

PHMSA Proposes Regulations to Require Pipeline Operators to Improve Control Room Management

On September 12, the Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) proposed new regulations designed to enhance safety by requiring operators of pipeline and LNG facilities to adopt and implement new control room management procedures. Comments on the notice of proposed rulemaking are due by November 12, 2008.

BACKGROUND

PHMSA has long recognized the importance of human interactions to pipeline integrity, in particular, the role of controllers in preventing and reducing risk to pipeline safety. In 2006, Congress enacted the Pipeline Inspection, Protection, Enforcement, and Safety Act (PIPES Act), directing PHMSA to issue regulations requiring each operator of a gas or hazardous liquid pipeline to develop, implement, and submit management plans designed to reduce risks associated with human factors in each pipeline control room. The PIPES Act also requires PHMSA to issue standards to implement the National Transportation Safety Board's (NTSB) recommendations regarding hazardous pipeline operators' supervisory control and data acquisition (SCADA) systems. The proposed rule responds to the PIPES Act mandates.

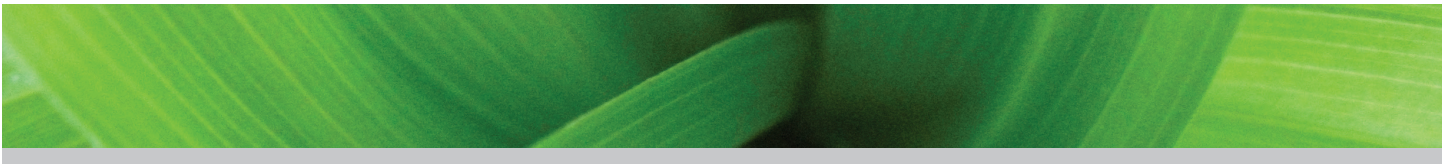
Operators Must Incorporate Control Room Management Elements Into Existing Required Plans and Procedures

The proposed regulations apply to operators of hazardous liquid pipelines, gas pipelines (including gas distribution systems), and LNG facilities that have at least one control room. These operators must incorporate written control room management procedures into their existing operations and maintenance manuals, operator qualification (OQ) programs, and emergency plans. The proposed performance-based regulations describe necessary elements and outcomes without prescribing how operators must incorporate each element of the procedures into their existing programs. The proposed rule requires that the following elements be included in each operator's existing written plans:

- *Roles and Responsibilities.* Operators would be required to clearly define and document the roles and responsibilities of controllers to ensure prompt and appropriate response to abnormal operating conditions and emergencies.
- *SCADA.* Pipeline operators with SCADA systems would be required to follow American Petroleum Institute Recommended Practice 1165 (addressing SCADA displays) or demonstrate that it is inapplicable or impracticable. SCADA systems must have a backup communication system, or alternatively, operators must have adequate means to operate manually or provisions to shut down the affected portion of the pipeline safely. Existing SCADA system operators must conduct an initial point-to-point baseline verification for each SCADA system to validate and document that field equipment configurations agree with computer displays.

Completion of baseline verifications depends on the size of an operator's pipeline system, and PHMSA requests comments on the appropriateness of the proposed timeframes and alternative approaches to ensuring baseline verification of SCADA systems.

- *Shift Change and Information Sharing.* Operators would be required to develop processes to ensure controllers receive the timely and necessary information required for them to fulfill their responsibilities at all times. This includes providing for an overlap of controller shifts sufficient to ensure the necessary exchange of information between shifts, and defining the minimum information that must be communicated between controllers. In addition, operators must identify in their procedures the types of pipeline system information that field personnel must convey to the control room.
- *Fatigue Management.* Operators must implement methods to prevent controller fatigue that could inhibit the controller's ability to carry out defined roles and responsibilities. Methods must include training controllers and supervisors in fatigue recognition and management strategies to mitigate effects of fatigue, including the establishment of appropriate shift lengths and schedule rotations.
- *Alarm Management.* The proposed rule would require two levels of alarm management review. At least weekly, operators must review pipeline operations and the alarms and events that have been received. On an annual basis, operators must undertake a more detailed review of alarm configuration and management to consider the number of alarms, potential systemic issues related to field equipment or the SCADA system, potential systemic issues resulting in the excessive or unusual alarm, unnecessary alarms, changes in controller performance in response to alarms, and set-point values.
- *Change Management.* Operators would be required to establish thorough and frequent communications between controllers, management, and field personnel when planning and implementing physical changes to pipeline equipment and configurations.
- *Learning from Operating Experience.* Operators would be required to review all reportable accidents and incidents on a routine basis to identify and correct deficiencies related to controller fatigue, field equipment, procedures, SCADA system configuration, SCADA performance, and communications. Operators also would be required to review non-reportable events ("close calls") to identify and address those that could be significant if left unaddressed or coupled with other events.
- *Training.* Operators would be required to provide controllers training necessary to completely understand the pipeline and control systems they operate. The proposed rule requires operators to include certain content in controller training programs and includes a number of minimum elements that overlap and supplement existing OQ programs to address controller training.
- *Qualifications.* Operators would be required to adopt additional qualification measures to measure or verify a controller's performance, including prompt detection of, and appropriate response to, abnormal and emergency conditions that are likely to occur. The proposed rule would require an annual certification review for controllers and operators would be required to provide ongoing controller performance metrics and



evaluation between annual qualifications reviews to help detect any gradual degradation in performance. An operator would be required to specify the reasons for revoking a controller's qualifications and have procedures for restoring these qualifications.

- *Validation.* A senior executive officer would be required to sign a validation each calendar year that confirms certain aspects of the operator's controller training, qualification, and compliance with regulatory requirements.
- *Compliance and Deviations.* Operators would be required to maintain records that demonstrate compliance with the regulation and document any deviations from their control room management procedures. If requested by PHMSA or the appropriate state safety authority, an operator would be required to report deviations.

PROPOSED IMPLEMENTATION

PHMSA proposes the following implementation schedule for the new requirements:

- Operators of hazardous liquid and gas transmission pipelines that are controlled or monitored remotely and operators of LNG plants with controllers must develop procedures within one year of the final rule's effective date and implement the procedures completely within two years of the final rule's effective date.
- For control rooms that control equipment within a single site, pipeline operators must develop procedures within two years of the final rule's effective date and implement those procedures within an additional six months.
- Gas distribution system operators must develop and implement procedures within two years after the effective date of the final rule.
- Operators of systems with control rooms placed in service or significantly modified more than 12 months after the effective date of the final rule must develop and implement procedures as part of the installation of the new system.

IMPLICATIONS OF PROPOSED REGULATIONS

PHMSA explains in its proposed rule that examining and addressing the role of people in operating and maintaining pipelines is the logical step following implementation of integrity management programs to ensure pipeline safety. The proposed rule represents the beginning of PHMSA's implementation of a program that recognizes the importance of human interactions and the opportunities for preventing risk to pipeline systems through a "Prevention Through People" program.

FOR ADDITIONAL INFORMATION

Van Ness Feldman regularly counsels clients on issues related to pipeline construction, permitting, safety, and operation. Specifically, the firm has in-depth experience counseling clients on compliance with the Pipeline Safety Act and regulations. If you are interested in additional information regarding PHMSA's regulations, or any other energy-related federal activity, please contact Susan Olenchuk in our Washington D.C. Office at (202) 298-1800, or Pam Anderson in our Seattle office at (206) 623-9372, or any member of the firm's Natural Gas practice group.

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