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ENVIRONMENTAL, SAFETY AND QUALITY SYSTEMS

December 19, 2014

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

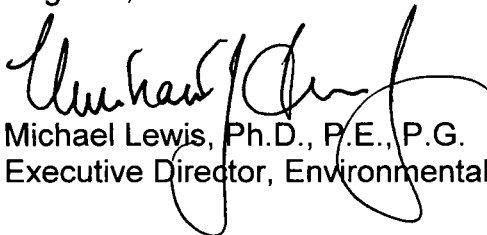
Subject: Reply to a Notice of Nonconformance
Re: NRC Docket 99900238

Dear Mr. Jacobson:

As required by the Nuclear Regulatory Commission's Inspection Report No. 99900238/2014-201 of their inspection conducted at Southwest Research Institute (SwRI) in San Antonio, Texas on October 6-9, 2014, SwRI submits the enclosed Reply to a Notice of Nonconformance.

If you have any questions, please contact me at 210-522-3533 or michael.lewis@swri.org.

Regards,



Michael Lewis, Ph.D., P.E., P.G.
Executive Director, Environmental, Safety and Quality Systems

Attachment: Reply to a Notice of Nonconformance

Cc: Chief, Electrical Vendor Inspection Branch, Division of Construction Inspection and Operational Programs, Office of New Reactors



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IE09
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As a result of an NRC inspection conducted at Southwest Research Institute (SwRI) during October 6 -9, 2014 two nonconformance reports were issued by the NRC inspection team (Reference 99900238/2014-201-01 and 99900238/2014-201-02).

Nonconformance 99900238/2014-201-01

As of October 9, 2014, SwRI failed to ensure that activities affecting quality were prescribed by documented instructions or procedures; or failed to ensure that test procedures contained instructions and associated quantitative or qualitative acceptance criteria.

Specific Example 1.

SwRI procedure TAP-01-0412-004 did not require that overall measurement uncertainty be determined as necessary to account for all errors that could impact the accuracy of the measured and reported radiation dose. The procedure did not account for changes in the hot cell environment during the radiation exposure of components that could occur due to the drawing in of outside air through the ventilation system. Furthermore, the procedure did not contain sufficient instructions to ensure uniform exposure or account for the non-uniformity of exposure due to variation in the dose rate fields. Also, the procedure did not contain sufficient instructions to address whether the reported dose applies only to surface or depth exposures.

This was identified as 2014-CAR-0557 within the SwRI Quality Reporting System

a. Reason for the Noncompliance

The procedure did not contain sufficient specific information requiring formal documentation of important parameters and conditions.

b. Corrective Steps Taken and Results Achieved

A review of the process has been initiated to determine the formal documentation requirements prior to a revision of TAP-01-0412-004.

c. Corrective Steps That Will Be Taken to Avoid Noncompliances

The procedure, TAP-01-0412-004, will be revised to provide additional, clear instruction regarding the documentation of measurement uncertainty and of the dosimetry line used relative to the samples being irradiated. Current practices will be formally documented in the procedure together with go/no-go criteria. Formal uncertainty evaluations of all the uncertainties associated with the irradiation will be addressed in a new document.

d. Date of Corrective Action Completion

Completion date is scheduled for March 31, 2015.

Specific Example 2.

SwRI did not have a procedure or instruction to describe when or how to account for differences in test methods associated with the use of biaxial versus triaxial seismic test equipment. During the inspection, discussions with SwRI personnel indicated that SwRI's approach to this was to use a scaling factor, but

they also indicated that the scaling factors were not always used and were used only when requested by, or approved by, SwRI's customers. Failing to account for the biaxial versus triaxial testing differences could invalidate the Certificate of Conformances provided by SwRI to their customers stating the testing performed meets the requirements of IEEE 344 "IEEE Recommended Practice for Seismic Qualification of Class 1E Equipment for Nuclear Power Stations."

This was identified as 2014-CAR-0466 within the SwRI Quality Reporting System

a. Reason for the Noncompliance

The documentation requirements for the use of multipliers on specific tests when biaxial testing is performed in place of triaxial testing was not specified. Testing differences were accounted for but were not clearly documented.

b. Corrective Steps Taken and Results Achieved

Typically, SwRI either uses a multiplier or customer profiles that have already accounted for the differences between biaxial and triaxial testing. The process was reviewed and it was determined the deficiency was in documenting the multiplier and its use on any given test.

c. Corrective Steps That Will Be Taken to Avoid Noncompliances

A process will be implemented regarding the documentation required when biaxial testing is performed in lieu of triaxial testing. This documentation will include whether a multiplier was used and will record the value and the source. If a multiplier is not used this fact will also be documented.

d. Date of Corrective Action Completion

Completion date is scheduled for January 30, 2015.

Specific Example 3.

SwRI did not have a procedure or instruction for performing testing to verify the purity of commercially procured platinum used at SwRI to coat main steam safety relief pilot valve internals. Factors such as the number of tests to perform on each sample, acceptance criteria for test results, and the basis for sample homogeneity were not prescribed or evaluated by procedures or instructions.

