



July 7, 2021

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

Subject: CPF 5-2021-025-NOA for Control Room Management Inspection

Dear Mr. Hubbard:

This letter is submitted in response to your letter dated June 11, 2021 regarding the inspection of Duke Energy's Control Room Management (CRM) Program conducted by representatives of the Pipeline and Hazardous Materials Safety Administration (PHMSA) during the week of October 19 through October 23, 2020. As a result of the inspection, you identified apparent inadequacies found within Duke Energy's CRM Program. Duke Energy has revised its CRM Program to address the items noted below and provides the attached revised Control Room Management Plan and revised Alarm Management Plan as documentation that these items have been addressed. These items along with Duke Energy's response is as follows:

Item 1

§ 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...

Duke's Control Room Management (CRM) Plan for Natural Gas Pipelines, Rev. Sept. 3, 2020, Fatigue Management CRM 1080, Section 1080.4 - Normal Operations fails to sufficiently address the supervisor position that works a Monday through Friday, 6am – 6pm shift. For example, it fails to note certain fatigue mitigation tactics, including if the supervisor is afforded a two-day break after successive shifts. It also fails to address the schedules of the Gas Control Manager and Director positions. This procedure also fails to adequately address documentation. First, it does not explicitly state that all HOS, scheduled and unscheduled, will be tracked and/or tabulated. Second, it fails to explicitly require that countermeasures be documented during the 3am-6am and 3pm-6pm time periods in Duke's eLogger.

Duke Energy Response:

Hours of Service for supervisor position: The Control Room Management Plan was revised in Section 9.5.3 (page 58) to address the issue identified.

Fatigue Management, fatigue mitigation tactics: The Control Room Management Plan was revised in Section 9.2.1 (pages 55-56) to address the issue identified.

Documentation for hours of service, scheduled and unscheduled, will be tracked and/or tabulated: The Control Room Management Plan was revised in Section 9.3.2 (page 56) to address the issue identified.

Item 2

§ 192.631 – Control room management.

(a) ...

(e) **Alarm management.** Each operator using a SCADA system must have a written alarm management plan to provide for effective controller response to alarms. An operator's plan must include provisions to:

(1) ...

(2) **Identify at least once each calendar month points affecting safety that have been taken off scan in the SCADA host, have had alarms inhibited, generated false alarms, or that have had forced or manual values for periods of time exceeding that required for associated maintenance or operating activities;**

Duke's control room management procedures are inadequate to assure safe operation of a pipeline facility. Specifically, Duke's CRM Plan for Natural Gas Pipelines, Rev. Sept. 3, 2020, Alarm Management Plan CRM 1090, Section 1090.2 – Safety Related Alarms and Review Process, Subsection 1090.2.3 fails to sufficiently describe the process for conducting monthly reviews that identify points affecting safety that have been taken off scan, inhibited alarms, generated false alarms, or that have had forced or manual values for periods of time exceeding that required for associated maintenance or operating activities. The procedure has identified Key Performance Indicators (KPIs) in Tables 14, 15, and 16, that follow API 1167, but the procedure fails to clearly state how the KPIs are incorporated into the review.

Duke Energy Response:

Process for conducting monthly reviews that identify points taken off scan, inhibited alarms, generated false alarms, or forced or manual values for periods of time exceeding O&M activities: The Alarm Management Plan was revised in Section 8 (page 53) and the Control Room Management Plan was revised in Section 10.4 (pages 71-72) to address the issue identified.

Procedure for incorporating KPIs into monthly review: The Control Room Management Plan was revised in Section 10.2.3 (page 63-64) to address the issue identified.

Item 3

§ 192.631 - Control room management.

(a) ...

(e) **Alarm management.** Each operator using a SCADA system must have a written alarm management plan to provide for effective controller response to alarms. An operator's plan must include provisions to:

(1) ...

(4) **Review the alarm management plan required by this paragraph at least once each calendar year, but at intervals not exceeding 15 months, to determine the effectiveness of the plan;**

Duke's control room management procedures are inadequate to assure safe operation of a pipeline facility. Specifically, Duke's alarm management plan fails to include provisions to review the plan at least once each calendar year, but at intervals not exceeding 15 months, to determine the effectiveness of the plan. Further, Section 1090.2 – Safety Related Alarms and Review Process, Subsection 1090.2.4 fails to clearly identify the process for performing this annual review. For example, Table 3 – Responsibility Z fails to identify who is accountable for the review and who approves the outcome of the review before it is deemed effective. It also does not provide any information on how to measure effectiveness. Additionally, Table 3 indicates a

variety of people who participate in the annual review of the program but fails to state exactly who is responsible for what items during the review process. The procedure also fails to identify who has final approval authority or how the review will be documented.

