PHMSA CRM TEAM TRAINING

APRIL 6, 2018
NORTHEAST GAS ASSOCIATION
SARATOGA SPRINGS NY

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WHY ARE WE HERE?

• The Code of Federal Regulations (CFR) defines the minimum safety standards regarding the operation of regulated pipeline faculties.

• The relevant code sections are 49 CFR §192.631 (gas) and 49 CFR §195.446 (liquid)

• There are minor differences that we will not cover here.
WHAT IS REGULATED?

The US DOT Pipeline and Hazardous Materials Safety Administration (PHMSA) does NOT regulate production operations – only certain types of gathering, transmission, and distribution pipelines and appurtenances to regulated pipelines.

Gathering begins when production ends.

PHMSA does NOT regulate gas processing or refining.
### SUMMARY OF CRM REGULATIONS

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<th>CRM Paragraph</th>
<th>Synopsis</th>
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<td>(b) Roles &amp; Responsibilities</td>
<td>(1) Normal Operations</td>
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| (d) Fatigue Mitigation   | (1) Shift Lengths  
                          | (2) Mitigation Education  
                          | (3) Recognition Education  
                          | (4) Max Hours of Service |
| (e) Alarm Management     | (1) Alarm Review Process  
                          | (2) Monthly Alarm Review  
                          | (3) Safety Related Alarms  
                          | (4) Annual Plan Review  
                          | (5) Annual Workload Studies  
<pre><code>                      | (6) Address deficiencies |
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<thead>
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<td>(f) Change Management</td>
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<td>(3) CRM role in system planning</td>
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<td>(g) Operating Experience (Lessons</td>
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<td>Learned)</td>
<td>(2) Include Lessons Learned in CRM Training</td>
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| (h) Training  | (1) AOC response  
|               | (2) Training for AOCs  
|               | (3) Emergency Communications  
|               | (4) System Knowledge – especially W.R.T. AOCs  
|               | (5) Infrequent Configurations  
|               | **(6) Team Training**  |
| (i) Compliance Validation | Provide copies of procedures to regulatory agency |
### SUMMARY OF CRM REGULATIONS

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<td>(j) Compliance and Deviations</td>
<td>(1) Records that demonstrate compliance</td>
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<td>(2) Records of deviations (deviations must be necessary for safe operation)</td>
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WHY ARE SOME SECTIONS EMPHASIZED?

- Rules changed!!
- Why did the rules change?
- Marshall MI (Enbridge, July 25, 2010)
- Almost 1 million gallons of crude spilled
- Control Room did not recognize a leak
- Nobody injured, nobody killed
- $1 Billion and counting for cleanup
WHY DID THE RULES CHANGE?

• NTSB Investigated

• Two recommendations sent July 25, 2012

• P-12-7: Develop requirements for team training of control center staff involved in pipeline operations similar to those used in other transportation modes.

• P-12-8: Extend operator qualification requirements in Title 49 Code of Federal Regulations Part 195 Subpart G to all hazardous liquid and gas transmission control center staff involved in pipeline operational decisions.
WHEN DID THE RULES CHANGE?

• Administrative Procedures Act

• Notice of Proposed Rulemaking July 10, 2015

• Public comment period closed September 8, 2015

• Final rule published January 23, 2017

• Operators should have complied with the team training requirements no later than January 23, 2018

• Docket No. PHMSA-2013-0163 (go to www.regulations.gov)
WHAT CHANGED?

• (b)(5) was added: Operators must define “The roles, responsibilities and qualifications of others with the authority to direct or supersede the specific technical actions of a controller.”

• (h)(6) was added: Operators must provide “Control room team training and exercises that include both controllers and other individuals, defined by the operator, who would reasonably be expected to operationally collaborate with controllers (control room personnel) during normal, abnormal or emergency situations. Operators must comply with the team training requirements under this paragraph by no later than January 23, 2018.”
WHAT PREVIOUS GUIDANCE HAS PHMSA PROVIDED?

PHMSA historically invested approximately 2.5 hours addressing control room roles and responsibilities training as part of PHMSA’s 40-hour Control Room Management Program Inspection Training provided to PHMSA and state pipeline safety program inspectors.

