



CH2M
4246 South Riverboat Road
Suite 210
Taylorsville, Utah 84123

February 26, 2020

RML-LTR-002

Patricia A. Silva, Chief
Materials Inspection Branch
Division of Nuclear Materials Safety
United States Nuclear Regulatory Commission
Region IV
1600 East Lamar Boulevard
Arlington, Texas 76011-4511

Subject: Reply to a Notice of Violation

Dear Ms. Silva,

This letter provides the Licensee's response to NRC Inspection Report 030-39123/2019-001; and notice of violation for CH2M Hill, Inc License No. 43-35500-01, dated February 4, 2020, received by CH2M Hill, Inc. on Monday February 10, 2020.

The response is organized in four areas as described in the dated NRC letter and 10 CFR 2.201: a written explanation of the violation; corrective actions which have been taken; corrective and preventive actions planned; the date when full compliance will be achieved.

Reason for the violation:

As documented in the dated NRC letter, the subject surveys were reviewed by the RSO or designee as intended by procedure OP-001 but there were inaccurate instrument model numbers, serial numbers, a calibration date and other errors remaining in the reviewed documents. The instruments, methodology, and data were not affected by the inaccuracies found after the review was performed and the survey results are accurate.

A formal cause analysis was performed on the issue identified within the Notice of Violation (NOV). The causes and contributing causes are outlined below.

Two main causes were identified as the root of the NOV.

- 1) Human Performance Less Than Adequate (LTA)/Work Practice LTA – Review(s) was not sufficient in detail to ensure accuracy and completeness of surveys.

The protocol for the survey process was not as thoroughly conducted as planned and was the initial attempt in performing work associated with the new RML and associated procedures. While not a procedural noncompliance, the normal route of review is three parts 1) input/initiation by the field technician, 2) review by the field coordinator, and 3)

final review by the Radiation Safety Officer (RSO)/designee. The field coordinator had initiated and reviewed the initial survey form and data input, following with the RSO review. The RSO was looking for standard deviations within the data set and had not thought to provide an extra review of the model input (type/number, etc.), normally reviewed by the field coordinator prior to the RSO's review. As the data collected during the performance of the surveys was correct and the results were as anticipated, further detailed review was determined at the time to not be warranted.

- 2) Human Performance LTA/Work Practice LTA – Attention to detail was less than adequate – transcription of the model number was not correctly performed or identified during review(s). Initial entry was propagated throughout all the associated survey sheets as the original input on the first survey was used as the template for all surveys on the project (carried the error forward).

Contributing Causes:

- 1) Management Problem/Change Management LTA – The electronic form contained linkage errors. During design and testing of the form for accuracy of the formulas and presentation of the data, test data was inserted to ensure a proper functionality. The test data is designed to challenge the conditional formatting to ensure it responds properly and display the data in the printable form accurately. However, the links connected to an incorrect worksheet, resulting in a broken "link" which was not corrected prior to field use. This resulted in incorrect instrument information being carried forward when the data was processed into "print view" for further data review/readability. The fields were not "locked" to prevent inadvertent input/change within the cell.
- 2) Management Problem/Work Organization and Planning LTA - Fatigue Factor – Field work involved 12 hour days in 95 degree heat, wearing doubles. Within 30 minutes of surveying, crew was exhausted and would require an hour to recover. The project had 3 teams that rotated out. Follow-up with the surveys (review, etc.) was performed at night after a day in the field.
- 3) Training Deficiencies/Training Material LTA - While team was trained on how to use the form (input into the grey area), they were not trained on how to catch an issue with a broken link/incorrect formula. Not all individuals are savvy in the use of excel sheets and formulas.

Corrective Actions taken:

- 1) Notified the team of the issue and implemented a "2 eyes" review process.
- 2) The team performed an extensive review of all 44 surveys to identify any additional errors and ensure they were corrected. This review process was also carried out on remainder/new reviews to ensure no erroneous data and ensure the data was captured and transcribed correct on all working files. The review identified editorial corrections and improvements to further enhance the quality of the surveys. The changes were noted in a memo to file and the affected surveys revised. Completed 11/11/2019.

Corrective and Preventive Actions Planned:

- 1) Form Correction – The electronic survey form has been reviewed, broken data links were corrected and appropriate “locking” of the formula cells have been completed to prevent future inadvertent change to the cell data/formula. The form was not utilized on other licensed activity projects during the time period. Completed 11/11/19.
- 2) Additional Training - Authorized users and health physics staff will receive additional training in the survey documentation process and use of digital survey forms prior to initiating new surveys under the NRC Radiation Material License (RML). Training will review the process of entering instrumentation information into the digital form, emphasize the errors identified within the 44 surveys forms; and stress the importance of checking entries during reviews (including instrumentation numbers...not just the name/model of the instrument). Planned Completion Date: 3/30/2020.
- 3) Lessons Learned will be developed to address project field work, potential fatigue factor, and data completion/review. Lessons Learned are an integral part of current projects and future project set-up. Planned Completion Date: 3/30/2020

Date when full compliance will be achieved: 3/31/2020

While the issue(s) identified in the NOV did not meet our standards of performance, it is important to note an extent of condition was performed and found the condition was limited to one project and the quality of the data was reviewed and confirmed there was no issue with the integrity of the data collected. Instrument(s) were properly calibrated, and data collected were accurate. No data integrity issue.

Important to note the files provided for review were considered documents in progress (working documents, not final records). The presentation of the documents in pdf format was for ease of reading/reviewing the material. Additional review is performed prior to making documents final and turning over to the client.

Please contact me (505-715-0126) or Mr. Tony Mason (435-655-1009) with questions or requests.

Regards,



Sharon Minchak
CH2M HILL, Inc
Vice President, Environmental Operations
Federal & Environmental Solutions

Cc: Hardcopy to: USNRC, ATTN: Document Control Desk, and; Regional Administrator, Region IV