



January 11, 2022

Mr. Dustin Hubbard
Director, Western Region
Pipeline and Hazardous Materials Safety Administration
12300 W. Dakota Ave., Suite 110
Lakewood, CO 80228

Re: NOTICE OF PROBABLE VIOLATION AND PROPOSED COMPLIANCE ORDER, CPF 5-2022-050-NOPV

Dear Mr. Hubbard:

MWP appreciates the professionalism and thoroughness of the PHMSA staff during the Control Room Management audit conducted February 28 through March 4, 2022. MWP welcomes input from the PHMSA team and recognizes the listed concerns. MWP views this audit process as an opportunity to further improve its Control Room Management program in harmony with our core safety values.

MountainWest Pipeline (MWP), OPID No. 12874, does not contest the allegations in CPF 5-2022-050-NOPV, dated December 19, 2022 and intends to take the actions in the compliance order as detailed below.

The following table has the numbered issue identified during the inspection corresponding to the document that was modified. Each of these documents is attached with this correspondence and are confidential as they contain details of a TSA secure system.

NOPV	MWP Procedure
1	CRM Plan Style Guide
2	CRM Plan Section 5.6.2.b.ii
3	CRM Plan

NOPV Item:

1. § 192.631 Control room management.

(a)...

(c) *Provide adequate information.* Each operator must provide its controllers with the information, tools, processes and procedures necessary for the controllers to carry out the roles and responsibilities the operator has defined by performing each of the following:

(1) Implement sections 1, 4, 8, 9, 11.1, and 11.3 of API RP 1165 (incorporated by reference, see § 192.7) whenever a SCADA system is added, expanded or replaced, unless the operator demonstrates that certain provisions of sections 1, 4, 8, 9, 11.1, and 11.3 of API RP 1165 are not practical for the SCADA system used;

NOPV:

MWP failed to implement the required sections of API RP 1165 set forth in § 192.631(c)(1) and/or failed to demonstrate that certain provisions of those sections are not practical for the SCADA

system used. During the inspection, MWP was unable to present sufficient records to establish the SCADA system was compliant with API RP 1165.¹ Although MWP presented records of an evaluation that was conducted in 2011-2012, those records contained raw data with contemporaneous notes made by the reviewer. The evaluation records did not seem to follow a methodology and no conclusion regarding compliance with API RP 1165 was made.

Further, during the inspection, PHMSA reviewed screenshots of MWP's SCADA screens and toured the control room. The SCADA screens are very busy, have no discernable eye scan pattern and use more colors than recommended by API RP 1165. For example, Section 4 *Human Factors Engineering Considerations in Display Design* states, in part, "Displays should be designed to provide optimum transfer of information to the user. Information should be presented simply and consistently, in a well-organized manner, and in expected locations. Generally speaking, displays should have an orderly and clutter-free appearance, a simple way to navigate through the system, and obvious indications of interrelationships." API RP 1165 Section 8.2.1 *Number of Colors* states that "The number of colors used should be kept to the minimum needed to provide sufficient information. Research has indicated that the number of colors used on SCADA displays should not exceed eleven. Exceptions can be made for special applications (i.e., batch tracking screens, commodity labeling, etc.). The benefits of color are best realized if color is used discriminately. Excessive use can hinder effective control room operation. The same qualities which make color useful can result in unintended confusion or distraction if overused or inconsistently applied. As colors are used more frequently and as the number of different colors increases, the attention-getting value of each color diminishes."

Proposed Compliance Order:

In regard to Item 1 of the Notice pertaining to Mountain West's failure to implement the required sections of API RP 1165, Mountain West must conduct an evaluation of its SCADA system for compliance with the requisite sections of API RP 1165 within 30 days of receipt of the Final Order. Mountain West must present to PHMSA a plan for correcting any deficiencies identified through its evaluation of the SCADA system within 90 days of receipt of the Final Order.

Response:

MWP conducted an evaluation of its SCADA system for compliance with the requisite sections of API RP 1165 and identified the following deficiencies:

1. Pertaining to API RP 1165 section 4 Human Factors Consideration in Display Designs:
 - a. Screens have too much information creating clutter which diminishes the discernable eye pattern and flow of the important pipeline information displayed.
 - b. Screens contain some elements without purpose.
 - c. Font sizes are not consistent
2. Pertaining to API RP 1165 section 6.2 DISPLAY HIERARCHY:
 - a. Displays in the JL 45, JL 46 and JL 47 areas of the system, contain many stations per display making it hard for controllers to quickly locate information.
3. Pertaining to API RP 1165 section 8.2.1 Number of colors (11 max recommended):
 - a. MWP SCADA displays use 23 colors.

