safety Life Cycle Management (SLM) application is used to track point-to-point for safety related alarms (SRA). The Alpharetta SLM identifies 11 safety related devices; Block Relief/ Valves, Booster & Unit, CPM Leak Detection, Emergency Shut Down, Power System, Pressure Switch, Pressure Transmitter, Relief/Surge Breakout Tank, Safety, Sump and Tank. Hebert, Greensboro and Linden have similar devices, but not exact. All associated alarms are tagged SRA. Each device, when reviewed as a group, displays the same inconsistencies in the results as the SRA-Max Tank.

The records provided by Colonial represent SRA point to point completed in 2019 for Alpharetta, Greensboro, Linden, and Hebert. Dates with time stamps are included in the document of record. The procedure required point-to-point verifications with documentation of the values as-found and as-left. There was no consideration for no entry (blank spaces) or use of NA or N/A. Colonial failed to follow their procedures when conducting and documenting point-to-point verifications in SLM for Safety Related Alarms.

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. . . .

Colonial failed to complete and document verifications of alarm set-point and alarm descriptions in compliance with its procedures when associated field instruments were calibrated or changed, as required by § 195.446(e)(3), for 5 safety related points at the Greensboro facility. They also were not able to verify, for the years 2017, 2018, and 2019, all safety-related alarm set-point values and alarm descriptions were correct.

Procedure ADM-CPC-008 Rev.2, 7/1/19 Point-to-Point Verification of Safety Points section 10.1 states: "Completed point-to-point verifications are located in the Safety Life Cycle Management (SLM) application under the 'Reports' tab." Section 10.1.1 Official Record states:

"Purge records older than 3 years." Section 10.1.2 states: "Any other form of documented point-to-point verification is not considered as the official record and can be discarded after uploading to SLM." Section 1.1.2.3, defines "equipment maintenance" as conducting any preventative maintenance as specified within the Equipment Maintenance Manual. Sections 5 and 6 describe various field preventative maintenance and calibration type activities, as well as what information is required to be documented in SLM. These sections support compliance with the requirements of §195.428 for overpressure safety devices and overfill protection systems. Section 9 provides instructions on how to complete the documentation in SLM. Attachment C identifies a list of safety related points in Table 5.1 of the Equipment Maintenance Manual Section 5. It concludes with Attachment D Tables 5.2 and 5.3 – Safety Related Alarms Listed by Equipment Maintenance Procedures.

In a memo dated 5/21/19 from an Operations Analyst, Subject: Overdue SLM Points Report, the Operations Analyst provided a report listing overdue SLM points by system. This was followed up with an email by the Operations Analyst on 7/22/2019, Subject Overdue ACC SLM Points. This email identified roughly 2300 points overdue and possible reasons for the tests not taking place or being scheduled. An email on 12/11/2019 from the Manager CRM, Subject SLM P2P Testing – Past Due Test Records, identified that only 5 of 17 locations indicated 100% complete for P2P testing. An email dated 10/22/2020 from the Operations Analyst provides a list of points that are overdue for P2P in the SLM system. Five points were identified for the Greensboro location that were overdue for testing in the SLM system; one of which was a Leak Alarm.

Additionally, Colonial failed to provide records to demonstrate they verified correct safety-related alarm set-point values and alarm descriptions for all safety related alarms at least once each calendar year not to exceed 15 months. Colonial has safety related alarms that relate to tank levels and reliefs requiring annual calibration, as discussed above. However, there are other safety related alarms that the system manages outside of these alarms that must also be reviewed.

At the time of the inspection, and in a subsequent telephone call on June 24, 2021, Colonial believed they completed all the safety related alarm verifications, but they did not have adequate records to demonstrate compliance. Colonial has had multiple issues with their SLM application and employee documentation performance since it was implemented in 2017. Some of the issues included: employees not entering data into SLM, information not being maintained in the data base or presenting properly, and the application, per Colonial, not being well designed for Colonial's application.

While identifying and working through issues, Colonial filed a deviation on 12/3/2019 stating the reason for the deviation as, "P2P test records show concerns with annual SRA testing documentation in SLM. Potential for lack of sufficient test records for 3 years per the RRS." During the Hebert and Greesnboro inspection of May 11 – 15, 2020, PHMSA identified that SRA records in SLM were not presenting in the database. The Manager CRM, believed it had something to do with the application and indicated he had been working with the contractor. On May 12, 2020, the Manager CRM reopened the original deviation adding the following comment, "Implemented new "checks and balances" to provide additional oversite of requiring testing and documentation."

Colonial failed to complete and document verifications of alarm set-point and alarm descriptions when associated field instruments were calibrated or changed for 5 safety related points.

