Briefing Paper **November 20, 2008**

Control Room Management

Advisory Committee Action: ***VOTE on NPRM and cost-benefit***

The Pipeline and Hazardous Materials Safety Administration (PHMSA) proposes to add requirements to Parts 192 and 195 addressing control room management.

The Pipeline Safety Improvement Act of 2002 directed PHMSA to conduct a pilot study of certification of personnel who operate pipelines using supervisory control and data acquisition (SCADA) systems. PHMSA established a Controller Certification Evaluation Team (CCERT) that studied this issue and concluded that certification of pipeline controllers was impractical due to the wide disparity among pipeline systems. The CCERT identified a number of areas in which management of control room activities could be enhanced to improve pipeline safety.

NTSB recommended in 1989 that DOT conduct a coordinated research study of fatigue and related issues as they affect transportation and review and update regulations on hours of service for all transportation modes. NTSB included the issue of operator fatigue on its "most wanted list" when the list was first issued in 1990. In 1999, NTSB specifically recommended to the Research and Special Projects Administration (now PHMSA) that hours of service regulations be issued for pipelines that set limits on hours of service, provide predictable work and rest schedules, and consider circadian rhythms and human sleep and rest requirements.

In 2005, NTSB conducted a SCADA Safety Study that identified the potential need for improvement in five areas: display graphics, alarm management, controller training, and controller fatigue. As a result of its study, NTSB recommended that PHMSA 1) require operators of hazardous liquid pipelines to follow API RP-1165 for graphic display screens, 2) require pipeline companies to have a policy for the review/audit of alarms, and 3) require controller training to include simulator or non-computerized simulations for controller recognition of abnormal operating conditions, in particular, leak events. The study also resulted in additional recommendations that are being addressed as part of other efforts.

The Pipeline Inspection, Protection, Enforcement and Safety (PIPES) Act of 2006 required that PHMSA issue regulations requiring each operator of a gas or hazardous liquid pipeline to develop and implement a human factors management plan designed to reduce risks associated with human factors, including fatigue (PIPES Section 12). PIPES also required that PHMSA issue regulations that implement the three NTSB regulations that resulted from the SCADA Safety Study (PIPES Section 19).

The Notice of Proposed Rule Making received many comments. A summary of those comments with the most viable options are tabulated as an attachment to this briefing paper. Also attached is a worksheet showing industry's suggest regulatory language and PHMSA's most viable options sample language for both 192 and 195 regulations. The sample language responds to the PIPES mandates and addresses the related NTSB recommendations. It addresses the requirement for all pipeline operators to develop and implement a human factors management plan that includes a limit on hours of service. PHMSA (or States for intrastate pipelines under their jurisdiction) will review these plans as part of the inspection process. The sample language also includes improvement areas identified by the NTSB in the SCADA Safety Study and addresses recommendations for displays, alarm management, and controller training.