



U.S. Department
of Transportation
**Federal Highway
Administration**

1200 New Jersey Ave., SE
Washington, D.C. 20590

In Reply Refer To:
HRDI-1

July 1, 2024

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

Paul G. Krohn,
Director, Division of Radiological Safety & Security,
U.S. Nuclear Regulatory Commission Region I,
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King of Prussia, PA, 19406

R1Enforcement@nrc.gov

Subject: RESPONSE TO APPARENT VIOLATIONS IN NRC INSPECTION REPORT (030-28770/2024-001); EA-24-035

Dear Mr. Krohn:

This letter is in response to the U.S. Nuclear Regulatory Commission (NRC) June 4, 2024 letter and inspection report to the Federal Highway Administration's (FHWA) Turner-Fairbank Highway Research Center (TFHRC) describing four apparent violations being considered for escalated enforcement action in accordance with the NRC Enforcement Policy. In accordance with that June 4, 2024 letter, this is FHWA's written response to the apparent violations identified in the inspection report. As discussed in more detail below, FHWA self-identified the underlying issue of failing to maintain an appropriately qualified and NRC approved RSO. FHWA was working to correct this issue through appointment of a trained RSO prior to the February 27, 2024 NRC inspection. FHWA took prompt and comprehensive corrective action to address the issues identified by NRC during its inspection. FHWA now also has a long-term plan to ensure that it maintains a qualified and trained FHWA employee in the position of Radiation Safety Officer and compliance with the NRC regulations and conditions of FHWA's NRC materials license No. 45-23090-01.

I. Apparent violation #1 – failure to maintain an appropriately qualified and NRC-approved RSO in accordance with License Condition 12 of your NRC license;

The NRC inspection report states:

from September 24, 2022, to February 2, 2024, the individual specifically authorized as the RSO in Condition 12 of NRC License 45-23090-01, dated April 27, 2021, did not

fulfill the duties and responsibilities of the RSO. Specifically, the licensee did not identify a qualified RSO after the previous RSO left employment from the licensee on September 24, 2022. Furthermore, since June 5, 2023, two unqualified individuals not named on the license were identified by the licensee to act as the RSO. The licensee submitted an amendment request on February 2, 2024, to the NRC when a qualified RSO was identified.

FHWA Response:

(1) the reason for the apparent violation, or, if contested, the basis for disputing the apparent violation;

FHWA identified the cause of the apparent violation as a function of two overlapping staffing vacancies in the FHWA research facility, both with responsibilities for the radiation safety program (one as the named RSO in the NRC materials license and one as the Certifying Officer for TFHRC for making updates to the license), as well as the length of time taken to fill the resultant staff vacancies. The apparent violation was also due to other FHWA staff carrying out the radiation safety program responsibilities after the prior TFHRC RSO resigned. Responsibility for carrying out these duties during the position vacancy was not clearly established within TFHRC and therefore the FHWA staff that assumed the duties related to the FHWA radiation safety program did not become familiar with all of the NRC license conditions and NRC regulations.

On June 30, 2022, [REDACTED], the Director of the FHWA Office of Infrastructure Research and Development (R&D) and the prior Certifying Officer for purposes of NRC License No. 45-23090-01, retired from FHWA. The RSO position is an employee within the reporting organizational structure to this Director position. Three months later, on September 24, 2022, the FHWA Radiation Safety Officer (RSO) [REDACTED] resigned from FHWA. With these two vacancies, FHWA had no staff with knowledge of all of the requirements for serving as RSO for FHWA's NRC license or designating a new RSO on the NRC license.