For purposes of this presentation, that training may be summarized as the authority of a controller to make decisions during normal, abnormal and emergency operating conditions.

Apparently PHMSA now wants assurance that OTHER employees that may communicate with controllers exercising their authority have had THEIR roles and responsibilities defined and have received appropriate training along with the controllers.
“[I]t remains the responsibility of the operator to define the training and qualification requirements for personnel performing covered tasks on their pipeline facility. This includes the requirement for operators to define personnel involved in team training exercises.”
WHAT GUIDANCE DID PHMSA PROVIDE IN THE PREAMBLE?

• “[I]f field operations employees and supporting engineers who provide information or general advice to a controller are considered [to be] ‘directing’ a controller on a specific action . . ., then these individuals are directing and superseding the controller's authority.”
WHAT GUIDANCE DID PHMSA PROVIDE IN THE PREAMBLE?

• “[U]nderstanding of the requirements of control room management and appropriate training is essential for other individuals that interact with controllers, particularly those that may affect the ability of a controller to safely monitor and control the pipeline during normal, abnormal, and emergency situations.”

• This expressly includes individuals such as technical advisors, engineers, leak detection analysts, and on-call support.
WHAT GUIDANCE DID PHMSA PROVIDE IN THE PREAMBLE?

• “[A]n operator **must** define the roles, responsibilities and qualifications of others with the authority to direct or supersede the specific technical actions of a controller.”

• “It remains the responsibility of the operator to define the training and qualification requirements for personnel performing covered tasks on its pipeline facility. It is up to the operator as to how it documents the processes/procedures and records associated with this requirement.”
WHAT GUIDANCE DID PHMSA PROVIDE IN THE PREAMBLE?

• “[I]t is up to the operator to define who exactly is included and with ultimate determination of adequacy up to the inspector.”

• “As to the comment that additional clarification is necessary for control room team training because it may involve numerous ‘soft skills,’ PHMSA will provide guidance in a separate document.” (PHMSA has yet to address soft skills!)
WHAT GUIDANCE DID PHMSA PROVIDE IN THE PREAMBLE?

• “[I]t is essential for each pipeline operator to have and effectively implement his/her own unique OQ program. Operator qualification programs must be specific to a pipeline operator and the covered tasks performed on the operator's facilities, taking into consideration the operator's methods of construction, operation, maintenance, and emergency response along with its unique tasks, equipment, and technologies utilized.”
WHAT IS A COVERED TASK? (OQ)

• A covered task is an activity, defined by the operator that meets the 4-part test:

  (1) Is performed on a pipeline facility;
  (2) Is an operations or maintenance task;
  (3) Is performed as a requirement of Part 195 or Part 192; and
  (4) Affects the operation or integrity of the pipeline.
WHAT ABOUT CONTROLLERS?

• Pipeline controllers are considered to be performing a covered task when they are serving as controllers.

• Individuals that can direct pipeline controllers or supersede the authority of a pipeline controller must be “qualified” to do so.

• If there if no SCADA System, then no one can meet the definition of a Controller.

• If there is a SCADA System, but no one meets the definition of a Controller, then there can not be a Control Room.

• Operator Qualification applies independently even if there is no control room.
WHAT ABOUT FAQS?

• The original 99 Frequently Asked Questions (FAQs) were published June 11, 2011 after the original CRM rule.

• The original FAQs are not covered in this presentation.

• On January 16, 2018, an additional 13 FAQs were published to cover the new requirement.

• The following slides contain the additional FAQs.
What are the Most Recent FAQs?

B.06 Who are the individuals described as "others with the authority to direct or supersede the specific technical actions of a controller"?

Individuals described as "others with the authority to direct or supersede the specific technical actions of a controller" are individuals that are qualified and authorized to direct or supersede the technical actions of a controller. Operators may have, but are not obligated to have, individuals with this authority.
B.07 What are the responsibilities of individuals with the authority to direct or supersede the specific technical actions of a controller?

