



U.S. Department  
of Transportation

**Pipeline and  
Hazardous Materials Safety  
Administration**

8701 South Gessner, Suite 1110  
Houston, TX 77074

## NOTICE OF AMENDMENT

### CERTIFIED MAIL - RETURN RECEIPT REQUESTED

February 26, 2015

Mike Jordan  
Vice President - Hydrogen Business  
Praxair, Inc.  
1585 Sawdust Road  
Suite 300  
The Woodlands, TX 77380

**CPF 4-2015-1001M**

Dear Mr. Jordon:

On September 8-11, 2014, a representative of the Pipeline and Hazardous Materials Safety Administration (PHMSA) pursuant to Chapter 601 of 49 United States Code inspected the Praxair, Inc (Praxair) procedures and records for Control Room Management in The Woodlands, TX.

On the basis of the inspection, PHMSA has identified the apparent inadequacies found within Praxair's plans or procedures, as described below:

1. **§192.631 Control room management**
  - (a) **General.**
    - (1) **This section applies to each operator of a pipeline facility with a controller working in a control room that 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, except that for each control room where an operator's activities are limited to either or both of:**
      - (i) **Distribution with less than 250,000 services, or**
      - (ii) **Transmission without a compressor station, the operator must have and follow**

written procedures that implement only paragraphs (d) (regarding fatigue), (i) (regarding compliance validation), and (j) (regarding compliance and deviations) of this section.

**(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:**

**(2) Conduct a point-to-point verification between SCADA displays and related field equipment when field equipment is added or moved and when other changes that affect pipeline safety are made to field equipment or SCADA displays;**

The Praxair procedures were inadequate in that they did not identify the prompt completion of point-to-point verifications. The procedures did not define the time frame for the completion of point-to-point verifications.

The process of point-to-point verification is required by Federal Code 192.631(c)(2). PHMSA reviewed Procedure 35 Control Room Management, Addendum B section 3.2 Conduct Point-to-Point Verification between SCADA and Field Equipment, and SOP 835-11-47-PBC Safety Critical Point-to-Point Verification. Addendum B section 3.2 Point-to-Point Verification between SCADA and Field Equipment states,

*"All SCADA safety-related points are subject to a point-to-point verification when initially implemented and whenever changes are made to software, SCADA screens, or hardware at either end of the connections between the SCADA and field equipment. The verification procedure is explained in SOP# 835-11-47-PBC "Point-to-Point Verification Procedure"."*

SOP 835-11-47-PBC Safety Critical Point-to-Point Verification states the following,

*"Point to point verification is required to verify safety critical and safety related points on the pipeline... All safety critical/related points/devices must be identified and documented. Any changes to equipment that will result in a change in the alarm settings must also be logged and PBC Management as well as the PBC Alarm Champion must be notified."*

PHMSA expects point-to-point verifications be addressed in a timely manner. To maintain pipeline safety, verifications on active-points must be completed the day the verification was started. Verifications on new-points must be completed prior to activating the points on the pipeline system.

On September 12, 2014, Praxair amended the procedure. PMSA reviewed the amended procedure and no further action is required.

**2. §192.631(a)(1) Control room management**

**(See Item #1)**

**(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:**

**(4) Test any backup SCADA systems at least once each calendar year, but at intervals not to exceed 15 months;**

The Praxair procedures were inadequate in that they did not state that controllers have the authority to issue an order to evacuate the PBC Control Room.

Under §192.631(c)(4) requires that Praxair test the backup SCADA system once each calendar year. PHMSA reviewed O&M Addendum B sections 2.3.1 Authority and Responsibilities during Emergencies, 2.3.2 Control Room Evacuation and SOP 835-11-09-PBC PBC Primary Control Room Evacuation Procedure. In Addendum B, the section 2.3.2 Control Room Evacuation states,

*“In case of an emergency at the Primary Control Center such as Fire Alarm actuation the Pipeline Controller(s) on duty must take the PBC cell phone and proceed to the assigned muster point per building Emergency Procedures. In the event an evacuation of the Primary Control Center is ordered the Pipeline Controller(s) must follow SOP 835-11-09-PBC PBC Evacuation Procedures.”*

SOP 835-11-09-PBC PBC Primary Control Room Evacuation Procedure states,

*“The PBC Manager is accountable for issuing the order to evacuate the primary control center and for designating which backup location to proceed to. The PBC Manager is also responsible for identifying which personnel will carry-out the relocation, and informing any incoming shifts of where to report for duty.”*

PHMSA’s review revealed the procedures were inadequate in that they did not identify the controller’s authority to issue an evacuation order. Procedures must clearly define who is responsible for making the decision to transfer pipeline control to the backup SCADA system, and restoring control from backup to normal operations. This decision-making process must be a part of the annual testing.

On September 12, 2014, Praxair amended the procedure. PMSA reviewed the amended procedure and no further action is required.

3. **§192.631(a)(1) Control room management  
(See Item #1)**

**(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:**

**(6) Address deficiencies identified through the implementation of paragraphs (e)(1) through (e)(5) of this section.**

The Praxair procedures were inadequate as they did not provide a process controllers follow to address corrective actions for safety critical points requiring extended time to complete.

Under §192.631(e)(6) requires that deficiencies identified by applying 192.631(e)(2) must be addressed and remediated. PHMSA reviewed SOP 835-20-04-CRM Alarm Management Program and found the procedure lacked the processes used to remediate or perform a work-around for safety critical points requiring extended remediation periods. SOP 835-20-04-CRM Alarm Management Program states,

*“The Alarm Champion is responsible for monthly identification, recording, review, and analysis of points that have been taken off scan, 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... Controllers on duty are expected to inform the Alarm Champion via email if they witness or suspect any alarm problems or malfunctions. All alarm functions will be promptly reviewed and corrected by the alarm champion.”*

Praxair verbally conveyed the processes used to deal with extended downtime for malfunctioning safety critical points. Praxair procedures state deficiencies will be promptly remediated, but were inadequate to address the situations where remediation requires an extended time to complete, due to scheduling or acquisition of replacement parts.

On September 12, 2014, Praxair amended the procedure. PMSA reviewed the amended procedure and no further action is required.

Response to this Notice

This Notice is provided pursuant to 49 U.S.C. § 60108(a) and 49 C.F.R. § 190.237. Enclosed as part of this Notice is a document entitled *Response Options for Pipeline Operators in Compliance 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). 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, after opportunity for a hearing, 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. § 190.237). If you are not contesting this Notice, we propose that you submit your amended procedures to my office within 45 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 (not mandated) that Praxair, Inc. maintain documentation of the safety improvement costs associated with fulfilling this Notice of Amendment (preparation/revision of plans, procedures) and submit the total to R. M. Seeley, Director, Southwest Region, Pipeline and Hazardous Materials Safety Administration. In correspondence concerning this matter, please refer to **CPF 4-2015-1001M** and, for each document you submit, please provide a copy in electronic format whenever possible.

Sincerely,



R. M. Seeley  
Director, Southwest Region  
Pipeline and Hazardous Materials Safety Administration

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