Note: MWP will present to PHMSA a plan for correcting these deficiencies within 90 days of the receipt of Final Order.

NOPV Item:

2. § 192.631 Control room management.

(a) General.

(1) This section applies to each operator of a pipeline facility with a controller working in a control room who monitors and controls all or part of a pipeline facility through a SCADA system. Each operator must have and follow written control room management procedures that implement the requirements of this section, ...

NOPV:

MWP failed to follow its written control room management procedures that implement the requirements set forth in §195.446. Specifically, MWP failed to follow its Annual Monitoring procedure listed in the CRM Plan Section 5.6, which discusses the requirements set forth in §195.446(e)(5) to monitor the content and volume of general activity being directed to and required of each controller at least once each calendar year, but at intervals not to exceed 15 months, that will assure controllers have sufficient time to analyze and react to incoming alarms. During the inspection, PHMSA learned that in 2020, MWP contracted with Circadian to conduct its annual review of controller activity. Circadian conducted a qualitative review of controller activity based on controller surveys, but failed to review the content and volume of general activity being directed to the controllers to determine if they have sufficient time to analyze and react to incoming alarms. Further, MWP could not present any review records for 2018, 2019, or 2021.

Proposed Compliance Order:

In regard to Item 2 of the Notice pertaining to Mountain West's failure to monitor the content and volume of general activity being directed to and required of each controller, Mountain West must amend its procedure in CRM Plan Section 5.6 to provide detailed instructions for conducting, analyzing and documenting each review required by CRM Plan Section 5.6. Mountain West shall complete and submit to PHMSA the procedure amendment within 30 days of receipt of the Final Order. Mountain West shall conduct and submit to PHMSA forensic reviews according to the amended CRM Plan Section 5.6 for the years 2020 and 2021 within 90 days of receipt of the Final Order.

Response:

CRM Plan Sections 5.6.2.b.ii and 5.6.2.b.iii were updated, adding the following language (procedure included with this transmittal):

5.6.2.b.ii. Company shall evaluate all relevant available information to measure acceptable Controller response to alarms. Each response shall depend on the specific surrounding circumstances.

1. Relevant available information shall include, but not be limited to:
 - a. number of alarms received
 - b. number of phone calls received
 - c. number of control room visitors
 - d. number of Controllers on shift
 - e. interview Controllers to determine workload demands;

5.6.2.b.iii Company shall use the information set forth in 5.6.2.b.ii to identify and review the three days with the highest content and volume of general activity being directed to the controllers on duty, since the last review, to assist in the workload study.

Note: MWP shall conduct and submit to PHMSA forensic reviews according to this amended procedure for the years 2020 and 2021 within 90 days of receipt of the Final Order.

NOPV Item:

3. § 192.631 Control room management.

(a) *General.*

(1) This section applies to each operator of a pipeline facility with a controller working in a control room who monitors and controls all or part of a pipeline facility through a SCADA system. Each operator must have and follow written control room management procedures that implement the requirements of this section, ...

MWP failed to follow its written control room management procedures that implement the requirements set forth in §195.446. Specifically, MWP failed to conduct the Controller Training Program review according to its procedure in CRM Plan Section 8.7, which discusses the requirements set forth in § 195.446(h)(6) regarding controller team training. In 2020 and 2021 MWP conducted a modified version of the Controller Training Program review that deviated from the procedure listed in CRM Plan Section 8.7. Specifically, they failed to record the review in the company DOT IMS as required by CRM Plan Section 8.7.

Response:

MWP assumes PHMSA's reference to 195.446 should be 192.631 and that 195.446(h)(6) should be 192.631(h) which provides for gas controller training.

MWP corrected this deficiency and properly conducted and recorded the review of the controller team training for 2022 in the company DOT IMS. MWP also found record of this review in the company DOT IMS for 2020 and 2021.

If you have any questions or requests pertaining to this matter, please do not hesitate to contact me or Douglas Brunt, Manager Pipeline Safety, douglas.brunt@mwpipe.com. MWP appreciates the opportunity to work with PHMSA to improve Company procedures and pipeline safety processes.

Regards,

Colleen Larkin Bell
President
MWP Pipeline