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**

April 20, 2015

Mr. Steve Bergstrom
Executive Chairman, President and Chief Executive Officer
American Midstream Partners LP
1400 16th Street, Suite 310,
Denver, CO 80202

**CPF 4-2015-1008M**

Dear Mr. Bergstrom:

On June 16-23, 2014, a representative of the Pipeline and Hazardous Materials Safety Administration (PHMSA) pursuant to Chapter 601 of 49 United States Code inspected your procedures and records for Control Room Management Program in Houston, TX.

On the basis of the inspection, PHMSA has identified the apparent inadequacies found within the American Midstream (AMID) 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 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, 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.**

**(2) The procedures required by this section must be integrated, as appropriate, with operating and emergency procedures required by § § 192.605 and 192.615. 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.**

At the time of the inspection, AMID had not developed a documented process to review their pipeline assets to determine control room locations. A complete and formal process identifying control locations, specific assets, and applicable written CRM procedures is necessary. At the time of this inspection, the plan reviewed by PHMSA did not have in the applicability section the necessary procedures, established criteria, and asset information that could be reviewed periodically to identify additional control rooms. Also, AMID's CRM plan did not include a documented process to identify and integrate, as appropriate, operating and emergency procedures required by §§ 192.605 and 192.615, and to correct form changes, versions, and their incorporation into the plan.

**2. §192.631 Control room management.**

**(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, an operator must define each of the following:**
**(1) A controller's authority and responsibility to make decisions and take actions during normal operations;**
**(2) A controller's role when an abnormal operating condition is detected, even if the controller is not the first to detect the condition, including the controller's responsibility to take specific actions and to communicate with others;**
**(3) A controller's role during an emergency, even if the controller is not the first to detect the emergency, including the controller's responsibility to take specific actions and to communicate with others; and**
**(4) A method of recording controller shift-changes and any hand- over of responsibility between controllers.**

At the time of the inspection, AMID's CRM plan section on controller's roles and responsibilities; did not adequately address the following areas:

- AMID's CRM did not include a process to review of all AMID's manuals, including any O&M and Emergency Procedure, or other procedural documents to verify that all controller roles and responsibilities had been identified.

- AMID's CRM did not clearly identify all activities that a controller can and cannot do, e.g. points-off-scan in this section or throughout the other CRM documentation.

- AMID did not include specific cross-training criteria or console combination requirements. For example, generic versus console specific training/cross-training may change controller roles and responsibilities.

AMID procedures for shift changes did not specify that it is the responsibility of the controller to not turn over control to someone unfit for duty per the training they received concerning fatigue and fitness for service.

**3. §192.631 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) Implement sections 1, 4, 8, 9, 11.1, and 11.3 of API RP 1165 (incorporated by reference, see § 192.7) whenever a SCADA system is added, expanded or replaced, unless the operator demonstrates that certain provisions of sections 1, 4, 8, 9, 11.1, and 11.3 of API RP 1165 are not practical for the SCADA system used;**
**(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;**
**(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;**
**(4) Test any backup SCADA systems at least once each calendar year, but at intervals not to exceed 15 months; and**
**(5) Establish and implement procedures for when a different controller assumes responsibility, including the content of information to be exchanged.**

The American Midstream Control Room Management Plan (CRMP) lacks processes to address, correct and document testing of backup SCADA systems and addressing deficiencies identified during testing of backup SCADA systems.

PHMSA reviewed the American Midstream Control Room Management Plan, section 4.5 "Backup SCADA System"; and Procedure 5 "Backup SCADA Testing procedure." PHMSA identified deficiencies in both documents. The Control Room Management Plan fails to reference Procedure 5. The procedure fails to reference any specific equipment used or to list all possible equipment types that it applies to. There are no times, periods or intervals for remediation when deficiencies are found. The plan and procedures lack processes for safe pipeline operations where remediation time-limits for alarm deficiencies are exceeded.