The individuals who invoke the authority to direct or supersede the specific technical actions of a controller are in control of the pipeline and are responsible for all operational actions taken or directed to the controller to take (or not take.) Procedures should account for the occasion when such authority is invoked and situations when the controller disagrees with the order or decision of such an individual.
**WHAT ARE THE MOST RECENT FAQs?**

**B.08 What qualifications are required for an individual to be authorized to direct or supersede the specific technical actions of a controller?**

Any individual that directs or supersedes the specific technical actions of a controller is in control of the pipeline. Therefore, such individuals must be qualified in accordance with Part 192, Subpart N-Qualification of Pipeline Personnel or Part 195, Subpart G-Qualification of Pipeline Personnel, as applicable (i.e., OQ requirements). Such individuals would not necessarily need to be as broadly qualified as a controller. However, such individuals must be qualified to dictate operational decisions commensurate with their authority and responsibilities, in accordance with §§ 192.631(h) or 195.446(h). For operators with multiple pipelines or systems, an individual's qualifications must specify which system, console, control room, and/or portions that are under their authority.
B.09 When must operators define the roles, responsibilities and qualifications of others with the authority to direct or supersede the specific technical actions of a controller (i.e., when is the compliance deadline)?

After March 24, 2017, if the operator chooses to have individuals authorized to direct or supersede the specific technical actions of a controller; then roles, responsibilities and qualification must be established by the time of implementation.

My advice: Clearly state the only qualified controllers will be allowed to identify and perform the “specific technical actions of the controller.”
B.10 Must an operator establish roles, responsibilities and qualifications of others with the authority to direct or supersede the specific technical actions of a controller if the operator does not intend to allow such individuals?

No, but the operator should establish a written policy disallowing such individuals.

(see previous slide)
G.04 Does "[i]nclude lessons learned from the operator's experience in the training program required by this section" apply to accidents/incidents/events in which an authorized individual directed or superseded the specific technical actions of the controller?

Yes. This requirement applies to all accidents, incidents, events, and circumstances; whether or not the controller's specific technical actions were directed or superseded by others.
H.05  Who is required to participate in control room team training and exercises?

Individuals who usually provide key information or decision-making input to controllers or otherwise influence operational control decisions during normal, abnormal, or emergency situations are required to participate in control room team training and exercises. This includes individuals with authority to direct or supersede the specific technical actions of a controller and individuals that interact with controllers remotely or face-to-face inside the control room. Operators should review ADB 2014-02 and NTSB report PAR-12/01 when identifying individuals to include in control room team training.
H.06 What skills should be included in control room team training and exercises?

Training and exercises must provide individuals, and the team as a whole, with the skills necessary to address conditions that could occur in any operational mode (normal, abnormal, or emergency conditions). Important skills include, but are not limited to, teamwork, communication, situational awareness, decision-making, leadership, professionalism, understanding roles and responsibilities (including how company leadership and executive management are involved in operational decisions), recognition and appropriate responses to emergencies, resolution of data discrepancies, error diagnostics, error management, relevant procedures, and problem solving.

The training should specifically address scenarios when roles change, such as when an individual with authority to direct or supersede the specific technical actions of a controller assumes operational control of the pipeline, if the operator has designated such individuals.
H.07 How should the training and exercises be conducted?

Operators have flexibility regarding the means used to deliver the training. However, the effectiveness of training should be evaluated, documented and considered when preparing future training and exercises. Operators may include computer-based (CBT) training, but since the focus is on personnel interaction and teamwork, CBT alone would not be considered sufficient. Classroom training is appropriate, but classroom training alone, without an exercise, would not be considered sufficient. On-the-job (OJT) training alone is not adequate to fulfill team training expectations.

Exercises should present realistic scenarios and situations sufficiently complex to challenge the team's collective decision-making skills. Exercises should include lessons learned from the operator's actual events, and should consider applicable events that have occurred at other oil and gas industry facilities.

Unless amended to include team training requirements, emergency procedure training or Oil Pollution Act drills alone are likely not sufficient to account for adequate team training and exercises.
H.08 When must team training and exercises be completed and how frequently must subsequent team training exercises be conducted?

