



Tennessee Gas Pipeline
Company, L.L.C.
a Kinder Morgan company

August 15, 2019

Mary L. McDaniel, P.E.
Director, Southwest Region
Pipeline and Hazardous Materials Safety Administration
8701 S. Gessner Road, Suite 630
Houston, TX 77074

Re: Notice of Amendment, CPF 4-2019-1008M

Dear Ms. McDaniel:

Tennessee Gas Pipeline Company, L.L.C. (TGP) is writing in response to the Notice of Amendment (NOA) received on May 20, 2019. By letter dated June 24, 2019, the U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) granted TGP's request for an extension of time for the company to respond to the NOA until August 18, 2019. Thus, this response is timely.

TGP appreciates PHMSA's willingness to discuss the NOA and reach agreement on the proposed changes to TGP's procedures discussed below. Nevertheless, TGP objects to allegations that are based on PHMSA guidance and not the regulations, specifically the control room management FAQ document. Pursuant to the Administrative Procedures Act, 5 U.S.C. § 500 *et seq.*, only regulations that have undergone notice and comment rulemaking and that provide fair notice of the requirement can be enforced against the regulated community. See *ExxonMobil Pipeline Co v. United States DOT*, 867 F.3d 564 (5th Cir. 2017). Moreover, in 2018 the U.S. Department of Justice itself clarified that "[g]uidance documents cannot create binding requirements that do not already exist by statute or regulation." Memorandum from The Associate Attorney General on Limiting Use of Agency Guidance Documents In Affirmative Civil Enforcement Cases (January 25, 2018), <https://www.justice.gov/file/1028756/download>.

Despite this concern, TGP has determined that it will comply with the NOA as an accommodation to PHMSA and amend certain procedures. Below we restate the PHMSA allegation and TGP's response.

PHMSA Allegation 1:

1. §192.631 Control room management.

(d) *Fatigue mitigation.* Each operator must implement the following methods to reduce the risk associated with controller fatigue and could inhibit a controller's ability to carry out the roles and responsibilities the operator has defined:

- (4) Establish a maximum limit on controller hours-of-service, which may provide for an emergency deviation from the maximum limit if necessary for the safe operation of a pipeline facility.

TGP's written control room management procedure, HOU-GC-5, is inadequate because it does not instruct controllers to use appropriate fatigue mitigation measures when working during certain high-risk hours. TGP's procedure only requires that control room personnel utilize fatigue mitigation tactics between the hours of 2:00 am through 5:00 am. This requirement does not meet all of the scenarios where fatigue mitigation must be used.

PHMSA's control room management FAQ section D.07-6 provides the following guidance for controllers working beyond the traditional 8-5, 5-day schedule.

6. *Fatigue mitigation tactics should be implemented during shifts/times of increased fatigue risk, as shown by research and/or fatigue modeling, including:*
 - a. *Any and all shift duty hours worked after the first 8 hours.*
 - b. *Any and all hours worked between 2:00 am and 6:00 am.*
 - c. *Any and all successive night shifts following three successive nights.*
 - d. *Any and all day or night shifts following four successive night shifts unless three nocturnal sleep cycles have been completed.*

TGP must amend their procedures to require fatigue mitigation tactics be employed during all times of increased risk, or provide justification demonstrating that this deviation from parameters does not elevate the fatigue risk.

TGP Response:

TGP has always encouraged controllers to use fatigue mitigation tactics at any point they deem necessary during their shift. This is provided in O&M 1100 Control Room Management Procedure, shown to PHMSA at the time of the inspection. In addition, TGP requires controllers to utilize fatigue mitigation tactics from 2:00 am to 5:00 am. This approach is consistent with PHMSA's control room management FAQ Section D.07 guidance which states that mitigation tactics "should be implemented ... all hours worked between to 2:00 am and 6:00 am." TGP's policy used 2:00 am to 5:00 am because TGP control room shift change occurs at 5:00 am. TGP has modified its "HOU-GC-5 Fatigue Mitigation Strategy" document as requested. Specifically, TGP included the additional time slots noted in PHMSA's FAQ Section D.07-6. The new version of HOU-GC-5 Fatigue Mitigation Strategy is attached as Exhibit 1.

PHMSA Allegation 2:

2. §192.631 Control room management.

(d) 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:

(5) 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;

TGP's written control room management procedure HOU-GC-7a is inadequate because it does not provide parameters or thresholds for determining whether these workloads are adequate. TGP must amend their procedures to include thresholds or parameters to determine whether the controller workloads are adequate.