At the time of the inspection, AMID's CRM included a general statement that AMID intended to comply with all regulatory requirements including referenced industry standards including API 1165. AMID did not include specific procedures to clarify what additions or expansions will require RP1165 implementations. Also, items not specifically addressed were:

- A review of all displays for RP1165 compliance and summarize the review including sufficient documentation.

• That the display review will include consistency requirements between screens and consoles and also verify that the CRM has color choices that are well defined.

• A requirement to note all display changes made.

AMID's CRM did not include a clear step-by-step process for completing their point-to-point and pseudo point check outs including when and how these are to be performed.

During the review of the AMID communication plan, PHMSA noted that the plan contained general testing protocols. The tests did not include specific documentation to support that an actual test has occurred and what was actually tested. AMID's communication plan did not require verification of what was tested, including appropriate test results, and if whatever did not work was fixed. Specifics regarding when to shut down a pipeline was not required to be included as part of the internal communications plan. Also, AMID's communication plan did not require all tests to be documented.

**4. §192.631 Control room management.**

**(d) Fatigue mitigation. Each operator must implement the following methods to reduce the risk associated with controller fatigue that could inhibit a controller's ability to carry out the roles and responsibilities the operator has defined:**
**(1) Establish shift lengths and schedule rotations that provide controllers off-duty time sufficient to achieve eight hours of continuous sleep;**
**(2) Educate controllers and supervisors in fatigue mitigation strategies and how off-duty activities contribute to fatigue;**
**(3) Train controllers and supervisors to recognize the effects of fatigue; and**
**(4) Establish a maximum limit on controller hours-of-service, which may provide for an emergency deviation from the maximum limit if necessary for the safe operation of a pipeline facility.**

PHMSA noted deficiencies in AMID's Fatigue Risk Management Plan (FRMP) reviewed.
The CRM rule requires operators to formalize their actual actions and processes in a formal written format that includes a complete documentation system. The details on what organizational level of involvement are to be included and how this will be implemented was not detailed in the plan. PHMSA also noted the following inadequacies:

• AMID's inconsistencies between the CRM Plan and the CRM Procedures. This could cause confusion on the part of the reader or reviewer.

• AMID's Fatigue Management Plan did not include a description of what would be done if a controller self-reports as being too fatigued to perform pipeline duties.

• AMID did not add the accident reporting requirements from other plans into the CRM plan or procedures.

**5. §192.631 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) Review SCADA safety-related alarm operations using a process that ensures alarms are accurate and support safe pipeline operations;**
**(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;**
**(3) Verify the correct safety-related alarm set-point values and alarm descriptions at least once each calendar year, but at intervals not to exceed 15 months;**
**(4) Review the alarm management plan required by this paragraph at least once each calendar year, but at intervals not exceeding 15 months, to determine the effectiveness of the plan;**
**(5) Monitor the content and volume of general activity being directed to and required of each controller at least once each calendar year, but at intervals not to exceed 15 months, that will assure controllers have sufficient time to analyze and react to incoming alarms; and**
**(6) Address deficiencies identified through the implementation of paragraphs (e)(1) through (e)(5) of this section.**

During the inspection American Midstream provided PHMSA two documents that encompass their control room Management program. One is entitled Control Room Management Plan (CRMP) and the other is the Control Room Procedures Manual (Procedures). The American Midstream Control Room Management Program that is specific to Alarm Management lacks the required specifics and must be amended. Areas that require amendment are detailed below.

There is no revision date on the CRMP or Procedure provided.

Section 6 of the CRMP is designed to be the Alarm Management procedures. On Page 17 it seems to make a reference to an "Alarm Response" procedure in the "Gas control procedure manual". In reviewing the Procedure manual this seems to be "Procedure 10" entitled Alarm Procedure. This procedure states it "defines the process for properly responding to alarms". But this procedure simply lists different alarm categories and makes statements that the alarms should be responded to. This procedure lacks sufficient details on what the proper response should be, and the specific timeliness of the response times. The use of "in a timely manner" or "second in priority" is not adequate for an operator's procedures.

