

## Subject: Control Room Management Language (New Section 192.631)

Based on the December 11 and 12, 2008 PHMSA Technical Pipeline Safety Standards Committee vote.

Sample Language:

“Alarm” Definition - Alarm means an audible or visible means of indicating to the operator an equipment or process is outside operator defined safety related parameters.

“Control Room” Definition – Control room means an operations center staffed by personnel charged with responsibility for remotely monitoring and controlling entire or multiple sections of pipeline systems.

“Controller” Definition – Controller means a qualified individual whose function is to remotely monitor and control the operations related to safety of the entire or multiple sections of pipeline systems via a SCADA system from a pipeline control room, and who has operational authority and accountability for the “daily” remote operational functions of pipeline systems as defined by the pipeline operator.

“SCADA” Definition - Supervisory Control and Data Acquisition System (SCADA) means a computer based system or systems used by Controllers in the Control Room that collects and displays information about pipeline facilities and has the ability to send commands back to the pipeline facilities.

General Requirements –

(a) **Applicability.** Control room management rule applies to any controller working in a control room who monitors all or part of a pipeline facility through a SCADA system.

(b) **General.** Each operator of a pipeline facility with at least one controller and control room must have and follow written control room management procedures that implement the requirements of this section, except that an operator whose pipeline operations are limited to the following need only have and follow procedures that implement paragraphs (d) [fatigue], (i) [validation], and (j) [deviations] of this section:

(1) distribution with less than 250,000 services;

(2) transmission without a compressor station. The procedures must be integrated, as appropriate, with operating and emergency plans required by 192.605 and 192.615. Operators must develop the plan in 18 months and implement the procedures no later than 36 months after issuance of a final rule.

(c) **Roles and responsibilities.** Each operator must define the roles and responsibilities of a controller to provide a prompt and appropriate response during normal, abnormal, and emergency operating conditions. Each operator must define and implement a method of recording a shift change and the hand over of responsibility between controllers.

(d) **Provide adequate information.** Each operator must provide each controller with the information, tools, processes and procedures necessary for the controller to carry out the roles and responsibilities defined by the operator. Each operator must:

- (1) SCADA - Implement sections 1, 4, 8, and 9 of API RP1165, (incorporated by reference, see § 192.7), wherever a SCADA system is replaced or expanded by (*date of regulation*) unless the operator can demonstrate that provisions of sections 1, 4, 8, 9 of API RP1165 are not practical to implement in the SCADA system used.
- (2) Verification - Conduct a **point to point verification** between SCADA displays and related field equipment when field equipment is added or removed and when other changes that affects pipeline safety are made to field equipment or SCADA displays.
- (3) Backup Control - Test and verify an internal communication plan to provide for adequate means for manual operation of the pipeline safely at least once each calendar year but at intervals not to exceed 15 months.
- (4) Backup Control – Test any backup SCADA system at least once each calendar year but at intervals not to exceed 15 months.
- (5) Other provisions – Establish procedures for when a different controller assumes responsibility, including the content of information to be exchanged.

(e) **Fatigue Management.** Each operator that utilizes continuous shift operations must implement methods to prevent controller fatigue that could inhibit a controller's ability to carry out the roles and responsibilities defined by the operator. To protect against the onset of fatigue, each operator must:

- (1) Establish shift lengths and schedule rotations that provide controllers off duty time sufficient to achieve eight hours of continuous sleep;
- (2) Educate a controller and his supervisor in fatigue mitigation strategies and how off duty activities contribute to fatigue;
- (3) Train a controller and his supervisor to recognize and mitigate the effects of fatigue;
- (4) Establish a maximum limit on controller hours of service, which may include an exception during an emergency with appropriate management approval. An operator must specify emergency situations for which a deviation from the hours of service maximum limit is permitted.

(f) **Alarm Management.** Each operator using a SCADA system must have a written alarm management plan. An operator's plan must include provisions to:

- (1) Review SCADA alarm operations to:
  - (i) identify points impacting safety that have been taken off scan in the SCADA host or that have had forced or manual values for extended periods on a monthly basis, and
  - (ii) verify the correct set point values and descriptions on critical safety alarm set points each calendar year, but at intervals not to exceed 15 months.

- (2) Monitor the content and volume of activity being directed to each controller to assure controllers have sufficient time to analyze and react to incoming alarms.
- (3) Monitor and if necessary, update the operator's alarm management plan each calendar year not to exceed 15 months to determine the effectiveness of the plan. This review shall include alarms and alarm indications of emergency conditions as included in the alarm management plan.
- (4) Address all deficiencies identified in the annual alarm management plan review.

**(g) Change Management.** Each operator must establish communications between control room representatives, management, and field personnel when planning and implementing physical changes to pipeline equipment or configuration. Field personnel must be required to notify the controller when emergency conditions exist and when making field changes that affect control room operations.

- (1) An operator shall seek control room or control room management participation prior to the implementation of significant pipeline hydraulic or configuration changes.
- (2) An operator must document each of these occurrences and keep records for a minimum of five years.

**(h) Operating Experience.**

- (1) Each operator must review control room operations events that must be reported as an incident pursuant to 49 CFR part 191 to determine and 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) Each operator must include lessons learned from the operators experience into their training program, whether the training programs are simulator or non-simulator based.

**(i) Training.** Each operator must establish a 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 must train each controller to carry out the roles and responsibilities defined by the operator. In addition, the training program must include the following elements: Each operator must establish a 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 must train 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 or noncomputerized (tabletop) method to train controllers to recognize abnormal operating conditions.
- (3) Training controllers on their responsibilities for communication under the operator's emergency response procedures.
- (4) Training that is sufficient to obtain a working knowledge of the pipeline system, especially during the development of abnormal operating conditions.
- (5) For pipeline operating setups that are periodically, but infrequently used, provide an opportunity to review procedures in advance of application.

(j) **Validation.** Upon request, operators must submit their completed programs to PHMSA or, in the case of an intrastate pipeline facility regulated by a State, to the appropriate State agency.

(k) **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 of decisions and analyses to support any deviation from the procedures required by this section. Upon request, an operator must report any such deviation to PHMSA, or in the case of an intrastate pipelines facility regulated by a State, to the appropriate State agency.

#### OTHER PLANS:

Amend Section 192.605 "Procedural Manual for Operations, Maintenance and Emergencies", by adding paragraph (b)(12) to read as follows:

(b)(12) Implementing the applicable control room management procedures required by 192.631.

Amend Section 192.615 "Emergency Plans", by adding paragraph (a)(11) to read as follows:

(a)(11) Actions required to be taken by controller during an emergency in accordance with 192.631.

Incorporate by reference into 192.7, API-1165.