Duke Energy Response:

Review of Alarm Management Plan: The Alarm Management Plan was revised in Section 8 (page 53) and the Control Room Management Plan was revised in Section 10.4 (page 69-70) to address the issue identified.

Identify process for performing annual review: The Alarm Management Plan was revised in Section 1.6, Table 3 (page 19) to address the issue identified.

Measure effectiveness: The Alarm Management Plan, Section 1.7, Table 4 (page 22) addresses the issue identified. No revision was required.

Responsibility during review process: The Alarm Management Plan was revised in Section 1.6, Table 3 (page 19) to address the issue identified.

Final approval authority: The Alarm Management Plan was revised in Section 1.6, Table 3 (page 19) to address the issue identified.

Item 4

§ 192.631 - Control room management.

(a) ...

(h) **Training.** Each operator must establish a controller training program and review the training program content to identify potential improvements at least once each calendar year, but at intervals not to exceed 15 months. An operator's program must provide for training each controller to carry out the roles and responsibilities defined by the operator. In addition, the training program must include the following elements:

(1) Responding to abnormal operating conditions likely to occur simultaneously or in sequence.

Duke's control room management procedures are inadequate to assure safe operation of a pipeline facility. Specifically, Duke failed to establish a controller training program that included responding to abnormal operating conditions (AOCs) likely to occur simultaneously or in sequence. Duke's CRM Plan for Natural Gas Pipelines, Rev. Sept. 3, 2020, Training CRM 1110, Section 1110, Subsection 1110.2.6 mentions "AOC Conditions Occurring Individually and in Sequence (Scenario Training)" but fails to identify any AOCs that are likely to occur simultaneously or in sequence. It also incorrectly states that controllers must respond to AOCs occurring "individually or in sequence," rather than "simultaneously or in sequence" pursuant to the requirement in § 192.631(h)(1) (emphasis added).

Duke Energy Response:

Controllers responding to AOCs: The Control Room Management Plan was revised in Section 12.2.6 (page 75) to replace the word from "individually or in sequence" to "simultaneously or in sequence" to address the issue identified.

AOC Conditions Occurring (Scenario Training): The Control Room Management Plan was revised in Section 12.2.6 (page 75) to address the issue identified.

Item 5

§ 192.631 - Control room management.

(a) ...

(h) Training. Each operator must establish a controller training program and review the training program content to identify potential improvements at least once each calendar year, but at intervals not to exceed 15 months. An operator's program must provide for training each controller to carry out the roles and responsibilities defined by the operator. In addition, the training program must include the following elements:

(1) ...

(6) 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.

Duke's control room management procedures are inadequate to assure safe operation of a pipeline facility. Specifically, Duke failed to establish a controller training program that included 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. Duke's CRM Plan for Natural Gas Pipelines, Rev. Sept. 3, 2020, Training CRM 1110, Section 1110.3 Team Training procedure lists topics that will be covered in team training, but fails to specifically address how team training will be conducted. For example, the procedure fails to include information regarding tabletop exercises, lessons learned, historical events, or oil-gas industry events. Team training may include multiple methods and tools to supplement exercises - i.e. computer-based training (CBT), classroom, on the job training (OJT), etc.; however, the focus must be on personnel interaction and team work.⁵ Furthermore, Subsection 1110.3.1 only states that team training will include both controllers and other individuals who would reasonably be expected to operationally collaborate with controllers during normal, abnormal or emergency situations. The procedure fails to identify which identified individuals or positions (job titles) are required to participate in team training.

Duke Energy Response:

Training program that include both controllers and other individuals, who would reasonably be expected to operationally collaborate with controllers: The Control Room Management Plan was revised in Section 12.3.1 (page 76) to address the issue identified.

Specifically address how *Team Training* will be conducted: The Control Room Management Plan was revised in Section 12.3.2 (page 77) to address the issue identified.

Identify individuals or positions required to participate in team training: The Control Room Management Plan was revised in Section 12.3.1 and 12.3.3 (pages 76-77) to address the issue identified.

As always Duke Energy appreciates the valuable assistance rendered by the Pipeline and Hazardous Materials Safety Administration in an ongoing effort to operate a safe and efficient gas delivery system. If you have any questions regarding this information, please contact Mr. Randall Suttles at Randall.Suttles@duke-energy.com or (513)312-8550 or Susan Gilb at Sue.Gilb@duke-energy.com or (513)314-7168.

Sincerely,



Brian Weisker
Senior Vice President & Chief Operations Officer Natural Gas

Attachments