This was identified as 2014-CAR-0559 within the SwRI Quality Reporting System

a. Reason for the Noncompliance

Gaps were identified in the written procedure.

b. Corrective Steps Taken and Results Achieved

Alternative testing has been identified to verify the platinum source material purity prior to use. The capabilities of the alternative laboratory (the Analytical and Environmental Chemistry laboratory at SwRI) have been reviewed to ensure their suitability, including the ability to perform testing to the required sensitivity in accordance with their 10CFR50 Appendix B program.

c. Corrective Steps That Will Be Taken to Avoid Noncompliances

The purity of commercially procured platinum will, in the future, be analyzed using the Analytical and Environmental Chemistry laboratory at SwRI. Factors such as the number of tests to be performed for each sample will be documented as part of the test request. Other factors, including acceptance criteria and sample homogeneity, will be documented in an applicable procedure for the coating process.

d. Date of Corrective Action Completion

Completion date is scheduled for February 27, 2015.

Nonconformance 99900238/2014-201-02

As of October 9, 2014, SwRI failed to ensure that measures were established to assure that instruments used in activities affecting quality were properly controlled, calibrated, and adjusted at specified periods to maintain accuracy within necessary limits.

Specific Example 1.

SwRI failed to ensure that the measuring and testing system (e.g. the radiation survey instrument, associated procedures, and temperature and barometric measuring equipment) used to determine the applied radiation dose to nuclear components was properly controlled and calibrated. Specifically, during the irradiation of components for Project 17669.16.001, Project 19347.01.001 and Project 17669.15.001, radiation was applied to components in excess of 1000 kR/hr, which exceeded the calibrated range of the equipment being used to measure the exposure rate.

This was identified as 2014-CAR-0560 within the SwRI Quality Reporting System

a. Reason for the Noncompliance

The equipment had been modified but documentation regarding the modification was not complete or readily available.

b. Corrective Steps Taken and Results Achieved

The manufacturer of the probe/meter in question was consulted and they confirmed acceptability at the higher rate. It was determined that the meter had been previously modified to accommodate higher rates. The modification occurred prior to 1995.

An additional device has been purchased with a greater range. This newer device will be used to verify the validity of the readings taken by the initial meter.

c. Corrective Steps That Will Be Taken to Avoid Noncompliances

An assessment of all equipment used in the laboratory will be performed to determine and document the appropriate range of use. Additionally, documentation will be prepared to support the previous use and calibration of the equipment.

d. Date of Corrective Action Completion

Completion date is scheduled for March 31, 2015.

Specific Example 2.

SwRI failed to ensure that the systems utilized to perform seismic testing of nuclear safety related equipment were properly calibrated. The inspectors identified that while portions (accelerometers and analog to digital converters) of the two seismic excitation systems had been calibrated, the portion of the systems that analyzed the resulting digital signals had never been fully calibrated or verified.

This was identified as 2014-CAR-0463 and 2014-CAR-0465 within the SwRI Quality Reporting System

a. Reason for the Noncompliance

Previous calibration and verification was deemed adequate at the time it was performed. As there had been no changes to the software since 2001 the process was not identified as requiring additional verification.

b. Corrective Steps Taken and Results Achieved

Calibration and verification had been previously performed and no issues were identified. The software utilized to control the seismic testing was reviewed and it was determined that there had been no recent changes made and therefore the previous calibration and verification remained valid. Additional actions were identified to address the portions of the process that were not previously fully addressed.

c. Corrective Steps That Will Be Taken to Avoid Noncompliances

A software validation process will be defined for the systems utilized to perform seismic testing. This will include independent verification that the resulting digital signals, including table motion, match the programmed inputs. Periodic verification will also be implemented that will include physical and electrical testing.

d. Date of Corrective Action Completion

Completion date is scheduled for January 30, 2015.

Specific Example 3.

SwRI failed to ensure that the test instrumentation used to verify the purity of commercially procured platinum used in the plating of main steam safety relief pilot valve internals was properly controlled. Specifically, the inspectors determined that the test equipment being utilized to verify the platinum purity was inappropriate for this purpose and did not have the necessary sensitivity to measure the platinum purity down to the levels being requested.

This was identified as 2014-CAR-0562 within the SwRI Quality Reporting System

a. Reason for the Noncompliance

The system used for determining the platinum purity was a legacy process that had not been validated to determine it was capable of meeting the specification required by the procedure.

b. Corrective Steps Taken and Results Achieved

Alternative testing has been identified to verify the platinum source material purity prior to use. The capabilities of the laboratory (the Analytical and Environmental Chemistry laboratory within the Chemistry and Chemical Engineering Division at SwRI) have been reviewed to ensure their suitability and a different technique has been identified that will provide the required sensitivity.

c. Corrective Steps That Will Be Taken to Avoid Noncompliances

A different analytical technique will be utilized to determine the purity of commercially purchased platinum. The test instrument to be used will have the required sensitivity for the measurement.

d. Date of Corrective Action Completion

Completion date is scheduled for February 27, 2015.