Operators must establish its team training program, including the objectives and content of both the training and exercises, no later than **January 23, 2018**. Those individuals identified as of January 23, 2018 are expected to have been trained no later than **January 23, 2019**. The team training program and associated written procedures must address the timely training of new or changing staff that assume roles requiring team training after January 23, 2018, due to circumstances such as newly hired employees, new or changing job assignments, or other reasons. The operator's written procedures should state the frequency of recurrence for full team training.

Operators are reminded that interim team activities such as team discussions of event scenarios, post-operational team critiques of recent abnormal operating conditions or incidents, team what-if analysis exercises, etc. that occur between full team training intervals can enhance pipeline safety. A change in training content would not necessarily require previously trained individuals to be re-trained on the changes until the next recurrence of full team training.
WHAT ARE THE MOST RECENT FAQs?

H.09 Does every team training exercise have to include a controller?

At least one fully qualified controller must participate in all exercises and scenario practice. However, traditional classroom training on team concepts and soft skills could be accomplished without specific controller participation.
WHAT ARE THE MOST RECENT FAQs?

J.05  What documentation is required for those authorized to direct or supersede the specific technical actions of a controller?

The operator must document and retain records, noted in § §192.631(b)(5) or 195.446(b)(5), for those who are authorized (if any) to direct or supersede the specific technical actions of a controller, including a record of acceptable qualification for each authorized person and the timeframe for which the qualifications are valid.

The operator's process should yield a dated list of all (if any) individuals with this authority, so that every controller unambiguously knows which individuals are authorized to direct or supersede the controller's actions. Written procedures should include or reference documentation for the scope (e.g., system, pipeline, control room, console, desk, entire pipeline, all consoles, etc.) and mode (e.g., normal, abnormal, emergency, all modes, etc.) of operational control authorized for each such individual.
WHAT ARE THE MOST RECENT FAQs?

J.06  What documentation is required for team training and exercises?

The operator must document and retain records of training and exercises that demonstrate compliance with the requirements of §§ 192.631(h)(6) and 195.446(h)(6). This includes documentation such as attendance list, course title, date, duration, content of training including, effectiveness evaluation results, and any exercise critiques and feedback from attendees. Operators may incorporate team training into their general training program to facilitate training management, including documentation aspects of team training.
WHAT IS AVAILABLE ON THE WEB ABOUT CRM?

• PHMSA CRM Home Page:

• 2012 Long-Form Inspection Guidance (be sure to use Rev 3):

• PHMSA CRM Frequently Asked Questions (FAQs):
  http://primis.phmsa.dot.gov/crm/faqs.htm
WHAT IS AVAILABLE ON THE WEB ABOUT CRM?


• Part 192 CRM Inspection Protocol: PHMSA GT Control Room Management (IA Equivalent)
  www.phmsa.dot.gov/pipeline/library/forms (scroll down & click link)

• Part 195 CRM Inspection Protocol: PHMSA HL Control Room Management (IA Equivalent)
  www.phmsa.dot.gov/pipeline/library/forms (scroll down & click link)
WHAT ABOUT OTHER USEFUL WEB SITES?

• Freedom of Information Act Electronic reading Room: www.phmsa.dot.gov/foia/e-reading-room (scroll down to III. Staff Manuals and Instructions and click on Enforcement Guidance)

• PHMSA Written Interpretations: www.phmsa.dot.gov/pipeline/regs/interps

• PHMSA Technical Resources: http://primis.phmsa.dot.gov/ptr.htm (a potpourri of useful information)
WHAT ABOUT OTHER USEFUL WEB SITES?

- **www.regulations.gov** – can be used to find docket information or can be used to search for rulemakings (advanced search is recommended). Excellent for rulemakings.

- **www.49cfrpipeline.com** for 49 CFR Parts 190 – 199: searchable and hyperlinked!! (FREE!!)

- **www.federalregister.gov/documents/search#** Federal Register – use PHMSA as a search term and select newest for the latest official notices.
QUESTIONS?

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Thank YOU!!