On September 26, 2022 FHWA employee [REDACTED] contacted NRC employee Ayala notifying him of the resignation of the FHWA RSO, and inquiring about training requirements, certification, and use of equipment. See exhibit 5. On October 3, 2022, Mr. Ayala responded providing general information on use of equipment, training, and certification and advised "[p]lease submit an amendment request upon completion of the RSO training." See Exhibit 6. [REDACTED], who had previously signed a 2021 NRC inspection report as the FHWA "licensee's representative" also took on responsibility for acting as RSO during the position vacancy. See exhibit 9 and Exhibit 11. As demonstrated by the email from [REDACTED] and the radiation safety activities carried out by [REDACTED], both had awareness of some of the NRC regulations and conditions of FHWA's NRC materials license No. 45-23090-01 and believed that someone else would take over the RSO responsibilities in the future. [REDACTED] carried out some of the radiation safety program duties in a temporary capacity in an effort to maintain compliance with NRC regulations and the conditions of FHWA's NRC materials license No. 45-23090-01, but he did not have knowledge of the timeframe when the RSO position would be formally filled and was not familiar with all of the NRC license conditions and NRC regulations.

(2) the corrective steps that have been taken and the results achieved;

Five months after [REDACTED] resigned, and eight months after [REDACTED] retired, on February 27, 2023, [REDACTED] was appointed as the new Director of the FHWA Office of Infrastructure R&D. Two and half months later, on May 18, 2023, FHWA posted a vacancy announcement for a Research Chemist position with a closing date of June 7, 2023. See Exhibit 4. This position was intended to backfill the vacancy left when [REDACTED] resigned in September 2022. On September 24, 2023, [REDACTED] began work in the new position of Research Chemist in the Office of Infrastructure R&D. [REDACTED]' position description included a primary work responsibility of "Radiation Safety Officer. Maintenance of the radiation protection program of the HRDI-10." See exhibit 1 page 7.

After being hired for the position, with the designated official responsibility for performing radiation safety officer duties, [REDACTED] began reviewing the RSO files maintained by the prior RSO and identified training and license update requirements for the RSO. On November 30, 2023 emailed [REDACTED] and [REDACTED] to identify requirements associated with the RSO position including obtaining approval to register for mandatory training. See exhibit 12. On December 22, 2023, [REDACTED] received confirmation for scheduled RSO training to occur in January 2024. See exhibit 14.

On December 4, 2023 [REDACTED] sent his first email to NRC, identifying himself as the FHWA employee assigned responsibility for the duties of the RSO and seeking guidance on updating the NRC license. See exhibit 2.

On December 14, 2023 [REDACTED] formally submitted a request to identify himself as the Certifying Officer for all NRC license correspondence and to identify [REDACTED] as the RSO. See exhibit 3. On February 2, 2024, after completing the required training, FHWA re-submitted a request for [REDACTED] to be identified as the RSO in the FHWA NRC materials license No. 45-23090-01. See Exhibit 13.

(3) the corrective steps that will be taken to avoid further violations;

FHWA is ensuring that no further violations occur by establishing a Safety Committee that will, on a regularly recurring basis, review FHWA's compliance with the operations and procedures listed in the TFHRC Radiation Safety Program and the FHWA's compliance with the conditions contained in the NRC materials license 45-23090-01. As noted in the investigation report, on March, 26 2024, [REDACTED] established a TFHRC Nuclear Safety Committee (TNSC) chaired by the RSO with Federal Managers from laboratories utilizing FHWA's gauges, such as the Geotechnical Laboratory, Pavement Testing Facility, and Federal Outdoor Impact Laboratory. See exhibit 15.

As Chair of the TNSC, the RSO developed a TNSC Operating Procedure document. The Operating Procedure states that the TNSC is comprised of at least five FHWA employees including the RSO. See exhibit 24 section 3. The TNSC has regularly scheduled quarterly meetings and is responsible for a variety of activities. One duty of the TNSC is identifying risks to the continuity of staffing for the safety program. See exhibit 24 section 4. To avoid future violations related to the alleged violation #1 that FHWA failed to maintain an appropriately

qualified and NRC-approved RSO, the TNSC is responsible for identifying any risks to the continuity of staffing for the Safety Program and to make recommendations to the Director of the FHWA Office of Infrastructure (R&D) and other FHWA leadership as needed regarding mitigation of those risks. By establishing a committee with familiarity with the Safety Program, and requiring them to meet on a regular basis, FHWA is adding a backstop of multiple FHWA employees who can identify when key staff such as the RSO or members of the committee leave FHWA, or are unavailable to serve on the TNSC for prolonged periods.