4. § 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…

Colonial pipeline failed to provide a procedure to satisfy the requirements of § 195.446(e)(3) that require verification of the correct safety-related alarm set-point values and alarm descriptions when associated field instruments are calibrated or changed and at least once each calendar year not to exceed 15 months.

Colonial's CRM Procedure Revision 13.0: 7/02/20, in the section titled Alarm Management Plan, includes the language of § 195.446(e). This section also references Colonial's *Alarm Management Plan* (AMP) Revision 19: 7/10/20. The AMP section states the language of the regulation on page 4/80. In the section titled *Alarm System Point-to-Point Requirements,* item 2 states: "The operator must verify the correct safety-related alarm set-point values and alarm descriptions when associated field instruments are calibrated or changed at least once each calendar year, but at intervals not to exceed (15) months." The CRM procedure misstates the regulation by not including the word "and" in the part of the requirement following "calibrated or changed" and before "at least once each calendar year." This word "and" in § 195.446(e)(3) adds the additional requirement to review all points affecting safety, not just those changed or calibrated.

The ALM also referenced procedure ADM-CPC-008 Point-to-Point Verification revision 2: 7/1/19 which specifically addressed when point-to-points must be conducted. The procedure did not include the requirement for all points affecting safety to be reviewed or describe a process for the review. This procedure did not reference § 195.446(e)(3), but only provides compliance with § 195.446(c)(2).

5. § 195.446 Control room management.

(c) *Provide adequate information.* Each operator must provide its controllers with the information, tools, processes and procedures necessary for the controllers to carry out the roles and responsibilities the operator has defined by performing each of the following:
(1)…
(3) Test and verify an internal communication plan to provide adequate means for manual operation of the pipeline safely, at least once each calendar year, but at intervals not to exceed 15 months;

Colonial failed to test and verify its internal communication plan to provide adequate means for manual operation of the pipeline at Linden and Hebert in 2017, 2018, and 2019 , at Greensboro in 2018 and 2019, Alpharetta in 2017, Baton Rouge, Collins and Charlotte in 2018, 2019, 2020.

Colonial had four procedures that relate to some type of communication loss: AOP-CPC-J32 and EOP-CPC-K30 for field operations, and AOP-CC-J32 and EOP-CC-J32 for the Alpharetta

control center. There is also the document Control Room Management Manual Operation of a Pipeline System. This document references the identified AOP and EOP procedures. The CRM Plan, Revision 12.0: 1/15/20, and the CRM Plan Revision 13.0: 7/2/20, state: "Due to the complexity of CPC's operations system and rarity of such events, CPC does not have a specific internal communication plan for manual operation and will not operate a line or system manually without prior implementation of an internal communication plan." For all practical purposes, this is Colonial's plan.

The CRM Plans, versions 12.0 and 13.0, also state: "Testing and verification of internal communications and manual operations procedures for a controlled shutdown of the pipeline(s) in the event of a loss of SCADA and/or voice communications shall be conducted at least each calendar year, not to exceed (15) months." This sentence, does not meet the requirement of §195.446 (c)(3), which requires the operator to "[t]est and verify an internal communication plan to provide adequate means for manual operation of the pipeline safely." This section is not intended to just shut down the pipeline in Colonial's case, but includes monitoring and manual operation of the pipeline, which may include manual shut down and/or start up in the event of SCADA loss as well as a method for leak detection.

Colonial does not have a compliant plan to be used for an annual test/drill at least once each calendar year, not to exceed 15 months. Their procedure describes a condition where they will continue to operate the pipeline, by dispatching field personal to locations and having them report to the controller on a periodic basis. Colonial indicated if they had a complete loss of communication they would shut down and write a specific operating procedure. Colonial further indicated for Hebert, Greensboro, and Linden they had no events where they had a complete loss of SCADA and voice where they needed to shut down and write special procedures. Colonial does not have a specific plan for these events. Colonial is not exempt from having and testing a plan for manual operations, which includes monitoring and shutdown, to be completed once each calendar year, not to exceed 15 months.

Respondent's failure to test and verify its internal communication plan contributed to consequences that occurred when, on May 7, 2021, Colonial Pipeline was the victim of a cyber-attack which required the immediate shutdown of the entire pipeline system. After evaluating operating characteristics/limitations throughout the system, as well as societal impact, Colonial identified several main and stub lines for manual restart prioritization and began developing Line/Segment-specific procedures for manual operation. On May 9, 2021, the first of several incremental and segregated restarts of various pipeline segments commenced, with a full system restart achieved on May 12, 2021. The pipeline shutdown impacted numerous refineries' ability to move refined product, and supply shortages created wide-spread societal impacts long after the restart. Since Respondent had not tested and verified an internal communication plan when the cyber-attack occurred, as was required by the regulation, Respondent was not prepared for manual restart and manual operation of its pipeline. Colonial Pipeline's ad-hoc approach toward consideration of a "manual restart" created the potential for increased risks to the pipeline's integrity as well as additional delays in restart, exacerbating the supply issues and societal impacts.

