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Robert Burrough, Director Eastern Region
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14 April, 2020

RE: CPF 1-2020-0001M

Dear Mr. Burrough:

Please accept Louisville Gas and Electric Company's (LG&E) responses to the letter you sent dated March 13, 2020 regarding the July 22-25, 2019 inspection of LG&E's procedures for Underground Natural Gas Storage in Louisville, KY referenced above. For your records, LG&E would like to inform you that John Malloy has retired, and Tom Jessee has been named as the Vice President of Gas Operations for LG&E.

1. § 192.12 Underground natural gas storage facilities.

(a) ...

(e) Operators of underground gas storage facilities must establish and follow written procedures for operations, maintenance, and emergencies implementing the requirements of API RP 1170 and API RP 1171, as required under this section, including the effective dates as applicable, and incorporate such procedures into their written procedures for operations, maintenance, and emergencies established pursuant to § 192.605.

LG&E's written procedures for implementing the requirements of API RP 1171 were inadequate. Specifically, LG&E's Storage Integrity Management Plan (SIMP) did not require a frequency for performing the reviews of risk assessment results within its Section 9.6, in accordance with API



RP 1171, Section 8.5.2 Methodology (Section 8.5.2). Section 8.5.2 states in part:

The operator shall assess risk related to the storage operation using a consistent process. The operator should determine the risk assessment method applicable for the facilities. A risk assessment method should include the following characteristics in the risk assessment protocol:

- (a) ...
- (f) regular, periodic risk assessment reviews to update information and evaluate risk management effectiveness.

At the time of the inspection, LG&E's SIMP, Section 9.6 referenced a periodic evaluation, but did not define a regular frequency for performing reviews of risk assessment results.

LG&E Response to 1:

The Storage Integrity Management Plan (“SIMP”) was modified in Section 17.3 to specify a review frequency of once each calendar year. This modification followed LG&E’s Management of Change procedures.

2. **§ 192.12 Underground natural gas storage facilities.**
 - (a) ...
 - (e) **Operators of underground gas storage facilities must establish and follow written procedures for operations, maintenance, and emergencies implementing the requirements of API RP 1170 and API RP 1171, as required under this section, including the effective dates as applicable, and incorporate such procedures into their written procedures for operations, maintenance, and emergencies established pursuant to § 192.605.**



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LG&E's written procedures for implementing the requirements of API RP 1171 were inadequate. Specifically, LG&E's Annulus Pressure Monitoring Procedure did not address monitoring for the presence of annular gas where well annulus cannot be monitored, in accordance with API RP 1171, Section 9.3.2 Well Integrity Monitoring (Section 9.3.2).

Section 9.3.2 states in part:

The operator shall monitor for presence of annular gas by measuring and recording annular pressure and/or annular gas flow. The operator shall evaluate each annular gas occurrence that exceeds operator- or regulatory-defined threshold levels determined from well integrity evaluation and from risk assessment.

At the time of the inspection, LG&E's written procedures failed to address how they would monitor the integrity of wells without annular ports.

LG&E Response to 2:

The GOM&I SO-MA-004 “Checking Annular Pressure” was modified in Section 6 to address monitoring for the presence of annular gas where well annulus cannot be monitored. Additionally, a Gas Work Standard was established for the situation that exists where there is no gage to check annulus pressure. These modifications followed LG&E’s Management of Change procedures.

3. § 192.12 Underground natural gas storage facilities.
 - (a) ...
 - (e) Operators of underground gas storage facilities must establish and follow written procedures for operations, maintenance, and emergencies implementing the requirements of API RP 1170 and API RP 1171, as required under this section, including the effective dates as applicable, and incorporate such procedures into their written procedures for operations, maintenance, and emergencies established pursuant to §



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192.605.

LG&E's written procedures for implementing the requirements of API RP 1171 were inadequate. Specifically, LG&E's Annulus Pressure Monitoring Procedure did not define a threshold or limit for the annular pressure and/or annular gas flow, in accordance with Section 9.3.2.

Section 9.3.2 states in part:

The operator shall monitor for presence of annular gas by measuring and recording annular pressure and/or annular gas flow. The operator shall evaluate each annular gas occurrence that exceeds operator- or regulatory-defined threshold levels determined from well integrity evaluation and from risk assessment.

At the time of the inspection, LG&E's annular pressure thresholds were in draft form only and had not gone through the Management of Change process.

LG&E Response to 3:

The GOM&I SO-MA-004 “Checking Annular Pressure” was modified in Section 6 to address a threshold for the annular pressure and/or annular gas flow. This modification followed LG&E’s Management of Change procedures.

4. § 192.12 Underground natural gas storage facilities.
 - (a) ...
 - (e) Operators of underground gas storage facilities must establish and follow written procedures for operations, maintenance, and emergencies implementing the requirements of API RP 1170 and API RP 1171, as required under this section, including the effective dates as applicable, and incorporate such



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procedures into their written procedures for operations, maintenance, and emergencies established pursuant to § 192.605.

LG&E's written procedures for implementing the requirements of API RP 1171 were inadequate. Specifically, LG&E's Annulus Pressure Monitoring Procedure did not require that each annular gas occurrence that exceeds operator-defined or regulatory-defined threshold levels be evaluated, as required by Section 9.3.2.

Section 9.3.2 states in part:

The operator shall monitor for presence of annular gas by measuring and recording annular pressure and/or annular gas flow. The operator shall evaluate each annular gas occurrence that exceeds operator- or regulatory-defined threshold levels determined from well integrity evaluation and from risk assessment.

At the time of the inspection, LG&E's written procedures failed to address how they would evaluate annular gas occurrences that exceeds annular pressure thresholds or limits.

LG&E Response to 4:

The GOM&I SO-MA-004 “Checking Annular Pressure” was modified in Section 6 to address evaluating occurrences that exceed threshold levels for annular gas. This modification followed LG&E’s Management of Change procedures.

5. **§ 192.12 Underground natural gas storage facilities.**
 - (a) ...
 - (e) **Operators of underground gas storage facilities must establish and follow written procedures for operations,**



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maintenance, and emergencies implementing the requirements of API RP 1170 and API RP 1171, as required under this section, including the effective dates as applicable, and incorporate such procedures into their written procedures for operations, maintenance, and emergencies established pursuant to § 192.605.

LG&E's written procedures for implementing the requirements of API RP 1171 were inadequate. Specifically, LG&E's emergency response (ER) training plan did not define a frequency for ER training, as required by API RP 1171, Section 10.6.2 Training (Section 10.6.2).

Section 10.6.2 states:

Storage operations and applicable staff shall receive training in the use of the emergency preparedness/response plan. The training can include mock drills and participation in table-top exercises at regular intervals. The table-top exercises or mock drills can include civil emergency responders to enhance understanding and successful incident response.

At the time of the inspection, LG&E's ER plan described periodic training. The ER plan failed to define the actual interval to be used for performing the training.

LG&E Response to 5:

The SIMP Section 19 was modified to include an Emergency Response training frequency of at least once every three years. This modification followed LG&E's Management of Change procedures.



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Sincerely,

A handwritten signature in black ink, appearing to read 'Dara Griggs', is written in a cursive style.

Dara Griggs
Gas Environmental and Compliance Coordinator

Enclosure: Storage Integrity Management Plan Revision 3;
Gas Operations, Maintenance, and Inspection Manual SO-MA-
004 Revisions 2

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