



UNITED STATES
NUCLEAR REGULATORY COMMISSION
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Research, State, Tribal, Compliance, Administration,
and Human Capital Programs
Office of the Executive Director for Operations

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SUBJECT: INTEGRATED MATERIALS PERFORMANCE EVALUATION
PROGRAM REVIEW OF WASHINGTON

This memorandum transmits to the Management Review Board (MRB) a proposed final report (Enclosure 1) documenting the Integrated Materials Performance Evaluation Program (IMPEP) review of Washington. The review was conducted by a team of U.S. Nuclear Regulatory Commission (NRC) and Agreement State technical staff during the period of April 30 – May 4, 2018. The team's preliminary findings were discussed with Washington on the last day of the review. Additionally, a followup discussion of the preliminary results was held with the Radiation Protection Director on May 11, 2018. The team issued a draft report to Washington on June 11, 2018, for factual comment. Washington responded to the findings and conclusions of the review by letter from Mikel Elsen, the Director for the Office of Radiation Protection, dated July 12, 2018 (Enclosure 2).

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Overall, the team is recommending that Washington's performance be found satisfactory for seven of the nine performance indicators reviewed and satisfactory, but needs improvement, for Technical Quality of Licensing Actions and Compatibility Requirements. Accordingly, the team recommends that the Washington Agreement State Program be found adequate to protect public health and safety and compatible with the NRC's program. The team recommends that the next IMPEP review take place in approximately 4 years with a periodic meeting in approximately 1 year.

The MRB meeting to consider the Washington report is scheduled for **Tuesday, July 24, 2018, from 1:00 p.m. to 4:00 p.m. ET**. In accordance with Management Directive 5.6, the meeting is open to the public. The agenda for the meeting is enclosed (Enclosure 3).

Enclosures:

1. Washington Proposed Final Report
2. Washington Response to Draft IMPEP Report
3. Agenda for MRB Meeting

cc: Mikel J. Elsen, Director
Office of Radiation Protection
Department of Health

Rusty Lundberg, UT
Organization of Agreement States
Liaison to the MRB



INTEGRATED MATERIALS PERFORMANCE EVALUATION PROGRAM
REVIEW OF THE WASHINGTON AGREEMENT STATE PROGRAM

April 30 – May 4, 2018

PROPOSED FINAL REPORT

EXECUTIVE SUMMARY

This report presents the results of the Integrated Materials Performance Evaluation Program (IMPEP) review of the Washington Agreement State Program. The review was conducted during the period of April 30 – May 4, 2018, by a team comprised of technical staff members from the U.S. Nuclear Regulatory Commission (NRC) and the States of Colorado, New York, and Texas.

Based on the results of this review, Washington's performance was found satisfactory for seven indicators: Technical Staffing and Training, Status of Materials Inspection Program, Technical Quality of Inspections, Technical Quality of Incident and Allegation Activities, Sealed Source and Device Evaluation Program, Low-Level Radioactive Waste Disposal Program, and Uranium Recovery Program. Two indicators were found satisfactory, but needs improvement: Technical Quality of Licensing Actions and Compatibility Requirements.

The team made two recommendations (see Section 5.0) and determined that the recommendation from the 2013 IMPEP review should be closed (see Section 2.0).

The NRC's Management Directive 5.6, "Integrated Materials Performance Evaluation Program (IMPEP)" states "if the Management Review Board (MRB) finds a State's program is satisfactory but needs improvement for one or two performance indicators and is satisfactory for all remaining performance indicators, the MRB should consider whether the State's program is adequate or adequate but needs improvement." The team discussed whether a finding of adequate to protect public health and safety, but needs improvement, was warranted based on the less than satisfactory finding for the indicator Technical Quality of Licensing Actions (the less than satisfactory rating for the indicator Compatibility Requirements is considered when determining whether a program is compatible or not compatible). The team determined that the weaknesses identified in the Technical Quality of Licensing Actions indicator did not warrant an overall finding of adequate to protect public health and safety, but needs improvement. Instead, the team is recommending a shortened timeframe for the next periodic meeting. Therefore, the team recommends that the Washington Agreement State Program be found adequate to protect public health and safety and compatible with the NRC's program. The team recommends that the next IMPEP review take place in approximately four years with a periodic meeting in approximately one year.

1.0 INTRODUCTION

This report presents the results of the review of the Washington Agreement State Program. The review was conducted during the period of April 30 – May 4, 2018, by a team comprised of technical staff members from the U.S. Nuclear Regulatory Commission (NRC) and the States of Colorado, New York, and Texas. Team members are identified in Appendix A. The review was conducted in accordance with the “Agreement State Program Policy Statement,” published in the *Federal Register* on October 18, 2017, and NRC Management Directive (MD) 5.6, “Integrated Materials Performance Evaluation Program (IMPEP),” dated February 26, 2004. Preliminary results of the review, which covered the period of May 11, 2013, to May 4, 2018, were discussed with Washington managers on the last day of the review. Additionally, a followup discussion of the preliminary results was held with the Radiation Protection Director on May 11, 2018.

In preparation for the review, a questionnaire addressing the common performance indicators and applicable non-common performance indicators was sent to Washington on November 14, 2017. Washington provided its response to the questionnaire on April 13, 2018. A copy of the questionnaire response is available in the NRC’s Agencywide Documents Access and Management System (ADAMS) using the Accession Number ML18106A826.

The Washington Agreement State Program is administered by the Radioactive Materials and Waste Management Sections which are located in the Office of Radiation Protection (the Office). The Office is located within the Environmental Public Health Division, which is in the Washington State Department of Health (the Department). Organization charts for Washington are available in ADAMS (Accession Number ML18106A760).

At the time of the review, the Washington Agreement State Program regulated 334 specific radioactive materials, radioactive waste processing, low-level radioactive waste, and uranium recovery licenses authorizing possession and use of radioactive materials. The review focused on the Washington Agreement State Program as it is carried out under the Section 274b. (of the Atomic Energy Act of 1954, as amended) Agreement between the NRC and the State of Washington.

The team evaluated the information gathered against the established criteria for each common and the applicable non-common performance indicator and made a preliminary assessment of the State of Washington’s performance.

2.0 PREVIOUS IMPEP REVIEW AND STATUS OF RECOMMENDATIONS

The previous IMPEP review concluded on May 10, 2013. The final report is available in ADAMS (Accession Number ML13212A225). The results of the review and the status of the one recommendation are as follows:

Technical Staffing and Training: Satisfactory
Recommendation: None

Status of Materials Inspection Program: Satisfactory
Recommendation: None

Technical Quality of Inspections: Satisfactory
Recommendation: None

Technical Quality of Licensing Actions: Satisfactory
Recommendation: None

Technical Quality of Incident and Allegation Activities: Satisfactory
Recommendation: None

Compatibility Requirements: Satisfactory
Recommendation: None

Sealed Source and Device (SS&D) Evaluation Program: Satisfactory
Recommendation: The team recommends that Washington implement a process to ensure that radioactive material incidents involving sealed sources and devices registered by the State are periodically and independently assessed by the State for generic issues and that any potential generic issues are communicated to licensees and fellow regulators in a timely manner.

Status: The Radioactive Materials Section implemented a process to ensure that radioactive material incidents involving sealed sources and devices registered by the State of Washington are periodically and independently assessed for generic issues and that any potential generic issues are communicated to licensees and fellow regulators in a timely manner. The Radioactive Materials Section performs a documented semi-annual review of the Nuclear Materials Events Database (NMED) to identify problems with any SS&D registered by the Department. No generic issues were identified by the Radioactive Materials Section during the review period. The team determined that this recommendation should be closed.

Low-level Radioactive Waste Program: Satisfactory
Recommendation: None

Uranium Recovery Program: Satisfactory
Recommendation: None

Overall finding: Adequate to protect public health and safety and compatible with the NRC's program.

3.0 COMMON PERFORMANCE INDICATORS

Five common performance indicators are used to review the NRC regional and Agreement State radioactive materials programs. These indicators are: (1) Technical Staffing and Training; (2) Status of Materials Inspection Program; (3) Technical Quality of Inspections; (4) Technical Quality of Licensing Actions; and (5) Technical Quality of Incident and Allegation Activities.

3.1 Technical Staffing and Training

The ability to conduct effective licensing and inspection programs is largely dependent on having a sufficient number of experienced, knowledgeable, well-trained technical personnel. Under certain conditions, staff turnover could have an adverse effect on the implementation of these programs and could affect public health and safety. Apparent trends in staffing must be explored. Review of staffing also requires consideration and evaluation of the levels of training and qualification. The evaluation standard measures the overall quality of training available to, and taken by, materials program personnel.

a. Scope

The team used the guidance in State Agreements procedure SA-103, "Reviewing the Common Performance Indicator: Technical Staffing and Training," and evaluated Washington's performance with respect to the following performance indicator objectives:

- A well-conceived and balanced staffing strategy has been implemented throughout the review period.
- Agreement State training and qualification program is equivalent to NRC Inspection Manual Chapter (IMC) 1248, "Formal Qualifications Program for Federal and State Material and Environmental Management Programs."
- Qualification criteria for new technical staff are established and are followed or qualification criteria will be established if new staff members are hired.
- Any vacancies, especially senior-level positions, are filled in a timely manner.
- There is a balance in staffing of the licensing and inspection programs.
- Management is committed to training and staff qualification.
- Individuals performing materials licensing and inspection activities are adequately qualified and trained to perform their duties.
- License reviewers and inspectors are trained and qualified in a reasonable period of time.

b. Discussion

The Radioactive Materials Section is comprised of 11 positions which includes the Section Manager; three Program Leads (medical, industrial, and laboratory); five license reviewers/ inspectors (three of whom are also qualified to perform sealed source and device evaluations); a Database Manager; and an Administrative Assistant which equals 11 full time equivalents (FTE) for the radioactive materials program when fully staffed. At the time of the review, there were three vacancies: the Section Manager, the Database Manager, and a license reviewer/inspector. During the review period, eight staff members left the Radioactive Materials Section and seven staff members were hired. Four of the eight staff that left retired and the other four staff left to pursue other opportunities. The Office ensured that vacancies at the management and program lead positions were temporarily filled while the Office went through the hiring process. All other staff positions were vacant for three to four months before being filled, which is the length of time it takes the Radioactive Materials Section to complete its hiring process.

The Radioactive Materials Section has a training and qualification program, but the team determined that it is not compatible with the NRC's IMC 1248. The latest revision to Washington's training and qualification manual occurred in 2003; however, the Radioactive Materials Section had been working on additional revisions that were not finalized during the review period. During Washington's last IMPEP review, the NRC's IMC 1248 was issued via State and Tribal Communication Letter FSME-13-043, "Publication of Inspection Manual Chapter 1248, Qualification Programs for Federal and State Materials and Environmental Management Programs." The Radioactive Materials Section did not adopt a training program compatible with IMC 1248 within the required six months of the date of the letter.