Finally, as the Director of the FHWA Office of Infrastructure (R&D), I am developing a standard operating procedure (SOP) on orderly transition of TFHRC radiation safety program duties. This SOP will apply whenever there is a vacancy or extended absence of the employee responsible for those duties. The SOP will establish timeframes for providing training and submitting documentation to NRC designating a new RSO.

(4) the date when full compliance was or will be achieved.

The FHWA received notice of full compliance on March 11, 2024 when NRC notified FHWA that it had issued Amendment No 13. Authorizing Dr. Munoz Campos as the Radiation Safety Officer.

II. Apparent violation #2 – failure to periodically (at least annually) review the radiation protection program content and implementation in accordance with Title 10 Code of Federal Regulations (10CFR) 20.1101(c);

The NRC inspection report states:

from May 20, 2022, until February 2, 2024, the licensee failed to complete periodically (at least annually) reviews of its radiation protection program content and implementation. Specifically, the licensee's records indicated that the last annual review was performed on May 20, 2022, and as of the inspection conducted on February 27, 2024, only one annual audit had been performed. The last annual audit was performed on February 2, 2024.

FHWA Response:

(1) the reason for the apparent violation, or, if contested, the basis for disputing the apparent violation;

As discussed in response to apparent violation #1 above, FHWA identified the cause of the apparent violation as a function of the resignation of the employee responsible for carrying out the duties of the RSO in September 2022, the length of time taken to fill the resultant staff vacancy, and during the vacancy, other FHWA staff carrying out the radiation safety program without receiving certified training and familiarity with all the NRC regulations and conditions of FHWA's NRC materials license No. 45-23090-01.

(2) the corrective steps that have been taken and the results achieved;

FHWA completed a portable gauge audit on February 2, 2024. See exhibit 10.

(3) the corrective steps that will be taken to avoid further violations;

As discussed in response to apparent violation #1 above, FHWA is ensuring that no further violations occur by assigning a trained RSO to carry out the responsibilities of the Radiation Safety Program and by establishing a Safety Committee that will meet on a quarterly basis to review FHWA's compliance with the operations and procedures listed in the TFHRC Radiation Safety Program and the FHWA's compliance with the conditions contained in the NRC materials license 45-23090-01. By meeting quarterly, the Safety Committee will have an opportunity to quickly identify any upcoming physical inventory.

In addition, on April 30, 2024, the RSO created a new outlook calendar to schedule important events and tasks related to the TFHRC Radiation Safety program. See Exhibit 25. This calendar includes Safety Committee meetings, due dates for completion of documentation of the annual Portable Gauge Audit Checklist, and due dates for calibration of instruments used for quantitative radiation measurements. Each task has a calendar event with an alert notification to mitigate any potential delays within the program's schedule. The RSO also shared the calendar with the members of the TNSC. Exhibit 25 shows an example of different events scheduled in the Nuclear Safety Calendar for the time period of December 2024 into January 2025. The RSO will add events required to occur quarterly, biennially, and annually to the calendar. See Exhibit 25. The maintenance of the calendar and the coordination of the committee activities falls within the responsibilities of [REDACTED], whose performance plan includes maintenance of the radiation protection program. See Exhibit 1 page 7.

(4) the date when full compliance was or will be achieved.

FHWA completed a portable gauge audit on February 2, 2024. See exhibit 10.