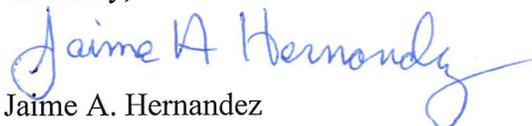
TGP Response:

As PHMSA itself acknowledges in its control room management FAQ section E.09, "[t]he CRM rule does not establish a uniform limit on controller time for responding to alarms." TGP's O&M 1100, Control Room Management Procedure, sets forth the process for the Company to determine the baseline for whether controllers have sufficient time to analyze and react to incoming alarms on an annual basis. The analysis is provided to management on a quarterly "CRM Workload Analysis" form.

While TGP believes a comparison of the controller's workload against the annual baseline is the best measure of whether a controller has sufficient time to analyze and react, TGP has amended the "CRM Workload Analysis" form. As shown on the example workload analysis form, the form now states that "20 minutes or more is preferred" on the bottom of the form for easy comparison by management during the quarterly workload review. An example of the new form is attached as Exhibit 2.

I trust that this information will allow PHMSA to close the NOA but if you need further information, please feel free to contact me at 713-369-9443.

Sincerely,



Jaime A. Hernandez
Director Engineering – Codes and Compliance

HOU-GC-5

Fatigue Mitigation Strategies

(A Few Helpful Excerpts from Circadian institute's "Working Nights Health & Safety Guide")

Fatigue mitigation tactics are available at all times for Houston Gas Control Center

1. Exercise (walk floor, jog in place, push-ups, squats, sit-ups, or isometrics).
2. Stretch & change posture (alternate sitting, standing, & moving).
3. Build "sleep bank" balance by getting extra sleep several days ahead of time, and/or take a 20 minute nap before shift.
4. Modify environmental conditions (drop temperature control below 70 degrees, increase lighting to brighten work area).
5. Dress in layers to more easily adjust body temperature.
6. Utilize caffeine by drinking coffee, tea, or soda (careful - excessive amounts can be counter-productive).
7. Keep TV going in the background (especially helpful if program has variable sounds such as conversation, action, etc).
8. Talk to your co-worker to help keep your mind engaged.
9. Chew gum or ice.
10. Avoid high sugar, simple carbohydrates. Instead snack on complex carbohydrates such as pretzels, fruit, or vegetables. Also avoid high fat or excessively large meals.
11. Vary your route home. If feeling exhausted, take a nap before driving home.

Control Room Personnel must be aware of increased fatigue risk times and must utilize fatigue mitigation tactics during **Any and All** times below:

- Shift duty hours worked after the first 8 hours
- Hours worked between 2:00am and 5:00am (or end of shift)
- Night shifts following three successive night shifts
- Day and Night shifts following four successive night shifts unless three nocturnal sleep cycles have been completed

Exhibit I

Controllers who show overwhelming signs of fatigue should notify the lead controller in charge of scheduling ASAP. Controllers who notice other controllers who are showing signs of overwhelming fatigue should contact the lead controller in charge of scheduling, the scheduling practices will then be followed. If fatigue becomes an ongoing repetitive problem with a controller, suspension or termination maybe a consequence.

HOU-GC-5 Fatigue Mitigation Strategies Policy Change Control

Date	Revisions
9/18/2018	During CRM audit - Added Fatigue mitigation tactics are available at all times for Houston Gas Control Center to policy.
8/9/2019	Added increased fatigue risk times Removed Control Room requirement to document tactics, per Mary McDaniel (PHMSA-SW)

CRM Workload Analysis

Controllers/Shift	<u>TGP</u>	2.75 see Staffing tab
<u>Raw Data</u>		
Non Pipeline Activity (Minutes)	5.0%	Assumption for unmeasured general controller activity; 2018 Survey
Daily Phone Activity (Minutes)		Phone metrics - total minutes for primary GC number
Daily Alarms (Count)		Total alarms for the period / days
Daily Issued Commands (Count)		Total issued SCADA commands / days
<u>Timing Assumptions (minutes)</u>		
Alarms	1.5	Assumption for time spent addressing each alarm
Issued Command	0.5	Assumption for time spent issuing a command
<u>Alarm Metric by Controller</u>		
Average Alarm Count per Controller / Hour		
Average Alarm Count per Controller / Shift		
Alarm Limit/shift	150.0	Per AMP (API 1167) Max Manageable Alarm Rate per Controller position is 300 per day / 2 shifts per day = 150
Under/(Over) Limit		
<u>Hourly Metric by Controller (minutes)</u>		
Alarms		
Issued Commands		
Documentation	15.0	Assumption for time spent logging controller notes
Non Pipeline Activity		
Phone Activity		
Measured Task Time		
Monitoring Pipeline (This Qtr)		Twenty minutes or more is preferred