The team determined that the lack of a compatible training program did not degrade the performance of the Radioactive Materials Section during the review period. The team determined that the inspectors who were qualified during the review period performed thorough and complete inspections and demonstrated their knowledge of the licensee and the associated requirements (see Section 3.3). Additionally, the team determined that licensing actions were consistent, complete, and of sound technical quality in most of the cases reviewed. As a result, the team concluded that the items of concern addressed in Section 3.4, Technical Quality of Licensing Actions, were not a result of an incompatible training and qualification manual. Rather, the team determined the issues with the Radioactive Materials Section's training and qualification program to be a matter of compatibility. This matter is discussed further in Section 4.1, Compatibility Requirements.

c. Evaluation

The team determined that, except as noted below, during the review period, Washington met the performance indicator objectives listed in Section 3.1.a.

- The Agreement State's training and qualification program is not equivalent to the NRC's IMC 1248.

As noted above, the Radioactive Materials Section did not have a training and qualification program that was equivalent to the NRC's IMC 1248 during the review period. The team determined that no performance concerns were identified in Section 3.3, Technical Quality of Inspections, and that the lack of a compatible training program did not lead to the performance issues identified in Section 3.4, Technical Quality of Licensing Actions. Therefore, the team considers this to be a matter of compatibility as discussed further in Section 4.1, Compatibility Requirements.

Based on the IMPEP evaluation criteria in MD 5.6, the team recommends that Washington's performance with respect to the indicator, Technical Staffing and Training, be found satisfactory.

d. MRB Decision

The final report will present the MRB's conclusion regarding this indicator.

3.2 Status of Materials Inspection Program

Periodic inspections of licensed operations are essential to ensure that activities are being conducted in compliance with regulatory requirements and consistent with good safety practices. The frequency of inspections is specified in IMC 2800, "Materials Inspection Program," and is dependent on the amount and kind of material, the type of operation licensed, and the results of previous inspections. There must be a capability for maintaining and retrieving statistical data on the status of the inspection program.

a. Scope

The team used the guidance in State Agreements procedure SA-101, "Reviewing the Common Performance Indicator: Status of the Materials Inspection Program," and evaluated Washington's performance with respect to the following performance indicator objectives:

- Initial inspections and inspections of Priority 1, 2, and 3 licensees are performed at the frequency prescribed in IMC 2800.
- Candidate licensees working under reciprocity are inspected in accordance with the criteria prescribed in IMC 1220, "Processing of NRC Form 241, 'Report of Proposed Activities in Non-Agreement States, Areas of Exclusive Federal Jurisdiction, and Offshore Waters,' and Inspection of Agreement State Licensees Operating Under 10 CFR 150.20."
- Deviations from inspection schedules are normally coordinated between technical staff and management.
- There is a plan to perform any overdue inspections and reschedule any missed or deferred inspections; or a basis has been established for not performing any overdue inspections or rescheduling any missed or deferred inspections.
- Inspection findings are communicated to licensees in a timely manner (30 calendar days, or 45 days for a team inspection, as specified in IMC 0610, "Nuclear Material Safety and Safeguards Inspection Reports").

b. Discussion

The Radioactive Materials Section performed 425 Priority 1, 2, 3, and initial inspections during the review period. The Radioactive Materials Section conducted no Priority 1, 2, 3, or initial inspections overdue during the review period. All initial inspections of new licenses were performed within 12 months of license issuance.

The Radioactive Materials Section's inspection frequencies are the same as or more frequent for similar license types in the NRC's IMC 2800. A sampling of 36 inspection reports indicated that all inspection findings were communicated to the licensees within 30 days after the inspection exit.

In each year of the review period, the Radioactive Materials Section performed greater than 20 percent of candidate reciprocity inspections except for calendar year 2017, when no inspections of candidate reciprocity licensees were performed. The team determined

that this was due to a change in the Radioactive Materials Section management that occurred in 2017 and a lack of management oversight of the reciprocity program. The Radioactive Materials Section management committed to tracking the percent of completed reciprocity inspections in their quarterly management reports to prevent a recurrence of the issue.

c. Evaluation

The team determined that, except as noted below, during the review period Washington met the performance indicator objectives listed in Section 3.2.a.

- Candidate licensees working under reciprocity were inspected each calendar year in accordance with the criteria prescribed in the NRC's IMC 1220, except for calendar year 2017.

As detailed above, the Radioactive Materials Section performed no inspections of reciprocity candidate licensees in calendar year 2017 due to a change in the Radioactive Materials Section management, as well as a lack of management oversight of the reciprocity program. The Radioactive Materials Section management committed to taking steps to prevent a recurrence of the issue.

Based on the IMPEP evaluation criteria in MD 5.6, the team recommends that Washington's performance with respect to the indicator, Status of Materials Inspection Program, be found satisfactory.

d. MRB Decision

The final report will present the MRB's conclusion regarding this indicator.

3.3 Technical Quality of Inspections

Inspections, both routine and reactive, provide assurance that licensee activities are carried out in a safe and secure manner. Accompaniments of inspectors performing inspections, and the critical evaluation of inspection records, are used to assess the technical quality of an Agreement State's inspection program.

a. Scope

The team used the guidance in State Agreements procedure SA-102, "Reviewing the Common Performance Indicator: Technical Quality of Inspections," and evaluated Washington's performance with respect to the following performance indicator objectives:

- Inspections of licensed activities focus on health, safety, and security.
- Inspection findings are well-founded and properly documented in reports.
- Management promptly reviews inspection results.

- Procedures are in place and used to help identify root causes and poor licensee performance.
- Inspections address previously identified open items and violations.
- Inspection findings lead to appropriate and prompt regulatory action.
- Supervisors, or senior staff as appropriate, conduct annual accompaniments of each inspector to assess performance and assure consistent application of inspection policies.
- For programs with separate licensing and inspection staffs, procedures are established and followed to provide feedback information to license reviewers.
- Inspection guides are consistent with NRC guidance.
- An adequate supply of calibrated survey instruments is available to support the inspection program.

b. Discussion

The team reviewed inspection reports and enforcement documentation, and interviewed inspectors involved in 36 materials inspections conducted during the review period. The casework reviewed included inspections that covered medical, industrial, commercial, academic, research, and service provider licenses for initial, routine, special, and reciprocity inspections. The inspection report sample represented work from 12 current and former Radioactive Materials Section inspectors.

The team determined that inspection findings were well-founded, appropriately documented, and that inspection reports were complete. The Radioactive Materials Section has a quality assurance policy that states that management will review 10 percent of inspection reports. This differs from the NRC's policy of having each inspection report reviewed by management as stated in the NRC's IMC 0610, "Nuclear Material Safety and Safeguards Inspection Reports." IMC 0610 is designated Compatibility Category C, meaning the Radioactive Materials Section can be more restrictive, but cannot be less restrictive. The team found no degradation in performance due to the Radioactive Material Section's less restrictive requirement. Additionally, this inconsistency was noted in the 2013 IMPEP review final report where the indicator was found satisfactory.

Team members accompanied four radioactive material inspectors on five inspections during the weeks of January 22 and April 2, 2018. The team accompanied Radioactive Materials Section inspectors during inspections of industrial radiography, gamma knife, mobile nuclear medicine, broad scope medical, and medical imaging and therapy (with written directive required) licensees. The inspections were of high quality and inspectors consistently displayed technical expertise, knowledge of the regulations, and appropriate use of calibrated survey instruments. The inspectors performed the inspections using a combined compliance-based and performance-based approach. The Radioactive Materials Section's inspection checklists addressed focus elements in the NRC's inspection procedures for each type of inspection. The inspectors adequately prepared for the inspection, conducted interviews with appropriate personnel, observed licensed operations, conducted independent and confirmatory measurements, and utilized good

health physics practices. The team determined that the inspections were adequate and appropriately assessed health, safety, and security at the licensed facilities.

The Radioactive Materials Section's policy allows managers and program leads to perform supervisory accompaniments of qualified inspectors. However, the team determined that the Radioactive Materials Section did not perform supervisory accompaniments of all inspectors annually throughout the review period. Specifically, two of eight inspector accompaniments were performed in 2013, six of nine inspector accompaniments were performed in 2014, four of ten inspector accompaniments were performed in 2015, three of nine inspector accompaniments were performed in 2016, and eight of nine inspector accompaniments were performed in 2017. The team determined that the Radioactive Materials Section's focus was on accompanying new staff each year and accompanying senior staff at random. Some senior staff went four years without being accompanied during the review period. In 2017, the Radioactive Materials Section self-identified the missed accompaniments and committed to accompanying all inspectors. As of the end of April 2018, the team determined that the Radioactive Materials Section had completed six of the eight inspector accompaniments.

The team verified that the Radioactive Materials Section maintains an adequate supply of appropriately-calibrated survey instruments to support the inspection program and to respond to radioactive materials incidents. Instruments used to support the materials inspection program are sent to the University of Washington, Swedish Medical Center, or the manufacturer for calibration.

c. Evaluation

The team determined that, except as noted below, during the review period, Washington met the performance indicator objectives listed in Section 3.3.a.

- Supervisors, or senior staff as appropriate, did not conduct annual accompaniments of each inspector to assess performance and assure consistent application of inspection policies in all years covered by the review.

As discussed above, inspection accompaniments of several staff were missed each year during the review period. The Radioactive Materials Section self-identified the problem in 2017 and has committed to conducting inspection accompaniments of all qualified staff each year.

Based on the IMPEP evaluation criteria in MD 5.6, the team recommends that Washington's performance with respect to the indicator, Technical Quality of Inspections, be found satisfactory.

d. MRB Decision

The final report will present the MRB's conclusion regarding this indicator.

3.4 Technical Quality of Licensing Actions

The quality, thoroughness, and timeliness of licensing actions can have a direct bearing on public health and safety, as well as security. An assessment of licensing procedures, actual implementation of those procedures, and documentation of communications and associated actions between the Radioactive Materials Section licensing staff and regulated community is a significant indicator of the overall quality of the licensing program.

a. Scope

The team used the guidance in State Agreements procedure SA-104, "Reviewing the Common Performance Indicator: Technical Quality of Licensing Actions," and evaluated Washington's performance with respect to the following performance indicator objectives:

- Licensing action reviews are thorough, complete, consistent, and of acceptable technical quality with health, safety, and security issues properly addressed.
- Essential elements of license applications have been submitted and elements are consistent with current regulatory guidance (e.g., financial assurance, increased controls, pre-licensing guidance).
- License reviewers, if applicable, have the proper signature authority for the cases they review independently.
- License conditions are stated clearly and can be inspected.
- Deficiency letters clearly state regulatory positions and are used at the proper time.
- Reviews of renewal applications demonstrate a thorough analysis of a licensee's inspection and enforcement history.
- Applicable guidance documents are available to reviewers and are followed (e.g., NUREG-1556 series, pre-licensing guidance, regulatory guides, etc.).
- Licensing practices for risk-significant radioactive materials are appropriately implemented including increased controls and fingerprinting orders (Part 37 equivalent).
- Documents containing sensitive security information are properly marked, handled, controlled, and secured.

b. Discussion

The Radioactive Materials Section utilizes the NRC's NUREG-1556 series of guidance documents when completing licensing actions. During the review period, the Radioactive Materials Section performed 1,490 radioactive materials licensing actions. The team evaluated 29 of those licensing actions. The licensing actions selected for review included six new applications, 11 amendments, five renewals, three terminations, two notifications of changes of control, and two financial assurance actions. The team evaluated casework which included the following license types and actions: broad scope; medical diagnostic and therapy; cyclotron; industrial radiography; research and development; academic; nuclear pharmacy; gauges; panoramic irradiators; decommissioning actions; financial assurance; bankruptcies; and notifications. The

casework sample represented work from 13 current and former Radioactive Materials Section license reviewers.

