

Note: Received by DNMS (Katanic) on April 1, 2021; the date of the attached document says April 1, 2020 but should be April 1, 2021

From: [John Longley](#)
To: [Katanic, Janine](#)
Cc: [Donna Lybecker](#); [Jon Stoner](#); [RADCompliance](#)
Subject: [External_Sender] 2nd Effectiveness Review
Date: Thursday, April 1, 2021 9:08:36 AM
Attachments: [2nd Effectiveness 04-01-21.docx](#)

Dr. Katanic,

I have attached the second effectiveness review as required in Confirmatory Order (EA-18-153). Contact me if you have questions or need more information.

Thank you.

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2nd Effectiveness Review
Idaho State University
Confirmatory Order EA-18-153
April 1, 2020

Introduction

ISU performed the second assessment to evaluate the status of corrective actions specified in the corrective action plan completed in March 2020. The assessment evaluated all documentation related to corrective actions and was conducted by a team of three members John Longley, RSO, Jon Stoner, Chairman of the RSC, and Steve Snay, independent reviewer from Rad Compliance LLC. Dr. Snay did not travel to ISU to minimize potential exposure to COVID-19. Results of the assessment are documented in the following sections and follow the outline of the corrective action plan. The discussion for Items that were fully complete in the 1st effectiveness review was deleted.

This document is organized to follow the outline of the corrective action plan. It is divided into three sections, Programmatic Corrections, violations from enforcement action EA-18-153, and improvements recommended by the independent assessment. Status is given for each item as complete, in progress or complete (routine) which indicates the program change is complete but implementation is part of the routine program. Items that were fully complete in the 1st effectiveness review were not evaluated further. Complete (routine) items will continue to be evaluated. The table at the end of the document is the milestone summary from the corrective action plan updated with current status. For routine operations, actions completed between September 2020 and February 2021 are discussed.

1. Programmatic Corrections

1.1. Management Commitment

Status: Complete

1.2 Insufficient Staffing

Hiring of the radiation safety/industrial hygiene specialist for the CAES facility has been delayed because of COVID-19. Funding for the position was approved by the State of Idaho and initial interviews were conducted in February, 2021. Final interviews and completion of an employment offer are expected in March 2021.

Status: in progress

1.3. Inadequate Program Documents and Procedures

In addition to the documents listed as revised in the corrective action plan, the Radiation Safety Department has updated the following procedures and posted them on the Radiation Safety Website.

Documents reviewed:

- RS-04, Sealed Source Leak Test, 1/4/21 On website
- RS-05, Nuclear Materials Management and Safeguards System (NMMSS) Reporting, 1/4/21 On website

- Rs-22, Radiation Safety Committee Meeting Minutes, 12/3/20 On website
- RS-03, Radiological Surveys, 9/16/20 On website
- RS-13, 100 mrem Report, 1/7/21 (includes NESHAPs) On website
- RS-11, Internal Dosimetry, 10/27/20 On website
- RS-15, Operational Procedures for the Shepherd Irradiators, 1/4/21 On website
- RS-20, Radiation Use Application, 1/7/21 On website

Status: Complete

1.4. Inadequate Training

Radiation Safety Department personnel conducted training for authorized users in February 2020 and it was repeated on in the first week of March 2021. In addition, the Radiations Safety Department developed a procedure to formalize qualification for technicians in the department, RS-21, Radiation Safety Technician Qualifications. Implementation of this procedure will continue in fiscal year 2021. ISU completed update of the online radiation safety program and the refresher safety program. The refresher training is a subset of the initial training. Both courses are implemented through Moodle to enhance the testing process.

Documents reviewed:

- Moodle Initial Radiation Safety Training electronic
- Qualification Cards Work Book

Status: In progress

1.5. Improve Tracking of Radioactive Material

ISU completed the physical inventory of all radioactive materials and nuclear materials on the broad scope and isotope production licenses in December 2020. Nuclear materials on the reactor and SNM licenses were inventoried in September 2020. Nuclear materials on the Broad Scope License were inventoried in September 2020 and December 2020. Future nuclear material inventories will be completed in September and March to comply with the 30 day window for completing the NMMSS inventory report. The NSTS inventory was completed in January 2021.

Two items (fission chamber and can with fission foils) were inadvertently omitted from the SNM nuclear material inventory in September 2020 but were included in the June 2020 inventory. The RSO directed the reactor supervisor to include these items in the March inventory, and both items were included in the inventory conducted on March 15, 2021.

Documents reviewed:

- December 2020 radioactive material inventory reports
- September 2020 and December 2020 nuclear material inventory reports
- January 2021 NSTS inventory documentation.