Again on page 17 of the CRMP (section titled 192.631(e)(2)) is a paragraph that simply mimics the regulations and then refers to the American Midstream Control Monthly Alarm/Point Review Procedure (Procedure 12). Under Frequency it reads: "Monthly (due to lack of resources/development this procedure has not historically been done." These procedures lack the specifics of a complete procedure. For example, they do not provide for an analysis of the data from the review. They do not detail what will be done with deficiencies found during the monthly identification. In addition, Procedure 12 specifically states it has not been fully developed.

**6. §192.631 Control room management.**

**(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:**
**(1) Responding to abnormal operating conditions likely to occur simultaneously or in sequence;**
**(2) Use of a computerized simulator or non-computerized (tabletop) method for training controllers to recognize abnormal operating conditions;**
**(3) Training controllers on their responsibilities for communication under the operator's emergency response procedures;**
**(4) Training that will provide a controller a working knowledge of the pipeline system, especially during the development of abnormal operating conditions; and**
**(5) For pipeline operating setups that are periodically, but infrequently used, providing an opportunity for controllers to review relevant procedures in advance of their application.**

AMID's Change Management Plan as presented had deficiencies in the procedures reviewed with respect to implementing section 7 of API RP 1168 for control room management change and requiring coordination between control room representatives, operator's management, and associated field personnel when planning and implementing physical changes to pipeline equipment or configuration as identified below:

- AMID's Management of Change (MOC) documentation is not formalized and does not describe the actual changes made and what was changed.

- AMID's calibrating procedures for reviewing alarm set points did not include all applicable details.

- AMID did not include asset changes in the CRM manual regarding the MOC process.

**7. §192.631 Control room management.**
**(g) Operating experience. Each operator must assure that lessons learned from its operating experience are incorporated, as appropriate, into its control room management procedures by performing each of the following:**
**(1) Review incidents that must be reported pursuant to 49 CFR part 191 to determine if control room actions contributed to the event and, if so, correct, where necessary, deficiencies related to:**
**(i) Controller fatigue;**
**(ii) Field equipment;**
**(iii) The operation of any relief device;**
**(iv) Procedures;**
**(v) SCADA system configuration; and**
**(vi) SCADA system performance.**
**(2) Include lessons learned from the operator's experience in the training program required by this section.**

AMID's procedures for operating experience as presented had a number of areas where PHMSA noted deficiencies in the procedures reviewed with respect to including lessons learned from the operator's experience in the training program required by this section as identified below:

- The root cause analysis technique used by AMID was not described in the CRM manual.

- The parties responsible for performing the root cause analysis were not identified.

- No provision for determination if Control Room actions or INACTIONS contributed to an event.

- Training in not required to be reviewed for consistency with procedures to ensure no erroneous training is conducted.

**8. §192.631 Control room management.**
**(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:**
**(1) Responding to abnormal operating conditions likely to occur simultaneously or in sequence;**
**(2) Use of a computerized simulator or non-computerized (tabletop) method for training controllers to recognize abnormal operating conditions;**
**(3) Training controllers on their responsibilities for communication under the operator's emergency response procedures;**
**(4) Training that will provide a controller a working knowledge of the pipeline system, especially during the development of abnormal operating conditions; and**
**(5) For pipeline operating setups that are periodically, but infrequently used, providing an opportunity for controllers to review relevant procedures in advance of their application.**

AMID's procedures for training as presented had a number of general deficiencies in the training procedures reviewed as identified below:

- AMID's training section lacked adequate detail and requires more content, substance, and formality to meet the requirements/intent of the code.

- New system asset training has not been addressed in AMID's training section of the CRM plan. Class room training, hydraulic review, simulation, and beginning low flow conditions have not been included in the manual.