In 21 of the 29 licensing actions reviewed, the team found licensing actions to be thorough, complete, consistent, and of high quality with health, safety, and security issues properly addressed. License tie-down conditions were stated clearly and were supported by information contained in the file. Deficiency letters clearly stated regulatory positions, were used at the proper time, and identified deficiencies in the licensees' documents. Terminated licensing actions were well documented and showed appropriate transfer and survey records. For medical licenses, the Radioactive Materials Section's review of preceptor attestations was found to be thorough.

Eight actions reviewed were found to not be thorough, complete, or consistent. In one instance, an amendment was processed without a licensee's authorizing management representative's signature. The NUREG-1556 series states that a representative of the corporation or legal entity filing the application must sign and date the application. The representative signing the application must be authorized to make binding commitments and to sign official documents on behalf of the applicant.

In another instance, the application requested approval for possession of Troxler and Instrotek gauges. However, the license was issued approving Troxler and CPN gauges, and not Instrotek gauges. After the team identified this issue, the Radioactive Materials Section issued an administrative amendment.

In four instances, the team found files with missing documentation. In three of those files, the Radioactive Materials Section's equivalent to the NRC's "Checklist to Provide a Basis for Confidence that Radioactive Material will be used as Specified on the License" (pre-licensing guidance checklist) was not found and the team could not determine if the Radioactive Materials Section had completed it. The Radioactive Materials Section staff believed that the pre-licensing checklists had been used; however, the completed checklists were not located while the team was on site. In one file, the documentation for the pre-licensing site visit could not be found by the team or by the Radioactive Materials Section staff; however, there was a note in the file that one was completed.

In two instances, both involving new portable gauge licenses, no documentation of the Radioactive Materials Section's use of the pre-licensing guidance checklist was found and the team determined that Radiation Safety Officers (RSOs) were placed on the licenses without proper documentation of the required hands-on training.

Once the team identified the above-mentioned issues with the use of the pre-licensing guidance checklist, the team performed an overview of the remaining 16 new license applications that were completed during the review period with a focus on the use of the pre-licensing guidance checklist and site visit documentation. The team determined that six of the 16 actions were missing documentation. In two instances, the pre-licensing guidance checklist could not be located. In one instance, the license reviewers partially completed the pre-licensing guidance checklist. The remaining three instances did not contain documentation for pre-licensing site visits.

The team determined that, during the review period, the Radioactive Materials Section had a policy to hand deliver the license during the pre-licensing site visit. The team found that most of the new licenses issued by the Radioactive Materials Section were delivered during the pre-licensing site visits with a few exceptions, including one instance when the staff found that the address for the location of use was incorrect on the license application and another instance when the staff conducted several visits prior to completing the license due to the type of work the applicant proposed to do. The team expressed to the Radioactive Materials Section that this practice was strongly discouraged as an outcome of the 2015 Government Accountability Office Audit and discussed in Radiation Control Program Director (RCPD) letters RCPD-17-001 dated January 18, 2018, and RCPD-17-005 dated June 6, 2017. The NRC's revised pre-licensing guidance, which specifically states that hand delivery of licenses during a pre-licensing site visit is prohibited, is expected to be issued in 2018. Once issued, the Agreement States will have six months to adopt an equivalent procedure. The Radioactive Materials Section management committed to stopping the practice of hand delivering licenses at pre-licensing site visits.

The team examined the Radioactive Materials Section's licensing practices regarding requests for risk significant radioactive material (RSRM). The team found that the Radioactive Materials Section had not updated its equivalent to the NRC's RSRM checklist. Per RCPD letter RCPD-17-007 dated June 30, 2017, the Agreement States had six months to adopt the equivalent changes to the RSRM checklist. Thus, the Radioactive Materials Section should have updated its checklist by January 1, 2018. The team determined that the Radioactive Materials Section did not receive any actions involving RSRM between January 1, 2018, and the time of the on-site review. At the time of the review, the Radioactive Materials Section committed to revising the RSRM checklist to be compatible with the NRC's RSRM checklist. In its response to the draft IMPEP report the Radioactive Materials Section stated that it had updated its procedures to use the most current version of the NRC's RSRM checklist.

The team reviewed financial assurance program requirements. The team verified that the proper financial assurance documentation was on file and that the information was appropriately protected. When one licensee needed to draw upon a financial instrument, the team found the documentation of the amendment to be thorough, complete, and clear.

Additionally, while reviewing actions involving the addition of irradiators meeting 10 CFR Part 36 requirements, the team noted that although the licenses were issued in accordance with NUREG-1556, Volume 6, "Program Specific Guidance about 10 CFR Part 36 Irradiator Licenses," the Radioactive Materials Section issued these licenses without having regulations equivalent to 10 CFR Part 36 in place. The team determined this to be a matter of compatibility and discusses it in more detail in Section 4.1, Compatibility Requirements.

c. Evaluation

The team determined that, except as noted below, during the review period Washington met the performance indicator objectives listed in Section 3.4.a.

- The essential elements of license applications were not submitted in all instances and were not consistent with current regulatory guidance.
- The pre-licensing guidance checklist was not consistently applied. In one instance, the checklist was incomplete and in several instances the checklist was missing from licensing files reviewed. Additionally, pre-licensing site visit documentation was missing from several files.

As discussed above, in two instances, RSOs were placed on portable gauge licenses without meeting the proper training requirements. In one instance a portable gauge license authorized possession of a gauge not requested by the licensee and did not authorize possession for the gauge requested, and in another instance the licensee's authorized management representative did not sign an amendment request. Additionally, the Radioactive Materials Section did not have documentation of all completed pre-licensing site visits and pre-licensing guidance checklists could not be found in some files and in one instance was incomplete.

Based on the IMPEP evaluation criteria in MD 5.6, the team recommends that Washington's performance with respect to the indicator, Technical Quality of Licensing Actions, be found satisfactory, but needs improvement.

d. MRB Decision

The final report will present the MRB's conclusion regarding this indicator.

3.5 Technical Quality of Incident and Allegation Activities

The quality, thoroughness, and timeliness of response to incidents and allegations of safety concerns can have a direct bearing on public health and safety. An assessment of incident response and allegation investigation procedures, actual implementation of these procedures, internal and external coordination, and investigative and followup actions, are a significant indicator of the overall quality of the incident response and allegation programs.

a. Scope

The team used the guidance in State Agreements procedure SA-105, "Reviewing the Common Performance Indicator: Technical Quality of Incident and Allegation Activities," and evaluated Washington's performance with respect to the following performance indicator objectives:

- Incident response, investigation, and allegation procedures are in place and followed.
- Response actions are appropriate, well-coordinated, and timely.
- On-site responses are performed when incidents have potential health, safety, or security significance.
- Appropriate followup actions are taken to ensure prompt compliance by licensees.
- Followup inspections are scheduled and completed, as necessary.

- Notifications are made to the NRC Headquarters Operations Center for incidents requiring a 24-hour or immediate notification to the Agreement State or NRC.
- Incidents are reported to the NMED.
- Allegations are investigated in a prompt, appropriate manner.
- Concerned individuals are notified of investigation conclusions.
- Concerned individuals' identities are protected, as allowed by law.

b. Discussion

During the review period, a total of 56 incidents were reported to the NMED database by the Radioactive Materials Section. The team selected 23 events to review. The casework reviewed included: one radiography event involving the inability to retract the source, seven medical events, one suspected overexposure, one overexposure to a member of the public, three damaged gauge events, six lost sources, and four leaking sources (foils).

Events are reported to Washington via a State-wide emergency response number. Initial information is recorded by the Emergency Response Duty Officer who then routes the initial event details to the Administrative Assistant in the Radioactive Materials Section. The Administrative Assistant routes the event details to an inspector who is qualified for the modality involved in the event. That inspector makes initial contact with the reporting party to ensure the Radioactive Materials Section has the full details on the event. The event is then discussed collectively by management and staff and the appropriate response is agreed upon.

The team found that the Radioactive Materials Section responded to each event appropriately and inspectors properly evaluated each event, interviewed involved individuals, and documented their findings. Enforcement actions were taken where appropriate.

The team reviewed the Radioactive Materials Section's reporting of events. The team noted that three of the 23 events reviewed were not reported to the NRC's Headquarters Operations Officer (HOO) in accordance with the NRC's timeframes. Prior to the on-site review, the NRC's NMED contractor identified that one event was reported late and in the incorrect manner. As soon as the Radioactive Materials Section was notified, it reported the event to the HOO. During the on-site review, the team found two events that the Radioactive Materials Section failed to report to the HOO as required. The team discussed each of the events with the Radioactive Materials Section and determined that, in each instance, the lack of reporting the event to the HOO was an oversight. The Radioactive Materials Section immediately reported both events to the HOO once they were identified by the team.

During the review period, six allegations were received directly by Washington with nine additional allegations referred by the NRC. The team evaluated each of the allegations and found that the Radioactive Materials Section took prompt and appropriate action in response to the concerns raised. All allegations were appropriately closed, concerned

individuals were notified of the actions taken, and allegeders' identities were protected as allowed by State law.

c. Evaluation

The team determined that, during the review period, Washington met the performance indicator objectives listed in Section 3.5.a., and, based on the IMPEP evaluation criteria in MD 5.6 the team, recommends that Washington's performance with respect to the indicator, Technical Quality of Incident and Allegation Activities, be found satisfactory.

d. MRB Decision

The final report will present the MRB's conclusion regarding this indicator.

4.0 NON-COMMON PERFORMANCE INDICATORS

Four non-common performance indicators are used to review Agreement State programs: (1) Compatibility Requirements; (2) Sealed Source and Device (SS&D) Evaluation Program; (3) Low-Level Radioactive Waste Disposal (LLRW) Program; and (4) Uranium Recovery (UR) Program. All four non-common performance indicators applied to this review.

4.1 Compatibility Requirements

State statutes should authorize the State to establish a program for the regulation of agreement material and provide authority for the assumption of regulatory responsibility under the agreement. The statutes must authorize the State to promulgate regulatory requirements necessary to provide reasonable assurance of protection of public health, safety, and security. The State must be authorized through its legal authority to license, inspect, and enforce legally binding requirements, such as regulations and licenses. NRC regulations that should be adopted by an Agreement State for purposes of compatibility or health and safety should be adopted in a time frame so that the effective date of the State requirement is not later than three years after the effective date of the NRC's final rule. Other program elements, as defined in Appendix A of State Agreements procedure SA-200, "Compatibility Categories and Health and Safety Identification for NRC Regulations and Other Program Elements," that have been designated as necessary for maintenance of an adequate and compatible program, should be adopted and implemented by an Agreement State within six months following NRC designation.

a. Scope

The team used the guidance in State Agreements procedure SA-107, "Reviewing the Non-Common Performance Indicator: Compatibility Requirements," and evaluated Washington's performance with respect to the following performance indicator objectives. A complete list of regulation amendments can be found on the NRC website at the following address: <https://scp.nrc.gov/regtoolbox.html>.