6. § 195.446 Control room management.

(c) Provide adequate equipment. **Each operator must provide its controllers with the information, tools, processes and procedures necessary for the controllers to carry out the roles and responsibilities the operator has defined by preforming each of the following:**
(1)…
(4) Test any backup SCADA systems at least once each calendar year, but at intervals not to exceed 15 months;

Colonial failed to test the SCADA backup servers at the Linden, Hebert, and Greensboro field operations control rooms at least once each calendar year, but at intervals not to exceed 15 months, for the years 2017, 2018, and 2019, in compliance with its operating procedures and § 195.446(c)(4).

Colonial employed an iFix SCADA system for all its field control rooms, which included Linden, Greensboro, and Hebert. The iFix is operated using two servers set up to run in parallel real time (the server clocks are synchronized). One server was considered primary and the other secondary. If the primary server fails, the secondary server almost instantaneously picks up the operation. This was intended to set up a seamless transition to avoid disruption to the control room operation of the pipeline. In a document titled "Controls Engineering Approach/Philosophy to HMI Field Controls," Revision 2.0: 11/2/17, Colonial established that the secondary server at the field locations was "redundant" and the redundancy includes "HMI server, client, driver, and network redundancy."

Based on this document, Colonial, in the document Control Room Management Plan, Revision 12.0: 1/15/20, took the position that, "Field Control Rooms utilized control systems that do not meet the requirement for having and maintaining a backup SCADA system." Colonial, therefore, did not test the field SCADA servers.

Section §195.446 does not require an operator to have a backup SCADA system, but it does require that, if they have a backup SCADA system, the system must be tested. The pair of SCADA servers, employed in Colonial's field control room operation, are elements in the SCADA system. The SCADA system does not require both servers to be functional for the system to operate. The secondary server is in place to take over for the primary receiver if the primary server fails. If both servers fail, the SCADA system cannot operate. The secondary server is the backup to the primary server and provides the same operational functionality as the primary server in the event of a failure of the primary server. Therefore, the designation of "redundant" does not exempt the backup server from testing to comply with §195.446(c)(4).

After PHMSA inspectors identified this issue, Colonial developed procedures and performed tests of their servers to meet the requirements of this section.

7. § 195.446 Control room management.

(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 required for associated maintenance or operating activities;

Colonial for Greensboro, Hebert and Linden failed to identify and record, at least monthly, all points affecting safety that had been taken off scan in the SCADA host; all points that have had alarms inhibited; or that have had forced or manual values for periods of time exceeding that required for associated maintenance or operating activities, per § 195.446(e)(2), for the years 2017, 2018 and 2019.

Colonial, during the inspection, stated that Controllers do not have the ability to change SCADA points in such a manner, and only the field or SCADA engineers (approved by a manager) could do this work. The regulation for identification of inhibited points, false alarms, or forced or manual values for points is not limited to only controller actions. All SCADA systems have the capability of taking a point off-scan. Colonial did maintain a file on their SharePoint site titled "Disabled Safety Points Tracking Log" for these events.

There was no attempt to review the SCADA logs or SharePoint log monthly, as evidence by the lack of records. There were no records to evidence any monthly review for points off scan, point that have had alarms inhibited, or that have had forced or manual values for period of time exceeding that required for associated maintenance or operating activities.

Proposed Civil Penalty

Under 49 U.S.C. § 60122 and 49 CFR § 190.223, you are subject to a civil penalty not to exceed $239,142 per violation per day the violation persists, up to a maximum of $2,391,412 for a related series of violations. For violation occurring on or after May 3, 2021 and before March 21, 2022, the maximum penalty may not exceed $225,134 per violation per day the violation persists, up to a maximum of $2,251,334 for a related series of violations.

For violation(s) occurring on or after January 11, 2021 and before May 3, 2021, the maximum penalty may not exceed $222,504 per violation per day the violation persists, up to a maximum of $2,225,034 for a related series of violations. For violation occurring on or after July 31, 2019 and before January 11, 2021, the maximum penalty may not exceed $218,647 per violation per day the violation persists, up to a maximum of $2,186,465 for a related series of violations. For violation occurring on or after November 27, 2018 and before July 31, 2019, the maximum penalty may not exceed $213,268 per violation per day, with a maximum penalty not to exceed $2,132,679. For violation occurring on or after November 2, 2015 and before November 27,

2018, the maximum penalty may not exceed $209,002 per violation per day, with a maximum penalty not to exceed $2,090,022.
We have reviewed the circumstances and supporting documentation involved for the above probable violations and recommend that you be preliminarily assessed a civil penalty of $986,400 as follows:

Item number	PENALTY
1	$ 31,100
2	$ 31,700
3	$ 31,700
5	$846,300
7	$ 45,600

Warning Item

With respect to item 6 we have reviewed the circumstances and supporting documents involved in this case and have decided not to conduct additional enforcement action or penalty assessment proceedings at this time. We advise you to promptly correct this item. Failure to do so may result in additional enforcement action.

