



United States Department of the Interior
U.S. GEOLOGICAL SURVEY
12201 Sunrise Valley Drive
Reston, Virginia 20192

February 25, 2019

In Reply Refer To:
Mail Stop 102
GS19000471

Director, Office of Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Reply to a Notice of Violation: EA-18-031 and EA-18-111

This letter is in reply to your letter dated December 31, 2018 (delivered on January 29, 2019 following the resumption of U.S. Geological Survey appropriations), U.S. GEOLOGICAL SURVEY– NOTICE OF VIOLATION AND PROPOSED IMPOSITION OF CIVIL PENALTY - \$7,250 (NRC INSPECTION REPORT 50-274/2018-204 AND NRC INVESTIGATION REPORTS 4-2017-027 AND 4-2018-005). That letter identified two violations. The first violation (henceforth referred to as “violation one”) involved the failure of the U.S. Geological Survey (USGS) to meet the minimum staffing requirements when the reactor was not secured. Specifically, on October 15, 2017, the Reactor Supervisor unsecured the reactor during the performance of scram checks without a second person present within the Denver Federal Center who was able to carry out prescribed instructions. The second violation (henceforth referred to as “violation two”) involved the failure of USGS to maintain complete and accurate records in all material respects. Specifically, on or about April 11, 2017, the Reactor Supervisor created inaccurate records by deliberately preparing documents indicating that all operators had completed their required training when the required training had not taken place, and then provided these documents to the NRC inspector during an inspection at the USGS TRIGA Reactor (GSTR) facility in April 2017.

The USGS does not dispute either of these violations and is committed to addressing both the specific violations as well as any underlying root causes related to management oversight and organizational culture. The USGS paid the \$7,250 fine on February 13, 2019 via government purchase card. The sections below provide specific information requested by the Nuclear Regulatory Commission, including (1) the reason for each violation, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken; and (4) the date when full compliance will be achieved.

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(1) Reason for Each Violation

Violation one occurred due to a failure of the GSTR staff to correctly interpret technical specifications related to staffing requirements when the reactor is shutdown but unsecured. The first sentence of GSTR Procedure 1, "Procedure for reactor startup, operation, and shutdown" states that "A reactor startup checklist shall be satisfactorily completed prior to beginning a reactor startup." One section of that startup checklist requires that "SCRAM checks" be performed, which requires removing the reactor key from its lockbox and using the key to turn the console key switch to the "on" position. SCRAM checks are the only section of the startup checklist that require the use of the reactor key. The Technical Specifications (TS) in place prior to relicensing in 2016 did not address specific staffing requirements for operation, although Chapter 5 of the reactor operations manual described staffing requirements when the reactor was operating.

The historical interpretation at the facility had been that SCRAM checks could be completed without meeting the staffing requirements in Chapter 5 of the reactor operations manual because those staffing requirements only applied following reactor "reactor startup" (i.e., a power manipulation with the intent of achieving criticality), and that SCRAM checks were a pre-startup activity. This historical interpretation for the allowance of performing SCRAM checks with less stringent staffing requirements than when the reactor is operating carried over into the new license. However, the new TS following relicensing contained two important changes, including the establishment of explicit staffing requirements for reactor operation, as well as the introduced a new term, "unsecuring" the reactor, whose definition clearly applied to SCRAM checks as well as reactor operation at power.

Per TS 6.1.3, dated October 17, 2016, this unsecured condition requires both a Licensed Operator in the control room and a second person present within the Denver Federal Center who is able to carry out prescribed instructions. Because of these differences and historical interpretations regarding a distinction between SCRAM checks and a power manipulation with the intent of achieving criticality, staff did not consider that the new TS would clearly require changes to the historical interpretation (i.e., SCRAM checks could not be performed unless the staffing conditions for an unsecured reactor were met). Because of these differences between the old and new TS, changes to the startup checklist would also be necessary to verify that staffing requirements were met as soon as the reactor was unsecured for SCRAM checks.