- The Agreement State program does not create conflicts, duplications, gaps, or other conditions that jeopardize an orderly pattern in the regulation of radioactive materials under the Atomic Energy Act, as amended.
- Regulations adopted by the Agreement State for purposes of compatibility or health and safety were adopted no later than three years after the effective date of the NRC regulation.
- Other program elements, as defined in SA-200 that have been designated as necessary for maintenance of an adequate and compatible program, have been adopted and implemented within six months of NRC designation.
- The State statutes authorize the State to establish a program for the regulation of agreement material and provide authority for the assumption of regulatory responsibility under the agreement.
- The State is authorized through its legal authority to license, inspect, and enforce legally binding requirements such as regulations and licenses.
- Impact of sunset requirements, if any, on the State's regulations.

b. Discussion

The team reviewed Washington's response to the questionnaire relative to this indicator, reviewed the status of regulations required to be adopted under the NRC's adequacy and compatibility policy, and verified the adoption of regulations with data obtained from the State Regulation Status Sheet maintained by the NRC.

Washington became an Agreement State on December 31, 1966. The Agreement with Washington was amended on February 19, 1982, to include regulation of 11e.(2) byproduct material (uranium mill tailings). The Washington Agreement State Program's current effective statutory authority is contained in the Revised Code of Washington (RCW) 70.98, "Nuclear Energy and Radiation," and RCW 70.121, "Mill Tailings – Licensing and Perpetual Care." It is also affected by RCW 70.94, "Washington Clean Air Act," of the Washington Statutes. The Department is designated as the State's radiation control agency. No legislation affecting the Washington Agreement State Program was passed during the review period.

Washington's administrative rulemaking process takes approximately 9 to 12 months from drafting to finalizing a rule. However, the process for rulemaking in the State of Washington only allows for amending one rule chapter at a time. For example, if the Radioactive Materials Section is amending regulation 246-240-060, no other amendments can be initiated in Chapter 240 until this first amendment is finished. This policy can delay rule promulgation if the same section of the NRC's regulations is adopted across multiple amendments and the Radioactive Materials Section does not verify that needed changes impact an already open section of the regulations. The public, the NRC, other State agencies, and potentially impacted licensees and registrants are offered an opportunity to comment during the process. Comments are considered and incorporated, as appropriate. Once the changes are made, the final regulations are approved by the Secretary of Health and filed with the Code Reviser's Office. The revised rules become effective 31 days after filing. The team determined that the State's rules and regulations are not subject to "sunset" laws.

During the review period, the Washington Agreement State Program submitted 16 proposed regulation amendments, 16 final regulation amendments, two revised final regulation amendments, and one license condition to the NRC for a compatibility review. This covered 17 regulation amendment tracking system (RATS) sheets. At the time of the review, no amendments were overdue for adoption. However, the team determined that six final regulation amendments were adopted during the review period in a time frame beyond three years after the NRC's effective date. Three of the six amendments were overdue since the 2013 IMPEP review period. These three amendments were unable to be adopted due to a 2011 Governor-issued moratorium on new rulemaking that stopped all non-critical rulemaking. The moratorium extended until January 1, 2013. Once the moratorium was lifted, rulemaking efforts were initialized, and the overdue regulations were adopted. One of the six amendments was overdue because the Radioactive Materials Section was restricted from working on it while older actions were in process. Two of the six amendments were overdue because they were grouped into a larger rulemaking package consisting of seven total amendments. The due date for this package was past the due date for two of the amendments in the package.

To ensure that regulations are adopted in a timely manner the Office has taken the following actions: (1) notwithstanding a moratorium, the Office will commence rulemaking immediately once notified by the NRC; and (2) on April 20, 2017, the Secretary of Health delegated responsibility to the Assistant Secretary to sign "exception" rule packages. This delegation helped to streamline the internal rulemaking process. Most rule packages associated with NRC regulation amendments meet the requirements of an "exception" rule package.

Washington's State Regulation Status Sheet notes that, for regulations equivalent to 10 CFR Part 36, "Washington does not have any licensees subject to these regulations (See SECY-95-112)." In 2013, the Radioactive Materials Section received a license amendment request from an existing licensee requesting the possession of an irradiator. While processing this amendment request, the Radioactive Materials Section evaluated whether the irradiator in question was subject to 10 CFR Part 36. At the time, it was incorrectly determined that the irradiator was not subject to 10 CFR Part 36 and the license amendment was issued in November 2013 without Washington adopting regulations equivalent to the NRC's 10 CFR Part 36. In December 2014, the Radioactive Materials Section reevaluated its decision and subsequently placed a condition on the license which incorporated 10 CFR Part 36 by reference. The Radioactive Materials Section stated in their response to the draft IMPEP report that an additional reason for issuing a license condition at that time rather than pursue rulemaking was cost. The Office Director in place in 2014 determined that it was not cost effective for the Radioactive Materials Section to commence rulemaking.

In 2016, the Radioactive Materials Section identified a second license that had been issued authorizing the possession and use of an irradiator subject to 10 CFR Part 36. The Radioactive Materials Section performed an administrative amendment to the license in May 2016 that added the license condition that incorporated 10 CFR Part 36 by reference. At the time of the review, the team identified to the Office that the condition had not been submitted to the NRC for a compatibility review. Subsequently, the Office submitted the license condition to the NRC for review on May 1, 2018.

Additionally, prior to the IMPEP review, the Office began the rulemaking process to adopt equivalent regulations to 10 CFR Part 36 and on February 14, 2018, submitted proposed regulations to the NRC for review.

As discussed in other indicators (see Sections 3.1, 4.2, 4.3, and 4.4), the team identified that the Office did not make changes to its training and qualification program to be compatible with the NRC. Per State Agreements Procedure SA-200 “Compatibility Categories and Health and Safety Identification for NRC Regulations and Other Program Elements,” qualification procedures are considered a Compatibility Category C, which requires a State to adopt the essential objectives of the procedure, but allows the procedure to be more restrictive. Therefore, the team recommends that Washington review, revise, and update the training and qualification requirements for all aspects of its Agreement State Program to ensure the essential objectives of the NRC’s IMC 1248 appendices A, B, D, E, H, and I are adopted.

c. Evaluation

The team determined that, except as noted below, during the review period Washington met the performance indicator objectives listed in Section 4.1.a.

- Six regulations amendments adopted by the Agreement State for purposes of compatibility or health and safety were adopted later than three years after the effective date of the NRC regulation.
- The Radioactive Materials Section created regulatory gaps by not having equivalent regulations to 10 CFR Part 36 in place at the time the first license authorizing possession and use of an irradiator meeting those requirements was issued.
- The training and qualification manuals, as defined in State Agreements procedure SA-200 that are designated as program elements necessary for maintenance of an adequate and compatible program, were adopted and implemented in a time frame greater than six months of the NRC designation.

The team determined that six regulation amendments were adopted overdue during the review period. These amendments were adopted overdue due to: (1) the Governor’s moratorium on non-critical rulemaking; (2) incorrect rule adoption prioritization and the inability to complete rulemaking in a chapter that is already open and undergoing rulemaking; and (3) the inclusion of rule changes with other changes having a later adoption date. Additionally, the team determined that equivalent regulations to 10 CFR Part 36 were not adopted before issuance of two licenses with devices regulated under that Part. Finally, as discussed in other sections of the report, the team determined that a compatible training and qualification program was not adopted within six months after the issuance of the NRC’s IMC 1248.

Based on the IMPEP evaluation criteria in MD 5.6, the team recommends that Washington’s performance with respect to the indicator, Compatibility Requirements, be found satisfactory, but needs improvement.

d. MRB Decision

The final report will present the MRB's conclusion regarding this indicator.

4.2 Sealed Source and Device (SS&D) Evaluation Program

Adequate technical evaluations of SS&D designs are essential to ensure that SS&Ds will maintain their integrity and that the design is adequate to protect public health and safety. NUREG-1556, Volume 3, "Consolidated Guidance about Materials Licenses: Applications for Sealed Source and Device Evaluation and Registration," provides information on conducting SS&D reviews and establishes useful guidance for teams.

Under this guidance, three sub elements: Technical Staffing and Training, Technical Quality of the Product Evaluation Program, and Evaluation of Defects and Incidents Regarding SS&D's, are evaluated to determine if the SS&D program is satisfactory. Agreement States with authority for SS&D evaluation programs who are not performing SS&D reviews are required to commit in writing to having an SS&D evaluation program in place before performing evaluations.

a. Scope

The team used the guidance in State Agreements procedure SA-108, "Reviewing the Non-Common Performance Indicator: Sealed Source and Device Evaluation Program," and evaluated Washington's performance with respect to the following performance indicator objectives:

Technical Staffing and Training

- A well-conceived and balanced staffing strategy has been implemented throughout the review period.
- Qualification criteria for new technical staff are established and are being followed or qualification criteria will be established if new staff members are hired.
- Any vacancies, especially senior-level positions, are filled in a timely manner.
- Management is committed to training and staff qualification.
- Individuals performing SS&D evaluation activities are adequately qualified and trained to perform their duties.
- SS&D reviewers are trained and qualified in a reasonable period of time.

Technical Quality of the Product Evaluation Program

- SS&D evaluations are adequate, accurate, complete, clear, specific, and consistent with the guidance in NUREG-1556, Volume 3.

Evaluation of Defects and Incidents

- SS&D incidents are reviewed to identify possible manufacturing defects and the root causes of these incidents.

- Incidents are evaluated to determine if other products may be affected by similar problems. Appropriate action and notifications to the NRC, Agreement States, and others, as appropriate, occur in a timely manner.

b. Discussion

Technical Staffing and Training

At the start of the review period, the Radioactive Materials Section had five reviewers who were qualified to perform safety evaluations of SS&D applications. All reviewers had been qualified for a number of years. Throughout the review period, four of those experienced SS&D reviewers left the program. The Radioactive Materials Section qualified three new reviewers during the review period. These were staff hired during the review period to become license reviewers/inspectors for the Radioactive Materials Section. All three completed the SS&D on-line training course and reviewed one case study before becoming qualified.

The Radioactive Materials Section does not have a written training program equivalent to the NRC's IMC 1248, Appendix D. The Radioactive Materials Section has an undocumented policy that allows an individual who completes the NRC's SS&D Workshop to be qualified to perform SS&D reviews. The staff qualified to perform SS&D reviews during this review period have a high degree of formal education in radiological health but have very limited training and experience in evaluating the construction and safety features of sealed sources and devices. The team was unable to assess the effectiveness of the Radioactive Materials Section's SS&D training program since the only action completed by a reviewer qualified during the review period was an inactivation of a device. The team discussed with the Radioactive Materials Section the importance of proper training for SS&D reviewers and suggested that prior SS&D actions be used as training for the newly qualified staff to ensure competency. Since the team could not assess whether the lack of a compatible training program for SS&D reviewers impacted performance during the review period, the team determined this to be a matter of compatibility and discusses it further in Section 4.1, Compatibility Requirements.