III. Apparent violation #3 – failure to conduct a physical inventory every six months, or at other intervals approved by the NRC, to account for all sources and/or devices received and possessed under the license in accordance with License Condition 15 of your NRC License;

NRC inspection report states:

from August 2, 2021, through January 31, 2024, the licensee did not conduct a physical inventory every six months, or at other intervals approved by the U.S. Nuclear Regulatory Commission, to account for all sources and/or devices received and possessed under the license. Specifically, the licensee did not maintain records of physical inventories to account for all sources and/or devices received and possessed under the license and was not able to demonstrate that physical inventories were being conducted at a frequency of six months.

FHWA Response:

(1) the reason for the apparent violation, or, if contested, the basis for disputing the apparent violation;

Similar to the cause of apparent violation #1 discussed above, FHWA determined that the majority of the time period when this apparent violation occurred aligned with the resignation of the employee responsible for carrying out the duties of the RSO in September 2022, the length of time taken to fill the resultant staff vacancy, and during the vacancy FHWA staff carrying out the radiation safety program without receiving certified training and familiarity with all the NRC regulations and conditions of FHWA's NRC materials license No. 45-23090-01.

In addition to the employee position vacancy causing this apparent violation, and as noted in the inspection report, FHWA has identified as another cause of the apparent violation, a lack of accurate record keeping. FHWA did not locate documentation showing a physical inventory was conducted every six months from August 2021 through January 2024, however, FHWA did locate evidence that the two gauges that are subject to the physical inventory under FHWA's NRC license were calibrated annually from 2022 through 2024. See exhibits 17-22. In order to have the devices calibrated, FHWA employees had to locate the devices, ship them to the calibration company, pay for the calibration services, and receive them back at FHWA's facility each year. This calibration process shows that FHWA tracked the physical devices at least annually and the RSO who resigned in September 2022 as well as the FHWA employees carrying out radiation safety program responsibilities during the staff vacancy from September 2022 to September 2023 may have conducted even more frequent physical inventories, but FHWA did not locate records showing that physical inventory process occurred.

(2) the corrective steps that have been taken and the results achieved;

FHWA conducted a physical inventory and documented the inventory on January 24, 2024. See Exhibit 10 page E3 and Exhibit 16.

(3) the corrective steps that will be taken to avoid further violations;

As discussed in response to apparent violation #1 above, FHWA is ensuring that no further violations occur by assigning a trained RSO to carry out the responsibilities of the Radiation Safety Program and by establishing a Safety Committee that will meet on a quarterly basis to review FHWA's compliance with the operations and procedures listed in the TFHRC Radiation Safety Program and the FHWA's compliance with the conditions contained in the NRC materials license 45-23090-01. By meeting quarterly, the Safety Committee will have an opportunity to quickly identify any upcoming physical inventory.

In addition, on April 30, 2024, the RSO created a new outlook calendar to schedule important events and tasks related to the TFHRC Radiation Safety program. See exhibit 25. This calendar includes Safety Committee meetings, due dates for completion of documentation of the annual Portable Gauge Audit Checklist, and due dates for calibration of instruments used for quantitative radiation measurements. Each task has a calendar event with an alert notification to mitigate any potential delays within the program's schedule. The RSO also shared the calendar with the members of the TNSC. Exhibit 25 shows an example of different events scheduled in the Nuclear Safety Calendar for the time period of December 2024 into January 2025. The RSO

will add events to this calendar that are required to occur quarterly, biennially, and annually. See Exhibit 25. The RSO will maintain records in accordance with the NRC license and NRC regulations.

(4) the date when full compliance was or will be achieved.

FHWA conducted a physical inventory and documented the inventory on January 24, 2024. See Exhibit 10 page E3 and Exhibit 16.

IV. Apparent violation #4 – failure to ensure that instruments and equipment used for quantitative radiation measurements are calibrated periodically for the radiation measured in accordance with 10 CFR 20.1501(c).

NRC inspection report states: from September 2021 until February 27, 2024, (a period exceeding one year) the licensee failed to ensure that instruments and equipment used for quantitative radiation measurements were calibrated periodically for the radiation measured. Specifically, the records indicated that the last calibration occurred in September 2021 with a calibration due date of September 2022 and no other calibration was completed until the time of the inspection on February 27, 2024.