Violation two occurred following the failure of the Reactor Supervisor to conduct required group requalification training prior to the NRC inspection of the GSTR on April 11, 2017. Although the Reactor Supervisor has indicated that he covered the intended training topics with individuals in a series of one-on-one meetings, he never conducted the required group training. In discussions with the Reactor Supervisor, he indicated that the failure to hold group training was inadvertent and could likely have been prevented if better management controls were in place to remind himself and staff of the training requirement. However, the cause of the willful violation was a lapse in judgment and integrity by the Reactor Supervisor in deciding to create false training records rather than admit to the inspector that group training had not occurred.

(2) Corrective Steps Taken and Results Achieved

Violation One: The Reactor Supervisor who committed the non-willful violation was made aware by the NRC investigator of the violation of staffing requirements during the NRC investigation process. Although the NRC had not yet officially informed USGS of the apparent violation, the Reactor Supervisor brought the issue to the attention of the other reactor operators on the GSTR staff. From that point forward, each operator has ensured that the staffing requirements were met before unsecuring the reactor for any purpose, including the SCRAM checks. The issue was subsequently discussed with the Reactor Operations Committee (ROC) during the next meeting. On October 16, 2018, the ROC members voted to approve an official change to both the daily startup checklist and monthly checklist, adding a line for documenting that the staffing requirement was met prior to unsecuring the reactor and commencing SCRAM checks. These changes ensured that the staffing requirements specified in the checklists conformed to the current technical specifications.

Violation Two: The Reactor Supervisor responsible for the violation has indicated that since the NRC initiated its investigation, he took several administrative steps to better ensure and document the completion of required training. He changed requalification sheets so that each staff member now signs the sheet indicating their attendance. This corrective action provides multi-factor verification that makes it harder for a single individual to falsify records. He also created a calendar of required tasks, making it the responsibility of the Reactor Supervisor to track license requirements and their due dates.

Consistent with the response outlined in the USGS letter to the NRC dated November 8, 2016, USGS Senior Management has also taken and will continue to take a number of steps to address both the specific lapse of personal integrity demonstrated by the Reactor Supervisor, as well as potential lapses in management oversight that could have contributed to the situation. These include:

- The Reactor Supervisor has been detailed to a position outside of the GSTR facility and his physical access to the reactor facility has been suspended.
- The former Reactor Administrator voluntarily retired from USGS, effective October 23, 2018. The USGS has since designated an interim Reactor Supervisor and designated a new Reactor Administrator.
- USGS has paused power operation of the reactor to allow for an assessment of the apparent violations as well as the broader safety and operational culture within the reactor organization. The USGS has requested that the National Organization of Test, Research, and Training Reactors (TRTR) arrange for an external peer review audit of the GSTR organization. The TRTR has identified an audit team of five individuals who are in senior leadership roles in other reactor facilities. USGS has also requested that the Department of the Interior Inspector General investigate and is awaiting a response.

(3) Corrective Steps that will be Taken

The TRTR audit team is scheduled to visit the GSTR the week of March 11, 2019. The final statement of work for the audit is being developed by the audit team and USGS senior management but is expected to include an examination of operating procedures, the culture of the GSTR organization, and how the GSTR is managed within the larger USGS organizational structure. This audit may also include starting up and operating the reactor under the observation of the audit team to meet minimum proficiency requirements for operators while providing the audit team insight into the operational proficiency and professionalism of the GSTR staff. The USGS anticipates that the audit team will provide a series of recommendations that will ensure that USGS operates the GSTR in accordance with best practices of other research reactor organizations.

In parallel with the TRTR peer review audit, the USGS is also considering changes to the USGS organizational structure that will result in closer oversight of the GSTR staff, Reactor Supervisor and Reactor Administrator by the USGS regional office in Denver. Although the GSTR is located within the regional boundaries, it is currently overseen directly by the Energy and Minerals Mission Area staff located at USGS Headquarters in Reston, Virginia.

(4) Date when full compliance will be achieved

While the USGS has already made changes to personnel and operating procedures to ensure full compliance with NRC regulations, the USGS does not intend to resume normal operations until addressing findings and recommendations from the peer review audit. The USGS expects to receive the peer review audit report by April 30, 2019, assuming no delays in commencing the audit.

Please feel free to contact me at 703-648-6616 or dbdiamond@usgs.gov.

Sincerely,



David B. Diamond
Acting Associate Director
Energy and Minerals

cc: Director, Office of Nuclear Reactor Regulation
Document Control Desk