Technical Quality of the Product Evaluation

Washington has 12 SS&D licensees. The team evaluated the three SS&D actions processed during the review period. These actions included two amendments and one inactivation of a device.

The two applications for amendments were to existing SS&D registrations. The reviewers followed the guidance and checklists provided in NUREG-1556, Volume 3, "Consolidated Guidance About Materials Licenses: Applications for Sealed Source and Device Evaluation and Registration." The reviewers ensured that the product met all applicable standards and regulations and corresponded with the applicant to obtain additional information. In addition to the two technical reviews, there was one inactivation which the team determined was performed properly. All three SS&D actions involved a single company.

Evaluation of Defects and Incidents Regarding SS&Ds

The team evaluated the two incidents involving SS&D registered products reported to the Radioactive Materials Section during the review period. Neither incident involved a sealed source or device registered in the State of Washington. Additionally, to identify events that involve sealed sources or devices registered by the State, the Radioactive Materials Section performs a documented semi-annual review of NMED. The team reviewed the documentation associated with these reviews and discussed the documentation process with the Radioactive Materials Section staff. The team determined that it was adequate to assess for events involving SS&Ds registered by the State. The Radioactive Materials Section did not identify any events for SS&Ds registered by Washington during the review period.

c. Evaluation

The team determined that, except as noted below, during the review period Washington met the performance indicator objectives listed in Section 4.2.a.

- The Agreement State's training and qualification program is not equivalent to the NRC's IMC 1248.

As discussed above, the Radioactive Materials Section did not have a training and qualification program for SS&D reviewers equivalent to the NRC's IMC 1248 Appendix D during the review period. However, since the only action performed by a newly qualified reviewer was an inactivation of a device, the team did not identify any performance concerns based on the lack of a compatible training and qualification program.

Based on the IMPEP evaluation criteria in MD 5.6, the team recommends that Washington's performance with respect to the indicator, Sealed Source and Device Evaluation Program, be found satisfactory.

d. MRB Decision

The final report will present the MRB's conclusion regarding this indicator.

4.3 Low-Level Radioactive Waste (LLRW) Disposal Program

The objective is to determine if Washington's LLRW disposal program is adequate to protect public health and safety. Five sub-elements are used to make this determination: (1) Technical Staffing and Training; (2) Status of LLRW Inspection Program; (3) Technical Quality of Inspections; (4) Technical Quality of Licensing Actions; and (5) Technical Quality of Incident and Allegation Activities.

a. Scope

The team used the guidance in State Agreements procedure SA-109, "Reviewing the Non-Common Performance Indicator: Low-Level Radioactive Waste Disposal Program,"

and evaluated Washington's performance with respect to the following performance indicator objectives:

Technical Staffing and Training

- Qualified and trained technical staff are available to license, regulate, control, inspect, and assess the operation and performance of the LLRW disposal facility.
- Qualification criteria for new LLRW technical staff are established and are followed or qualification criteria will be established if new staff members are hired.
- Any vacancies, especially senior-level positions, are filled in a timely manner.
- There is a balance in staffing the LLRW licensing and inspection programs.
- Management is committed to training and staff qualification.
- Individuals performing LLRW licensing and inspection activities are adequately qualified and trained to perform their duties.
- LLRW license reviewers and inspectors are trained and qualified in a reasonable period of time.

Status of LLRW Inspection Program

- The LLRW facility is inspected at prescribed frequencies.
- Statistical data on the status of the inspection program are maintained and can be retrieved.
- Deviations from inspection schedules are coordinated between LLRW technical staff and management.
- There is a plan to perform any overdue inspections and reschedule any missed or deferred inspections; or a basis has been established for not performing any overdue inspections or rescheduling any missed or deferred inspections.
- Inspection findings are communicated to licensees in a timely manner.

Technical Quality of Inspections

- Inspections of LLRW licensed activities focus on health, safety, and security.
- Inspection findings are well-founded and properly documented in reports.
- Management promptly reviews inspection results.
- Procedures are in place and used to help identify root causes and poor licensee performance.
- Inspections address previously identified open items and violations.
- Inspection findings lead to appropriate and prompt regulatory action.
- Supervisors, or senior staff as appropriate, conduct annual accompaniments of each LLRW inspector to assess performance and assure consistent application of inspection policies.
- Inspection guides are consistent with NRC guidance.
- An adequate supply of calibrated survey instruments is available to support the inspection program.

Technical Quality of Licensing Actions

- Licensing action reviews are thorough, complete, consistent, and of acceptable technical quality with health, safety, and security issues properly addressed.
- Applicable LLRW guidance documents are available to reviewers and are followed (e.g., pre-licensing guidance, regulatory guides, etc.).
- Essential elements of license applications have been submitted and elements are consistent with current NRC or Agreement State regulatory guidance for describing the isotopes and quantities used, qualifications of authorized users, facilities, equipment, locations of use, operating and emergency procedures, and any other requirements necessary to ensure an adequate basis for the licensing action, e.g., financial assurance, increased controls/Part 37, etc.
- LLRW license reviewers, if applicable, have the proper signature authority for the cases they review independently.
- License tie-down conditions are stated clearly and can be inspected.
- Deficiency letters clearly state regulatory positions and are used at the proper time.
- Reviews of renewal applications demonstrate a thorough analysis of a licensee's inspection and enforcement history.
- Licensing practices for risk significant radioactive materials are appropriately implemented including increased controls and fingerprinting orders (Part 37 equivalent).
- Documents containing sensitive security information are properly marked, handled, controlled, and secured.

Technical Quality of Incident and Allegation Activities

- LLRW incident response, investigation, and allegation procedures are in place and followed.
- Response actions are appropriate, well-coordinated, and timely.
- On-site responses are performed when incidents have potential health, safety or security significance.
- Appropriate followup actions are taken to ensure prompt compliance by licensees.
- Followup inspections are scheduled and completed, as necessary.
- Notifications are made to the NRC Headquarters Operations Center for incidents requiring a 24-hour or immediate notification to the Agreement State or NRC.
- Incidents are reported to the NMED.
- Allegations are investigated in a prompt, appropriate manner.
- Concerned individuals are notified of investigation conclusions.
- Concerned individuals' identities are protected, as allowed by law.

b. Discussion

The regulation of LLRW in Washington is managed by the Waste Management Section. The Waste Management Section licenses: U.S. Ecology, for LLRW disposal and Perma-Fix Northwest, Inc. (PFNW), as a LLRW processing facility.

The U.S. Ecology LLRW disposal facility is located northwest of the city of Richland, Washington. The facility is situated within the U.S. Department of Energy (DOE) Hanford site on 100 acres of land. The facility is located entirely within the Hanford separations area, which covers approximately 82 square miles in the center of the Hanford site. The facility has been in operation since 1965 and has been continuously operated by U.S. Ecology. The Waste Management Section licenses U.S. Ecology to receive, handle, process, store, and dispose of LLRW at this facility. This facility is authorized to dispose of the Class A, B, and C LLRW from the Northwest and Rocky Mountain Compact regions.

The PFNW facility is a commercial waste processing facility, licensed by the Waste Management Section, for storing and treating both LLRW (thermal and non-thermal methods) and mixed waste (non-thermal method only). The facility is located on 35 acres adjacent to the DOE Hanford site. The processing facility has been in operation since the early 1990's.

Technical Staffing and Training

The Waste Management Section is comprised of seven positions which includes a Section Manager, five license reviewers/inspectors, and one Administrative Assistant. This equates to 2.88 FTE for the LLRW program. The technical staff and manager have diversified backgrounds in health physics, engineering, and earth sciences. The education and experience of the staff meets or exceeds that necessary to perform the licensing and inspection activities. The team noted that the staff in the Waste Management Section also perform uranium recovery program work (see Section 4.4, Uranium Recovery Program).

During the review period, there was significant turnover in the staff of the Waste Management Section, as well as a reduction in staff. Turnover occurred for a variety of reasons including retirements, new opportunities, and resignations. In addition, two staff positions were eliminated during the review period. In September 2014, a senior staff member who was working part-time (0.6 FTE) retired and that position was subsequently eliminated. In the previous IMPEP review period, the Waste Management Section indicated that a senior resident inspector for the LLRW facility had retired and that it planned to fill that position. However, due to a reduction in shipments at the U.S. Ecology facility and reduced operations at PFNW, the Waste Management Section chose to discontinue the resident inspector position. There has been no resident inspector at the facility since January 2013. The team determined that, at the time of the review, the Waste Management Section's staffing level was adequate to maintain the quality and performance of the LLRW program.

The Waste Management Section has a documented training and qualification program for staff members to perform licensing, inspection, and investigations of LLRW activities. However, the team determined that the program was not compatible with the NRC's IMC 1248 (see recommendation in Section 4.1).

The foundation of the Waste Management Section's training requirements is a performance-based "learn, do, and be reviewed" approach. A Waste Management

Section qualification journal/form was used to track training progress and qualification status. The form lists basic training applicable to any position type and NRC courses that are recommended for staff performing inspections or licensing, as well as specialized courses. The form does not indicate required training, but distinguishes between basic and specialized training. The form indicates the training category (Waste Processor, Uranium Mills, Low-Level Radioactive Waste Disposal) and whether the individual was approved, by whom, and the date of the approval for both licensing and inspections. For documentation of qualification, a memo was issued to the training file to indicate that the individual completed the requirements and the basis for the qualification determination. The training procedure did not require staff to have training in risk or performance assessment and the associated reading list for staff did not include NUREG-1573, "A Performance Assessment Methodology for Low-Level Radioactive Waste Disposal Facilities: Recommendations of NRC's Performance Assessment Working Group," as stated in Qualification 4 to IMC 1248 Appendix E.

The team concluded that no LLRW licensing or inspection performance issues existed despite the lack of a compatible training program, based on: interviews with the technical and administrative staff; an examination of staff qualifications, duties, and functions; the review of licensing actions; and observations made during inspection accompaniments. Additionally, the team determined that all qualified staff met the refresher training requirements directed by the NRC's IMC 1248 during the review period.

Status of LLRW Disposal Inspection Program

The Waste Management Section performed annual inspections at both the U.S. Ecology LLRW disposal facility and the PFNW waste processing facility. No inspections were completed overdue during the review period. No new LLRW disposal licenses were issued during the review period; consequently, no initial inspections were conducted by the Waste Management Section. The team determined that the Waste Management Section completed LLRW inspections in accordance with the frequency established in the NRC's IMC 2401, "Near-Surface Low-Level Radioactive Waste Disposal Facility Inspection Program."

In addition to the annual inspections, the Waste Management Section conducted monthly inspections during the review period in accordance with procedure WMS 311, "Surveillances." These were limited inspections focusing on a specific licensee's operations. This procedure was revised in 2016 to change the requirement from monthly surveillance to "as needed" surveillance based on the decreasing activity at the licensed facilities.