Proposed Compliance Order

With respect to items 1, 2, 3, 4, 5, and 7, pursuant to 49 U.S.C. § 60118, the Pipeline and Hazardous Materials Safety Administration proposes to issue a Compliance Order to Colonial Pipeline. Please refer to the *Proposed Compliance Order*, which is enclosed and made a part of this Notice.

Response to this Notice

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. All material you submit in response to this enforcement action may be 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, or request a hearing under 49 C.F.R. § 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 a Final Order. If you are responding to this Notice, we

propose that you submit your correspondence to my office within 30 days from the receipt of this Notice. This period may be extended by written request for good cause.

In your correspondence on this matter, please refer to **CPF 3-2022-026-NOPV** and, for each document you submit, please provide a copy in electronic format whenever possible.

Sincerely,

GREGORY ALAN OCHS Digitally signed by GREGORY ALAN OCHS
Date: 2022.05.05 12:03:54 -05'00'

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

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

Enclosure: *Response Options for Pipeline Operators in Enforcement Proceedings*

PROPOSED COMPLIANCE ORDER

Pursuant to 49 United States Code § 60118, the Pipeline and Hazardous Materials Safety Administration (PHMSA) proposes to issue to Colonial Pipeline a Compliance Order incorporating the following remedial requirements to ensure the compliance of Colonial Pipeline with the pipeline safety regulations:

A. In regard to Item Numbers 1, 2, 3, and 4 of the Notice pertaining to deficiencies identified in procedures, activity and documentation related to point to point verification utilizing the SLM application for SRA points and alarms, Colonial Pipeline must complete the following:
   a. Correct the SLM database application to maintain records for "as-found/as left" information.
   b. Establish procedures for all points affecting safety, whose alarm set points and descriptions are verified through SLM to provide controllers and field personnel with clear steps and roles and responsibilities to complete the verification and documentation in SLM.
   c. Establish a procedure for documenting appropriate response to "as found/as left" for those devices that a numeric response may not be appropriate.
   d. Develop a process for management control system to monitor and manage the verification dates for all SRA points in SLM, to verify compliance with 195.446(e)(3).
   e. Develop a procedure to verify the correct alarm set-points values and alarm descriptions are reviewed at least once each calendar year not to exceed 15 months for points not related to those that have been calibrated or changed;
   f. Develop, outside of SLM, a Point to Point process, for points affecting safety, related to new or moved points, to thoroughly test and document the verification 195within 180 days of receipt of the Final Order. Please provide documentation of completion of this item to Director, Central Region within this timeframe. If the operator wishes to consider an alternative to SLM, then consultation with PHMSA will be expected.

B. In regard to Item Numbers 5 of the Notice pertaining to deficiencies identified in testing and verifying Colonial's internal communication plan, Colonial Pipeline must complete the following: Test and verify its internal communication plan to provide adequate means for manual operation for all Colonial control rooms (includes Alpharetta and field) within 90 days of receipt of the Final Order. Please provide documentation of completion of this item to Director, Central Region within this timeframe.

C. In regard to Item Number 7 of the Notice pertaining to deficiencies identified in failing to identify and record monthly, all points affecting safety that have been taken off scan in the SCADA host, all points that have had alarms inhibited or, that have had forced or manual values for periods of time exceeding that required of associated maintenance or operating activities, Colonial Pipeline must complete the following for Hebert, Linden, Greensboro:

   a. Develop procedures for the field control rooms that includes reports for points taken off scan in the SCADA host, have had alarms inhibited in both SCADA and field PLCs or RTUs points that report alarms to the controllers, points that have forced or manual values in the SCADA host and field PLCs or RTUs that report information to the controller.

b. Review document these reports to verify the events do not exceed the time required for associated maintenance or operating activities.
c. Develop a process to address and document deficiencies identified through the implementation of this process, within 90 days of receipt of the Final Order.

D. It is requested that Colonial maintain documentation of the safety improvement costs associated with fulfilling this Compliance Order and submit the total to Gregory A. Ochs, Director, Central Region, Pipeline and Hazardous Materials Safety Administration. It is requested that these costs be reported in two categories: 1) total cost associated with preparation/revision of plans, procedures, studies and analyses, and 2) total cost associated with replacements, additions and other changes to pipeline infrastructure.