

Team Resource Management for Control Room Teams

The PHMSA Control Room Management (CRM) regulations were strengthened in a final rule issued on January 23, 2017, establishing a clear expectation that control room team training must extend beyond Controllers. Under 49 CFR 192.631(h)(6) and 49 CFR 195.446(h)(6), operators are required to include other personnel who are expected to work operationally with Controllers during normal, abnormal, and emergency conditions.

This requirement reflects a critical reality: safe and effective pipeline operations depend on coordinated performance across multiple roles, not just the Controller. During abnormal and emergency situations, breakdowns in communication, unclear roles, or lack of shared understanding can directly impact response effectiveness and increase operational risk.

Operators are responsible for defining the scope and content of this training and identifying the personnel required to participate. The objective is to ensure effective coordination, clear communication, and sound decision-making across all roles that support control room operations.

Team Resource Management (TRM) training strengthens coordination across the organization, supports compliance with PHMSA expectations, and, most importantly, enhances the ability of the control room team to manage abnormal and emergency conditions safely and effectively.

What is Team Resource Management Training?

TRM is a structured training program designed to strengthen the non-technical skills that are essential to safe, reliable, and coordinated pipeline operations. While technical expertise is critical, it is the effectiveness of the team, how individuals communicate, coordinate, and make decisions together, that ultimately determines performance in both routine and high-consequence situations.

TRM focuses on developing the interpersonal, cognitive, and communication skills required for personnel who work in or interact with the control room. It prepares individuals not just to perform their roles, but to operate as part of a cohesive, high-functioning team.

Key elements of TRM training include:

- Strengthening the ability to function as effective team members, moving beyond individual technical proficiency to coordinated team performance
- Practicing behaviors that enhance collaboration, situation awareness, and shared understanding across roles
- Building the skills to operate effectively as both team leaders and team followers in a dynamic, real-time environment
- Preparing personnel to perform as an integrated team during all operating conditions, including normal operations, abnormal situations, and emergency response



TRM ensures that when conditions escalate, the control room team operates with clarity, coordination, and confidence, reducing the likelihood of error and improving the effectiveness of the response.

Pipeline Performance Group, LLC (PPG)

PPG's TRM training is designed to build the skills and behaviors that directly impact control room performance, safety, and compliance. Upon completion of this course, participants will be able to:

1. **Explain** the importance of a strong safety culture within control room operations.
2. **Describe** key regulatory and industry guidance relevant to Team Resource Management, including the NTSB recommendation, PHMSA advisory bulletin, PHMSA final rule, and API Recommended Practice 1168.
3. **Apply** principles of effective teamwork specific to control room personnel and those who interact with them.
4. **Recognize and demonstrate** non-technical skills that influence individual and team performance, such as communication, decision-making, and situational awareness.
5. **Engage in** practical teamwork exercises and discussions to strengthen performance during normal, abnormal, and emergency operations.

Non-Technical Skills for Control Room Teams

PPG delivers TRM training through a blended approach. The program begins with a self-paced, online course that establishes foundational concepts, followed by a virtual, instructor-led session focused on interactive exercises, discussion, and real-world application. An alternative delivery option is our in-person, classroom-based training.

Core Topic Areas: Training is centered on the non-technical skills that directly influence control room performance, including: Communication, including 3-Way Communication and Assertiveness, Situation Awareness, Problem Solving and Decision-Making, Teamwork, Leadership, and Professionalism.

Industry Case Studies: Participants examine real-world incidents to understand how human factors and team dynamics influence operational outcomes. Case studies reinforce key lessons related to communication breakdowns, situation awareness, decision-making under pressure, and team coordination.

Interactive Exercises: Instructor-led sessions emphasize hands-on application through scenario-based exercises that simulate real control room conditions.

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