The team found that inspection results were communicated to the licensee within 30 days of the inspection exit for all inspections during the review period. The Waste Management Section communicated the inspection results to the licensee by issuing a completed "Inspection Findings and Licensee Acknowledgement" form on-site following the conclusion of each inspection. For items of non-compliance findings, a notice of correction letter was issued to the licensee within 30 days of the inspection.

Technical Quality of Inspections

The team assessed the quality of the LLRW program inspections by evaluating the following items/actions: inspector performance during accompaniments; inspection field notes and completed reports; inspection procedures; followup on previous inspection findings, including regulatory actions taken; and annual supervisory accompaniments.

The team accompanied two inspectors during a team inspection of the U.S. Ecology LLRW disposal facility on April 3 – 4, 2018. The team observed each inspector review different records and inspect different locations of the facility. Records related to the site security/trench inspection, instrument calibration/check sources, posting, and external dosimetry were reviewed. The facility inspection included the disposal trenches, fence inspection, and surveys and verification of postings throughout the facility. The inspectors covered the scope of the inspection and followed-up on the status of the previously identified items of noncompliance. The inspectors demonstrated appropriate performance-based inspection techniques. The inspectors conducted an exit meeting with the licensee management and clearly discussed and communicated the results of the inspection. The inspectors demonstrated that they were experienced, prepared, and knowledgeable of the facility operations, the inspection procedures, and license requirements. The scope of the inspection was adequate to assess the radiological health, safety, and security at the facility.

The team reviewed the files for the five annual inspections performed at the U.S. Ecology LLRW disposal facility and the PFNW waste processing facility during the review period. In addition, the team reviewed 26 monthly inspections at the U.S. Ecology LLRW disposal facility and 21 monthly inspections at PFNW. The team determined that the inspection reports were complete, consistent, and had sufficient documentation to ensure that licensee performance with respect to health, safety, and security was acceptable. The findings were well-founded, supported by regulations, and appropriately documented. Inspection reports addressed previously identified open items and items of non-compliance. An annual inspection summary was included in each inspection file that identified the status of the open items for the year. All inspection reports were reviewed by management within 30 days.

The team verified that supervisory accompaniments of each inspector were completed annually and documented for each year of the review period. The Waste Management Section had an adequate number and variety of calibrated instruments for use during inspections.

Technical Quality of Licensing Actions

The Waste Management Section completed 13 licensing actions during the review period. The team reviewed six of the 13 actions, which included three renewals, two amendments, and one denial. The Waste Management Section conducts licensing actions consistent with their procedure WMS 201 "Licensing Procedure." A quality assurance review of each licensing action is performed. The team did not identify any technical or typographical errors in the licenses reviewed.

For the U.S. Ecology facility, the primary source of the safety basis for the facility was the 2004 Environmental Impact Statement completed by the Waste Management Section as required by the State Environmental Policy Act process. Information from the licensee was used to develop the analysis in the Environmental Impact Statement; however, the analysis was completed by the Waste Management Section, and not the licensee. The information in the Environmental Impact Statement was detailed and of sufficient quality. However, the NRC's LLRW disposal regulations in 10 CFR Part 61, as well as Washington's corresponding regulations in WAC 246-250 require the licensee to submit information as a basis for licensing the disposal facility, such as technical analyses that demonstrate that the facility will comply with the performance objectives as outlined in Subpart C of 10 CFR Part 61/ WAC 246-250. The team determined that this facility was licensed prior to the NRC's promulgation of 10 CFR Part 61, but the license has been renewed multiple times since 10 CFR Part 61 became effective. The Waste Management Section did not require the licensee to submit a new safety basis at the time of renewal. Thus, since the Waste Management Section's analysis was and still is the technical analysis of the facility, the Waste Management Section has the appearance of approving its own analyses. This places burden on the Waste Management Section to support and justify analyses that should be the responsibility of the licensee. The Waste Management Section indicated that it plans to have the licensee develop the performance assessment and technical analysis to demonstrate that the requirements are being met; however, the Waste Management Section is waiting for the revisions to the NRC's 10 CFR Part 61 to be completed in order to avoid unnecessary regulatory burden.

The team found that the licensing actions were consistent and of sufficient quality, with health, safety, and security issues properly addressed. For example, in a licensing action regarding changes to the environmental monitoring program, the team determined that staff generated requests for additional information that were detailed and of high quality. Staff also provided a detailed basis on the reason for the partial denial of the licensee's request.

In terms of documentation, the team determined that in the licensing reviews examined, the Waste Management Section staff did not generate a technical evaluation report (or equivalent) to document what was reviewed, how it was reviewed, and the basis for the licensing decisions. Checklists used by the Waste Management Section provide limited detail towards documenting the specifics of an action and do not capture why the information provided by the licensee was found to be acceptable. In some of the actions reviewed by the team, the basis for the licensing decision was difficult to ascertain in the documentation and required discussion with the staff who performed the review to clarify the basis. The team determined that staff did not routinely compare requested license changes against the documented safety analysis for the licensee. For example, one licensing action requested increases to the radiological inventory provided in the license and staff approved the request based on the past performance of the licensee without comparing it to the documented safety basis for the facility. The team recommends that Washington produce a technical evaluation report that provides the basis for the regulatory decisions each time a significant licensing action for the LLRW disposal facility and/or a waste processing facility is processed.

In another licensing action, the team determined that the staff identified deficiencies in the licensee's submittal and obtained commitments from the licensee, but these commitments were not incorporated in the tie-down conditions in the license. The Waste Management Section staff indicated that those commitments were reviewed when the facility was next inspected, but the team could not find verification of this documented in the inspection reports.

For the three renewal actions, the team reviewed the Waste Management Section's completeness reviews of the license application and the letters issued to the licensee. The team determined that timely renewal letters were issued appropriately to licensees and that the Waste Management Section issued requests for additional information to the licensee, when applicable. Tie-down conditions were clearly indicated in the renewed licenses.

Technical Quality of Incident and Allegation Activities

The Waste Management Section received one incident pertaining to the U.S. Ecology facility and five incidents pertaining to the PFNW facility during the review period. The team reviewed the six incident files. All incidents occurred on site. There was no release of radioactive material to the environment and no worker exposure or injury. The incidents were not reportable. The team reviewed the Waste Management Section's response to each incident and noted that the response to each incident was appropriate, well-coordinated, and timely. There were no allegations for either facility reported to the Waste Management Section during the review period. The Waste Management Section has written procedures for the handling, review, response, and followup of incidents and allegations.

c. Evaluation

The team determined that, except as noted below, during the review period Washington met the performance indicator objectives listed in Section 4.3.a.

- The Agreement State's training and qualification program is not equivalent to the NRC's IMC 1248.

As discussed above and in Section 4.1, Compatibility Requirements, the Waste Management Section has a documented training and qualification program for new staff hired during the review period. However, the team determined the program was not compatible to the NRC's IMC 1248. A recommendation involving this issue was made by the team in Section 4.1, Compatibility Requirements. Additionally, the documented basis for some of the licensing decisions made by the Waste Management Section was determined to be limited. Therefore, as noted in this section's Technical Quality of Licensing Actions, the team is making one recommendation with regards to the documentation of the Waste Management Section's technical evaluation of licensing actions.

Based on the IMPEP evaluation criteria in MD 5.6, the team recommends that Washington's performance with respect to the indicator, Low-Level Radioactive Waste Disposal Program, be found satisfactory.

d. MRB Decision

The final report will present the MRB's conclusion regarding this indicator.

4.4 Uranium Recovery Program

The objective is to determine if Washington's uranium recovery program is adequate to protect public health and safety. Five sub-elements are used to make this determination: (1) Technical Staffing and Training; (2) Status of Uranium Recovery Inspection Program; (3) Technical Quality of Inspections; (4) Technical Quality of Licensing Actions; and (5) Technical Quality of Incident and Allegation Activities.

a. Scope

The team used the guidance in State Agreements procedure SA-110, "Reviewing the Non-Common Performance Indicator: Uranium Recovery Program," and evaluated Washington's performance with respect to the following performance indicator objectives:

Technical Staffing and Training

- Qualified and trained technical staff are available to license, regulate, control, inspect, and assess the operation and performance of the uranium recovery program.
- Qualification criteria for new uranium recovery technical staff are established and are being followed or qualification criteria will be established if new staff members are hired.
- Any vacancies, especially senior-level positions, are filled in a timely manner.
- There is a balance in staffing the uranium recovery licensing and inspection programs.
- Management is committed to training and staff qualification.
- Individuals performing uranium recovery licensing and inspection activities are adequately qualified and trained to perform their duties.
- Uranium recovery license reviewers and inspectors are trained and qualified in a reasonable period of time.

Status of Uranium Recovery Inspection Program

- The uranium recovery facility is inspected at prescribed frequencies.
- Statistical data on the status of the inspection program are maintained and can be retrieved.
- Deviations from inspection schedules are coordinated between uranium recovery technical staff and management.

- There is a plan to perform any overdue inspections and to reschedule any missed or deferred inspections; or a basis has been established for not performing any overdue inspections or rescheduling any missed or deferred inspections.
- Inspection findings are communicated to licensees in a timely manner.

Technical Quality of Inspections

- Inspections of uranium recovery licensed activities focus on health, safety, and security.
- Inspection findings are well-founded and properly documented in reports.
- Management promptly reviews inspection results.
- Procedures are in place and used to help identify root causes and poor licensee performance.
- Inspections address previously identified open items and violations.
- Inspection findings lead to appropriate and prompt regulatory action.
- Supervisors, or senior staff as appropriate, conduct annual accompaniments of each uranium recovery inspector to assess performance and assure consistent application of inspection policies.
- Inspection guides are consistent with NRC guidance.
- An adequate supply of calibrated survey instruments is available to support the inspection program.

Technical Quality of Licensing Actions

- Licensing action reviews are thorough, complete, consistent, and of acceptable technical quality with health, safety, and security issues properly addressed.
- Applicable uranium recovery guidance documents are available to reviewers and are followed (e.g., pre-licensing guidance, regulatory guides, etc.).
- Essential elements of license applications have been submitted and meet current NRC or Agreement State regulatory guidance (e.g., financial assurance, increased controls, etc.)
- Uranium recovery license reviewers, if applicable, have the proper signature authority for the cases they review independently.
- License conditions are stated clearly and can be inspected.
- Deficiency letters clearly state regulatory positions and are used at the proper time.
- Reviews of renewal applications demonstrate a thorough analysis of a licensee's inspection and enforcement history.
- Licensing practices for risk significant radioactive materials are appropriately implemented including increased controls and fingerprinting orders (Part 37 equivalent).
- Documents containing sensitive security information are properly marked, handled, controlled, and secured.