Status: Complete (routine)

1.6. Internal Assessments

The Radiations Safety Officer and Radiation Safety Committee Chairman are scheduled to complete their annual assessments in April 2021. This item will be evaluated in the 3rd effectiveness review.

Documents reviewed:

- None.

Status: Complete (routine)

1.7. Scheduling and Tracking of Radiation Safety Tasks

The Radiation Safety Department follows the detailed monthly schedule. There have been some missed items because of COVID 19 disruptions. In addition, the Radiation Safety Department needs to improve scheduling for awareness training for custodial, public safety, and shipping and receiving personnel.

Documents reviewed:

- Monthly schedules (Sept. 2020, Oct. 2020, Nov. 2020, Dec. 2020, Jan. 2021, and Feb. 2021).

Status: Complete (routine)

2. Specific Violations September 2018 Inspection

2.1. Level III Violation

Status: Complete

2.2. Labeling Containers

ISU implemented a query system from the HPAssist database to determine radionuclide inventory and radiation safety technicians perform dose rate surveys to complete the forms to give complete information required by 10 CFR 20.

In evaluating this section, it was evident that cabinet labels had not been updated after removal or addition of material. The RSO notified the Radiation Safety Department to request new postings when materials are added to or removed from cabinets and to verify this as part of the laboratory inspection process on Forms RPR 50A and RPR 50B. I

Documents reviewed:

- Photographs of sample containers from EHS Vault and IAC.

Status: Complete (routine)

2.3. Radioactive Material Inventory not implemented for each item

ISU completed radioactive material inventory in accordance with procedure EHS-09-16, Rev2, Radioactive Material Inventory. See section 1.5 above.

Documents reviewed:

- September, December, and January inventory documentation from 1.5 above.

Status: Complete (routine)

2.4. Contamination Area Accessible without EH&S Supervision

Status: Complete

2.5. Decommissioned Lab with No Postings and Had No Surveys

ISU has not completed any additional decommissioning surveys between September 2020 and March 2021. Finally ISU maintains a list of facilities decommissioned with dates of completion along with facilities currently in use that will eventually require decommissioning as required in 10 CFR 30.

Documents reviewed:

- Decommissioning list.

Status: Complete (routine)

2.6. Transfers to INL Not Authorized by RSO

Requirements for authorization for transfer of radioactive material are specified in Section 9.2 of the Radiation Safety Manual and in Procedure RS-08, Transport of Radioactive Material, and require written authorization from the RSO on Form RPR-14. This process is fully implemented for transfers and shipments.

Documents reviewed:

- Procedure RS-08 and Form RPR-14 (On website)
- RPR-14 Forms September 2020 - February 2021

Status: Complete (routine)

2.7. Postings for Radioactive Material Areas

Status: Complete

2.8. No Posting of Contamination Control Area

Status: Complete

2.9. Area Surveys and Contamination Surveys Not Conducted at Appropriate Frequency

ISU updated the survey frequency requirements in the Radiation Safety Manual. Immediate work area surveys are required at the end of the day after all use of dispersible radioactive material. Formal map surveys are performed by the authorized user at the frequency specified in the user permit. Survey frequencies are verified in the laboratory inspections.

Documents reviewed:

- Laboratory Inspection Forms September 2020 through February 2021.
- Permit examples.

Status: Complete (routine)

2.10. Testing of Fume Hoods Not Conducted Annually

ISU added a monthly check to the master schedule to verify upcoming fume hood tests and developed an independent list of fume hoods used for radioactive material with test dates.

Documents reviewed:

- Monthly detail schedule (See section 1.7)
- Fume hood list
- Fume hood test forms

Status: Complete (routine)

2.11. Radiation Safety Audit Did Not Audit the Program Content and Implementation

ISU developed procedure EHS-19-01, Rev. 0, Radiation Safety Program Oversight, to guide the annual assessment of the Radiation Safety Program in accordance with the guidance of NUREG 1556. The RSO and Radiation Safety Committee will complete the annual review of the radiation safety program in April 2021. The inspection reports will be included in the 3rd effectiveness review.

Status: Complete (routine)

3. Recommendations from Independent Assessment

3.1. All Program Commitments from Licenses.

ISU submitted a renewal application for the broad scope license in January 2020 and two additional submissions to address questions raised by the NRC. These form the complete history for the renewed broad scope license in Amendment 39.

Documents reviewed:

- None

Status: Complete

3.2. Lyris Subscription Service

Status: Complete

3.3. Remove Radiation Workers

ISU added verification of radiation workers on the monthly schedule for May to coincide with the end of the academic year. Each May, the Radiation Safety Department will contact all authorized users to determine which radiation workers should be maintained. The second reduction in radiation workers will be conducted in May 2021 and will be evaluated in the 3rd effectiveness review.