- AMID has not reviewed controller and cross-training assessment documentation. Hours of Service (HOS) for individuals in training and receiving span-of-control of 1:1 training has not been addressed by signing, (with date and time) the shift change document.

• AMID has not included interviews with supervisors as well as a trainee's activities in their training plan. Also, AMID has not constructed formality and implementation references associated with identified improvements in training.

• AMID has not included procedures to cross-check to confirm O&M, Emergency, CRM, and other specific plan sections are addressed in the Roles and Responsibility section and that all roles and responsibilities are covered in the CRM training program.

• AMID has not included the training module completed list for controllers and supervisors in their training plan.

• AMID had not emphasized that controllers should "Think leak first" in the training material.

• AMID has not addressed explicitly explaining differences between consoles in the training section (Highpoint versus American Midstream).

•AMID's procedures for training did not include responding to abnormal operating conditions likely to occur simultaneously or in sequence.

AMID's procedures for training as presented had a number of areas where PHMSA noted general deficiencies in the training procedures reviewed with respect to the use of a computerized simulator or non-computerized (tabletop) method for training controllers to recognize abnormal operating conditions. Each issue is identified below:

• AMID did not adequately address information about control room participation in field driven tabletop exercises or spill drills as verbally described by AMID personnel during the inspection.

• AMID plan does not include consideration for working with executive management to allow controller input to the selection of field tabletop scenarios.

• AMID has not included simulating AOCs not addressed elsewhere, (communication outages for example) in their training procedures.

AMID's procedures for training as presented had a number of areas where PHMSA noted deficiencies in the procedures reviewed with respect to providing a controller a working knowledge of the pipeline system, especially during the development of abnormal operating conditions. AMID must amend their procedures to address each issue as identified below:

• AMID did not include HAZOPS, trouble logs, and other monthly reviews of lessons learned in their training program.

• AMID did not include covering older selected lesson learned (war stories) with new controllers in their training section.

• AMID did not incorporate operating experience components into their training program.

AMID's procedures for training as presented had a number of deficiencies in the procedures reviewed with respect to pipeline operating setups that are periodically, but infrequently used, providing an opportunity for controllers to review relevant procedures in advance of their application. Each issue as identified below:

- AMID did not include seldom used procedures/set-ups in the training section.

- AMID did not include equipment position regarding power failure in their training program.

**9. §192.631 Control room management.**
**(i) Compliance validation. Upon request, operators must submit their procedures to PHMSA or, in the case of an intrastate pipeline facility regulated by a State, to the appropriate State agency.**

At the time of the inspection, AMID's procedures for compliance validation did not include a log to document CRM plan requests and the operator's response to the requests. AMID's procedures did not include the date of the request to submit their plan, the date of the plan submittal, the person's title responsible for submitting the plans, and the person to whom the plan is submitted.

**10. §192.631 Control room management.**
**(j) Compliance and deviations. An operator must maintain for review during inspection:**
**(1) Records that demonstrate compliance with the requirements of this section; and**
**(2) Documentation to demonstrate that any deviation from the procedures required by this section was necessary for the safe operation of a pipeline facility.**

AMID's procedures for compliance and deviations as presented had deficiencies in the procedures reviewed with respect to the requirement that operators must maintain for review during inspection, records that demonstrate compliance with the requirements of this section. AMID must amend their procedures to address each issue as identified below:

- AMID's procedures did not ensure that the documentation of deviations applies to all aspects of the CRM plan.

- AMID's procedures did not provide sufficient detail to know how documentation of deviations will be pulled together for future reference.

- AMID's procedures did not include information about the various electronic record storage media and associated durations.

At the time of the inspection, AMID's procedures did not ensure that deviations must be required as a result of pipeline safety considerations or that the reason for the deviation regarding pipeline safety impact is documented or ensure routine and cyclical deviations are addressed in the CRM manual.

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 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 (not mandated) that American Midstream 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 4-2015-1008M** 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*