Technical Quality of Incident and Allegation Activities

- Uranium recovery incident response, investigation, and allegation procedures are in place and followed.
- Response actions are appropriate, well-coordinated, and timely.
- On-site responses are performed when incidents have potential health, safety or security significance.
- Appropriate followup actions are taken to ensure prompt compliance by licensees.
- Followup inspections are scheduled and completed, as necessary.
- Notifications are made to the NRC Headquarters Operations Center for incidents requiring a 24-hour or immediate notification to the Agreement State or NRC.
- Incidents are reported to the NMED.
- Allegations are investigated in a prompt, appropriate manner.
- Concerned individuals are notified of investigation conclusions.
- Concerned individuals' identities are protected, as allowed by law.

b. Discussion

At the time of the IMPEP review, the Waste Management Section licensed one former conventional mill site currently undergoing decommissioning and reclamation: the Dawn Mining Company (DMC). The Waste Management Section does not currently regulate any operating uranium mills. The DMC uranium mill site covers approximately 800 acres in Ford, Washington. Uranium ore processing operations occurred between 1956 and 1982. In 1989, groundwater contamination from below unlined tailings disposal areas was discovered in wells and in seeps discharging to the Chamokane Creek. In 1995, the Waste Management Section approved the decommissioning and closure plan for the site. In 2003, DMC demolished most of the mill buildings and associated structures. In 2009, DMC further discovered groundwater contamination below the ore stockpile area and initiated characterization of soil and groundwater contamination in this area. Activities at the site have since been focused on surface reclamation, groundwater characterization, and remediation. Activities during this review period included soil cleanup, process water evaporation, installation of a final radon barrier, preparations for the installation of a rip-rap erosion protection cover, radon flux measurements, environmental monitoring, and initiation of an alternate concentration limits application for groundwater.

Technical Staffing and Training

The Waste Management Section staff assigned to uranium recovery-related duties includes one Section Manager, three technical staff, and an engineer who serves as the Waste Management Section's subject matter expert in geotechnical engineering. This totals 2.07 FTE for uranium recovery licensing, inspections, and technical reviews. At the time of the review, two of the three technical staff were qualified license reviewers/inspectors and one staff was in training.

At the time of the review, there were no vacancies in the uranium recovery program. However, during the review period, there was significant turnover in the staff of the Waste Management Section, as well as a reduction in overall staffing levels. See Section 4.3 for a detailed discussion on the Waste Management Section staff turnover and staffing level changes during the review period, as all uranium recovery program staff were also involved in the LLRW program. The team determined that, at the time of the review, the Waste Management Section had adequate staffing levels and expertise to support the uranium recovery program.

The team reviewed the Waste Management Section Procedure: “Staff Qualification and Training,” that is used to train and qualify staff as technical license reviewers and inspectors. The Waste Management Section’s training and qualification procedure does not require all the NRC core courses listed in the NRC’s IMC 1248, Appendices H and I. The Waste Management Section’s procedure requires uranium recovery program staff to review the NRC’s NUREG-1620 “Standard Review Plan for the Review of a Reclamation Plan for Mill Tailings Sites Under Title II of the Uranium Mill Tailings Radiation Control Act of 1978,” as part of their qualification process. This document, although listed incorrectly in the NRC’s IMC 1248 Appendices H and I as NUREG 1621, is a key guidance for conventional uranium mill tailing reclamation and compliance with applicable regulatory criteria for uranium mill operation and waste disposal.

The team made a recommendation regarding the training and qualification program in Section 4.1, Compatibility Requirements. Despite not having a compatible procedure to the NRC’s IMC 1248, the team did not identify any performance concerns in uranium recovery licensing and inspection. The staff were qualified; had sufficient training, expertise, and experience to regulate the DMC site; and had a clear understanding of the regulatory process and requirements. Additionally, the team determined that the staff currently qualified as technical license reviewers and inspectors had completed all of the NRC core courses available to Agreement State staff as listed in the NRC’s IMC 1248, Appendices H and I, including the NRC’s Health Physics for Uranium Recovery Course (F-104) despite not having a compatible procedure. All qualified staff met the refresher training requirements directed by the NRC’s IMC 1248 during the review period.

Status of the Uranium Recovery Inspection Program

During the review period, the Waste Management Section performed 67 inspections at the DMC site which included five annual radiation safety inspections and 62 field inspections. The field inspections were performed whenever there were key decommissioning, reclamation, or construction activities being conducted by the licensee, or there was a need to evaluate the site condition. The team determined that the Waste Management Section completed inspections in accordance with the frequency established in the NRC’s IMC 2801, “Uranium Mill and 11e.(2) Byproduct Material Disposal Site And Facility Inspection Program.” There were no overdue inspections at the time of the review.

During the review period, all inspection findings were communicated to the licensee within 30 days of the exit. The findings were issued via an “Inspection Findings and

Licensee Acknowledgement,” form at the end of the inspection, or via a letter. The Waste Management Section supervisor reviewed and approved all letters and inspection reports.

Technical Quality of Inspections

The Waste Management Section’s inspectors follow procedures WMS 310, “Routine Inspection Procedure,” and WMS 320, “Inspection of U-Mills Reclamation & Construction Projects,” for DMC site inspections. The team noted that these procedures were compatible with the NRC’s Inspection Procedure 87654, “Uranium Mill, In-situ Leaching Uranium Recovery, 11e.(2) Byproduct Material Disposal Site Decommissioning Inspection,” and Inspection Procedure 88001, “On-Site Construction.” In addition, inspectors utilize a detailed DMC site-specific checklist to document the results of the annual radiation safety inspections. The completed checklist becomes the inspection report for each inspection. Each inspection report also includes a “Followup Inspection Summary Form” that lists each unresolved item from previous inspections and how each item was resolved during the inspection. For field inspections, the inspectors utilize a “Routine Field Inspection Form” to document inspection results and provide detailed documentation for all observations made during the field inspections and the comments.

The team evaluated all annual radiation safety inspections completed during the review period (five total). The annual radiation safety inspections covered all aspects of the uranium recovery and radiation safety program in accordance with the DMC license. The inspection casework included inspection reports and correspondence with the licensee. Additionally, the team reviewed five of the 62 field inspection reports. The inspection reports included sufficient information to support the inspection findings, contained the appropriate level of detail, and were approved and signed by the manager. The inspection casework also showed that staff routinely conducted independent environmental sampling and inspected areas crucial to uranium recovery such as those associated with the environmental monitoring program and reclamation activities.

Based on the review of the 10 inspection reports and interviews with staff, the team determined that the non-compliance findings during the review period were properly identified and clearly communicated with the licensee, and corrective actions were properly identified and enforced.

The team determined that supervisory accompaniments of all qualified inspectors were conducted annually during the review period. On April 4, 2018, the team accompanied staff on an inspection of the DMC site. Overall, the inspector demonstrated good performance-based inspection skills and conducted a high quality technical inspection. The inspector was well prepared and used a properly calibrated instrument. During the inspection, the inspector interviewed workers, observed key decommissioning and reclamation activities, verified compliance with approved procedures, and performed independent verification surveys. The inspector held entrance and exit interviews with the licensee management and technical personnel and communicated the scope of the inspection and findings clearly. The inspector demonstrated adequate and in-depth knowledge of the site conditions, engineering features, and requirements of the license.

Technical Quality of Licensing Actions

The Waste Management Section implements its own procedure for licensing actions. During the review period, the Waste Management Section completed one renewal and three amendments for the DMC license. The team reviewed the renewal and two license amendments. The DMC renewal application was submitted in December 2011. The Waste Management Section completed its review of the renewal action and issued the renewed license on June 24, 2014. The technical license reviewer utilized a DMC site-specific license review checklist to document completeness of the review. In addition to the license, license renewal application, and the license review checklist, the license renewal documentation package also included the license reviewer's technical analysis documentation on the engineering and hydrologic evaluations, correspondence between the license reviewer and the licensee, and all other supporting documents associated with the license renewal.

One of the two amendments reviewed involved the revision of the construction date of the final radon barrier on the tailings disposal area in 2017. The other involved adding a thorium-230 electroplated standard source to the license in 2017. For both amendments, license reviewers created technical memos detailing the decision analyses.

Based on the review of the licensing renewal and amendments, the team determined that the licensing work was thorough, complete, and of acceptable technical quality. Health, safety, and environmental issues were properly addressed in all three licensing actions. The license reviewers documented sufficient information to support the decisions. Quality assurance reviews by another qualified license reviewer were conducted and documented in accordance with their procedure WMS 201. The licenses and transmittal letters were reviewed and signed by the manager. Conditions added to the licenses were clear and can be inspected.

During the review period, the Waste Management Section also conducted a number of technical reviews for the DMC license. These reviews were conducted outside the license amendments, but were crucial to the oversight of the reclamation activities at the DMC site. The team reviewed three of these technical reviews, which included surety estimates, reduction of groundwater monitoring frequency, and radon flux measurements on the tailings disposal area. The team determined the technical reviews were complete, thorough, accurate, and of high technical quality. All license decisions related to these technical reviews were well-documented.

Technical Quality of Incident and Allegation Activities

The Waste Management Section implements its own procedures for incident and allegation responses and utilizes incident and allegation logs for event tracking. Each incident or allegation has its own record package that includes all correspondence between the Waste Management Section and the licensee or concerned individual, technical memos prepared by the Waste Management Section summarizing the response, and an incident or allegation checklist. The team determined that procedures

were in place and appropriate for handling incidents and allegations related to uranium recovery.

During the review period, there were no reportable incidents reported to the Waste Management Section. However, the Waste Management Section received three non-reportable events in 2017. The team reviewed these events and agreed that they were not reportable to the NRC.

The Waste Management Section received no allegations during the review period related to uranium recovery. There were no allegations referred by the NRC.

c. Evaluation

The team determined that, except as noted below, during the review period Washington met the performance indicator objectives listed in Section 4.4.a.

- The Agreement State's training and qualification program is not equivalent to the NRC's IMC 1248.

As discussed above and in Section 4.1, Compatibility Requirements, the Waste Management Section has a documented training and qualification program for new staff hired during the review period. However, the team determined the established procedure was not compatible to the NRC's IMC 1248 Appendices H and I. A recommendation was made by the team in Section 4.1, Compatibility Requirements.

Based on the IMPEP evaluation criteria in MD 5.6, the team recommends that Washington's performance with respect to the indicator, Uranium Recovery Program, be found satisfactory.

d. MRB Decision

The final report will present the MRB's conclusion regarding this indicator.

5.0 SUMMARY

As noted in Sections 3.0 and 4.0 above, Washington's performance was found to be satisfactory for seven of the nine performance indicators reviewed and satisfactory, but needs improvement, for the indicators Technical Quality of Licensing Actions and Compatibility Requirements. The team made two recommendations regarding Washington's performance and determined that the recommendation from the 2013 IMPEP review should be closed.

Accordingly, the team recommends that the Washington Agreement State Program be found adequate to protect public health and safety, and compatible with the NRC's program. Based on the results of the current IMPEP review and the weaknesses identified, the team is recommending a shortened timeframe for the next periodic meeting. The team recommends that the next full IMPEP review take place in approximately 4 years, with a periodic meeting in approximately 1 year.