Documents reviewed:

- Monthly schedule in May of each year. See 1.7.

Status: Complete (routine)

3.4. Radiation Safety Training

ISU updated the radiation safety training and refresher training and moved it to Moodle to correct the testing issue. Implementation of the new training began in January 2021. The Radiation Safety Department is working on procedures to track training and perform follow up notification for the new system.

Documents reviewed:

- Moodle training on-line.
- Moodle grade report

Status: Complete (routine)

3.5. Credentialing Document

ISU developed procedure, RS-21, Rev 0, Radiation Safety Technician Qualifications, to formalize the qualification of technicians in the ISU Radiation Safety Department and developed a

workbook to track the process for each student technician in the department. ISU will work to complete the specific qualification process for each student technician in Idaho fiscal year 2021.

Documents reviewed:

- Qualification Cards Work Book See 1.4

Status: In progress

3.6. ALI Ratio

Status: Complete

3.7. Survey Record Forms

ISU developed Procedure RS-03, Radiological Surveys. The revised procedure provides separate forms for confirmatory surveys, user formal map surveys, release surveys, and transportation surveys. Program numbers and instrument details are included on the survey forms where applicable.

- Example surveys.
- Procedure RS-03 (on website)

Status: Complete (routine)

3.8. Reduction in Dosimetry

Status: Complete

3.9. Dosimetry Evaluation

Status: Complete

3.10. Dosimetry Reporting Level

Status: Complete

3.11. Distribution of Reg. Guide 8.13

Status: Complete

3.12. Quarterly Review of Dosimetry

Dosimetry results are reviewed each quarter by a Radiation Safety Department staff member and reported to the Radiation Safety Committee for evaluation.

Documents reviewed:

- Examples of dose summary from 3rd and 4th quarter 2020 RSC meetings.

Status: Complete (routine)

3.13. Dosimetry Storage

Status: Complete

3.14. Radioactive Waste Procedures

Status: Complete

3.15. Fume Hood Checks

The Radiation Safety Department maintains a list of fume hoods used for radiological work. Fume hood verification status is assessed monthly and included in the Radiation Safety Department master schedule. In addition, fume hood calibration dates are verified during routine laboratory inspections.

Documents reviewed:

- Monthly schedule. See 1.7.
- List of rad hoods. See 2.10.
- Example inspection forms RPR 50B See 2.9.

Status: Complete (routine)

3.16. Residual Contamination List

ISU created a list for potential residual radioactive material remaining after individual laboratories are decommissioned.

Documents reviewed:

- Spreadsheet. See 2.5

Status: Complete (routine)

3.17. Reactor Access List

ISU reviewed the access list for personnel with unescorted access to the reactor and removed all personnel who did not need access. Badge swipe readers have been installed and are fully

operational. Personnel on the access list have access through the badge swipe readers and will be removed in the database when access is no longer necessary. Key control will no longer be an issue. ISU will review the access list at the end of each academic year to remove students who have graduated and left the program.

- Former people removed. Badge swipe access complete.

Status: Complete (routine).

3.18. T&R Procedure

Status: Complete

Completion Dates for Corrective Action Items

Action	Expected Completion Date*	Status
Hiring		
Hire Radiation Safety Specialist for Pocatello	April 2020	Complete
Radiation safety/industrial hygiene specialist for CAES	April 2021	In progress
Two half-time safety interns for CAES.	May 31, 2020	Complete
Update Procedures		
RS-02 Dosimetry	June 2020	Complete
RS-04 Sealed Source Leak Tests	December 2020	Complete
RS-05 NMMSS Report	December 2020	Complete
RSC Meeting Minutes	December 2020	Complete
RS-03 Radiological Surveys	September 2020	Complete
RS-06 Radioactive Material Laboratory Inspections	June 2020	Complete
RS-09 Radioactive Waste Management	June 2020	Complete
RS-13 100 mrem Report (includes NESHAPs)	December 2020	Complete
RS-11 Internal Dosimetry	September 2020	Complete
RS-15 Operational Procedure for Shepherd Irradiators	December 2020	Complete
RS-20 Radiation Use Application	December 2020	Complete
RS-21 Radiation Safety Technician Qualifications	June 2020 Procedure	Complete
Corrections from Independent Assessment		
Update On-line training and refresher training	December 2020	Complete
Update list of laboratory decommissioning on a two year basis	June 2020	Complete
Contaminated equipment forms CAES	March 2020	Complete
RSO Verify survey frequency against permit requirements	Start March 2020	Complete
Create better storage area for dosimeters	June 2020	Complete
Create written procedure to approve or deny T&R status	May 31, 2020	Complete

*Dates are approval by the Radiation Safety Committee