FHWA Response:

(1) the reason for the apparent violation, or, if contested, the basis for disputing the apparent violation;

As discussed in response to apparent violation #1 above, FHWA identified the cause of the apparent violation as a function of the resignation of the employee responsible for carrying out the duties of the RSO in September 2022, the length of time taken to fill the resultant staff vacancy, and during the vacancy FHWA staff carrying out the radiation safety program without sufficient training and familiarity with all the NRC regulations and conditions of FHWA's NRC materials license No. 45-23090-01.

FHWA determined that a calibration of the device occurred in July 2021 and therefore periodic calibration would not be scheduled to occur until July 2022. See exhibit 23. There is no evidence of calibration of the device in 2022 or 2023. However, this timeframe is consistent with the resignation of the RSO and the extended time required to backfill and train the employee taking over RSO responsibilities.

(2) the corrective steps that have been taken and the results achieved;

The RSO contacted NIST to calibrate the survey meter on March 1, 2024. See exhibit 26. NIST performed the calibration of the survey meter on April, 10, 2024. See exhibit 27.

(3) the corrective steps that will be taken to avoid further violations;

As discussed in response to apparent violation #1 above, FHWA is ensuring that no further violations occur by assigning a trained RSO to carry out the responsibilities of the Radiation

Safety Program and by establishing a Safety Committee that will meet on a quarterly basis to review FHWA's compliance with the operations and procedures listed in the TFHRC Radiation Safety Program and the FHWA's compliance with the conditions contained in the NRC materials license 45-23090-01. By meeting quarterly, the Safety Committee will have an opportunity to quickly identify any upcoming calibration of instruments used for quantitative radiation measurements and ensure calibration is completed.

In addition, on April 30, 2024, the RSO created a new outlook calendar to schedule important events and tasks related to the TFHRC Radiation Safety program. See exhibit 25. This calendar includes Safety Committee meetings, due dates for completion of documentation of the annual Portable Gauge Audit Checklist, and due dates for calibration of instruments used for quantitative radiation measurements. Each task has a calendar event with an alert notification to mitigate any potential delays within the program's schedule. The RSO also shared the calendar with the members of the TNSC. Exhibit 25 shows an example of different events scheduled in the Nuclear Safety Calendar for the time period of December 2024 into January 2025. The RSO will add events required to occur quarterly, biennially, and annually to the calendar. See Exhibit 25.

(4) the date when full compliance was or will be achieved.

FHWA received passing calibration test results from NIST of the survey meter on April, 10, 2024. See exhibit 27.

V. Conclusion

No civil penalty should be assessed in this matter in accordance with NRC Enforcement policy. Prior to the inspection, FHWA self-identified the underlying violation and was working to correct it through appointment of a new trained RSO. FHWA has promptly taken comprehensive corrective action to address these apparent violations identified by NRC during its inspection. FHWA now also has a long-term plan to ensure that it maintains a qualified and trained FHWA employee in the position of Radiation Safety Officer and compliance with NRC regulations and conditions of FHWA's NRC materials license No. 45-23090-01.

FHWA has not identified any escalated enforcement actions within the last three NRC inspections. See Exhibit 7, 8, and 9. As a result, FHWA requests that based on prompt and comprehensive corrective actions taken by FHWA to ensure future compliance, that no civil penalty be proposed in accordance with the civil penalty assessment process in Section 2.3.4 of the Enforcement Policy.

Sincerely,

JEAN ANTOINE
NEHME

 Digitally signed by JEAN ANTOINE
NEHME
Date: 2024.07.01 11:49:11 -04'00'

Jean A. Nehme, Ph.D., P.E.
Director, Office of Infrastructure R&D

Enclosure:
FHWA Exhibits 1 to 27

cc w/ Enclosure:
Michael Wutkowski, Health Physicist
Jose F. Munoz Campos, Ph.D., FHWA TFHRC Radiation Safety Officer