Below are the team's recommendations, as mentioned in the report, for evaluation and implementation by Washington:

1. The team recommends that Washington review, revise, and update the training and qualification requirements for all aspects of its Agreement State Program to ensure the essential objectives of the NRC's IMC 1248 appendices A, B, D, E, H, and I are adopted. (Section 4.1)
2. The team recommends that Washington produce a technical evaluation report that provides the basis for the regulatory decision each time a significant licensing action for the LLRW disposal facility and/or a waste processing facility is processed. (Section 4.3)

LIST OF APPENDICES

Appendix A	IMPEP Review Team Members
Appendix B	Inspection Accompaniments

APPENDIX A

IMPEP REVIEW TEAM MEMBERS

Name	Areas of Responsibility
Monica Ford, Region I	Team Leader Technical Staffing and Training
Kathy Modes, NMSS	Team Leader in Training Compatibility Requirements Inspection Accompaniments
Todd Jackson, Region I	Status of Materials Inspection Program Technical Quality of Inspections
Jennifer Dalzell, Region III	Technical Quality of Licensing Actions
Randy Erickson, Region IV	Technical Quality of Incident and Allegation Activities Inspector Accompaniments
Daniel Samson, NY	Sealed Source and Device Evaluation Program
Muhammadali Abbaszadeh, TX	Low-Level Radioactive Waste Disposal Program: Status of the Low-Level Radioactive Waste Program, Technical Quality of Inspections, Technical Quality of Incident and Allegation Activities, Inspection Accompaniments
David Esh, NMSS	Low-Level Radioactive Waste Disposal Program: Technical Staffing and Training, Technical Quality of Licensing Actions
Shiya Wang, CO	Uranium Recovery Program Inspection Accompaniments

APPENDIX B

INSPECTION ACCOMPANIMENTS

The following inspection accompaniments were performed prior to the on-site IMPEP review:

Radioactive Materials Section

Accompaniment No.: 1	License No.: M-0303
Licensee: Diagnostic Associates	Priority: 2
License Type: Mobile Nuclear Medicine	Inspector: RM
Inspection Date: 01/23/18	

Accompaniment No.: 2	License No.: M-085
Licensee: Providence St. Peter Hospital	Priority: 2
License Type: Broad Scope Medical	Inspector: AH
Inspection Date: 01/24/18	

Accompaniment No.: 3	License No.: M-0306
Licensee: Swedish Radiosurgery Center	Priority: 2
License Type: Gamma Knife	Inspector: TH
Inspection Date: 01/25/18	

Accompaniment No.: 4	License No.: M-0236
Licensee: Tacoma Radiological Associates	Priority: 2
License Type: Medical Imaging and Therapy (with written directive required)	Inspector: MM
Inspection Date: 01/26/18	

Accompaniment No.: 5	License No.: IR-070
Licensee: Oregon Washington Laboratories	Priority: 1
License Type: Industrial Radiography	Inspector: TH
Inspection Date: 04/05/18	

Waste Section Low-level Radioactive Waste

Accompaniment No.: 1	License No.: WN-1019-2
Licensee: U.S. Ecology	Priority: 1
License Type: LLRW Disposal Facility	Inspector: KHS, CR
Inspection Date: 04/03-04/18	

Uranium Recovery

Accompaniment No.: 1	License No.: WN-I043-2
Licensee: Dawn Mining Company	Priority: 1
License Type: Uranium Mining	Inspector: BS
Inspection Date: 04/04/18	



STATE OF WASHINGTON

DEPARTMENT OF HEALTH

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July 12, 2018

Paul Michalak, Chief
Agreement States Program Branch
Division of Materials Safety, Security, State and Tribal Programs
Office of Nuclear Materials Safety and Safeguards
United States Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Mr. Michalak:

The state of Washington received the Draft IMPEP report detailing the findings of the IMPEP team on June 12, 2018. We have reviewed the report extensively and offer the following comments:

Section 1.0 Introduction

Page 1, paragraph 4:

The report identifies the different types of facilities Washington State regulates. Since the waste processing facility was reviewed independent of the other Common Performance Indicator licensees, the "radioactive waste processing facility" should be listed in this breakdown.

Section 3.1.b and c Technical Staffing & Training discussion and evaluation

Page 4, top of page:

The State agrees the existing in-house procedures were not compatible with IMC 1248. However, it should be noted that a detailed equivalent program existed at the agency level, overseen by the Department of Health's Office of Human Resources, and administered by the hiring manager. These agency plans are union requirements applicable to the entire union workforce. The specifics of each training plan are tailored to the position being filled and approved by Office and Division management. Typically the plan has the following areas: individual reading requirements (e.g., state regulations, NRC NUREG's), class work (e.g., NRC core classes or equivalent), and practical

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activities (e.g., writing licenses, see/do/lead inspections). Typical completion timeframe is two years.

The Radioactive Materials Section is actively updating its in-house procedures to be independently compatible with IMC 1248. We currently have three staff who are not fully qualified. These newer inspectors/license writers will transition to this program upon procedure approval.

Section 3.2 b Status of Materials Inspection discussion

Page 5, paragraph 3:

The State acknowledges the lack of Reciprocity inspections in 2017 and concurs with the root cause assessment. In order to prevent reoccurrence, the program managers are now held accountable proactively to ensure inspections are assigned to staff and performed. Additionally quarterly performance measures track the number of reciprocity candidates and the number of actual inspections performed.

Section 3.4 b Status of Materials Licensing Actions discussion

Page 10, paragraph 2:

After the onsite IMPEP review, staff conducted a thorough search for the missing documentation. In many cases the documentation was not found. However, in two cases, supporting documentation was located. In one case where the site visit documentation could not be located by the reviewer, the responsible inspector had documents indicating the visit occurred. In the other case involving a revised drawing, the license had been terminated in 2016 and the licensing folder moved to a "Terminated" section of the files. Documents in the folder provided details to a picture previously submitted.

Page 11, paragraph 2:

The Radioactive Materials Section has updated its procedures to use the NRC's Risk Significant Radioactive Materials (RSRM) checklist.

Section 4.1 b Compatibility Requirements

Page 16, paragraph 2:

Washington's equivalent regulations to Part 36 were adopted on July 9, 2018 and becomes effective on August 9, 2018. The state will submit these effective regulations to the NRC after that date. Additional background on the reason rulemaking was not initiated in the 2013-14 timeframe is the associated cost for rulemaking. Our then Office Director deemed it not cost effective to commence rulemaking and chose to regulate through the use of license conditions.

Section 4.2 b Sealed Source & Device Evaluation program discussion

Page 19, paragraph 2:

The Materials program appreciates the insight received from the reviewer during the IMPEP review. The program is committed to staying active even though only minor activity occurred during this review period. As such management has committed to adopting a training program compatible with the NRC's SS&D program (e.g., same program elements, but not as robust).

Section 4.3 Low-Level Radioactive Waste (LLRW) Disposal Program

1. Page 22, Section 4.3.b, Discussion, paragraph 1;
Page 24, Section 4.3.b, Status of LLRW Disposal Inspection Program, paragraph 1;
Page 25, Section 4.3.b, Technical Quality of Inspections, paragraph 3:

The IMPEP report is written as if Washington State has two LLRW disposal facilities: "two LLRW disposal licensees in Washington", and "at both LLRW disposal facilities". There is only one LLRW disposal licensee/facility in Washington State, the US Ecology Richland LLRW Disposal Site. Perma-Fix Northwest (PFNW) is a waste processing facility. PFWN is not licensed for disposal and is not considered, by Washington State, as a LLRW disposal facility or LLRW disposal licensee.

Page 23, Section 4.3.b, Discussion, paragraph 2:

The IMPEP report states PFWN is a disposal facility. For clarification, PFWN has two radioactive materials licenses; one license for the storage and treatment of radioactive waste, and one license for storage and treatment of mixed waste. PFWN is a commercial waste processing facility for storing and treating both low-level radioactive waste (thermal and non-thermal methods) and mixed waste (non-thermal methods only). PFWN is not a disposal facility.

2. Page 24, Section 4.3b, Technical Staffing and Training, paragraph 1:

The IMPEP report states that the training and qualification programs for the Low Level Radioactive Waste Disposal program is not compatible with the NRC's training program. The training as described in IMC 1248 identifies the required training for LLRW program staff. Please note that not all the training classes identified in IMC 1248 Appendix E and K are available to state staff. The IMPEP report states that the Waste Section Staff Qualification and Training procedure (WMS-102, Rev 3, May 23, 2016) does not require performance assessment trainings. It is not clear where in IMC 1248 it states that performance assessment trainings are required, or what these training classes are. The WMS-102 procedure lists those NRC training classes that are available to state staff.

The WMS-102 procedure identifies these trainings as “recommended” trainings, not “required” trainings. The term “recommended” was used since the WMS-102 procedure allows staff, with supervisor approval, to take an equivalent training course to the NRC specific course. This allowance is critical since not all NRC courses are available to state staff, nor are all the NRC courses available on a timely or yearly basis. The use of “recommended” also allows for the hiring of staff who have previously taken NRC courses.

The IMPEP team identified specific performance assessment NUREG documents from IMC 1248 Appendix K that were not individually identified in the WMS-201 reading list. Though the Waste Section’s WMS-102 procedure does not specifically identify all NUREGs by name, the WMS-102 procedure states “Additionally, personnel should review and become familiar with USNRC Regulatory Guides and NUREG series publications.”

The IMPEP team concluded that there were no performance issues, though the IMPEP team felt the Waste Section’s training and qualification program was not compatible with IMC-1248, due to the above stated comments with the training and qualification WMS - 102 procedure. The Waste Section values the discussions with the IMPEP reviewer regarding performance assessment training, though the Waste Section does not believe these WMS-102 procedure comments rise to the level of “not compatible” with IMC 1248. We look forward to discussing this with you during the upcoming Management Review Board meeting.

3. Page 26, Section 43.b, Technical Quality of Licensing Actions, paragraph 1:

The Waste Section values the discussions we had with the IMPEP team regarding performance assessments, and the comment that the US Ecology performance assessment being developed by the Waste Section “has the appearance” that the section is “approving its own analysis”. Though the Waste Section did develop the US Ecology performance assessment, this performance assessment was done as part of the over-arching Environmental Impact Statement (EIS) for the site, issued in 2004. The Washington State Environmental Policy Act (SEPA) regulations allow a state agency to be the lead and author the Environmental Impact Statement, as was the decision for the US Ecology EIS. The US Ecology EIS, in which the performance assessment was a part of, was issued jointly by Washington Department of Ecology and Department of Health. The agencies issued a Draft EIS (DEIS) in August of 2000; in May of 2004 the agencies

4. Page 26, Section 43 .b, Technical Quality of Licensing Actions, paragraph 3:

The Waste Section continually strives to improve our program and is appreciative of the discussions, comments and feedback from the IMPEP team. For clarification, both the US Ecology (LLRW disposal facility) and PFNW (waste processing facility) were treated as equivalent license types in the Technical Quality of Licensing Actions write-up and recommendation. There are significant differences in regulatory requirements between a LLRW disposal facility (Non Common Performance Indicator) and a waste processing facility (Common Performance Indicator). US Ecology is a 10 CFR Part 61 LLRW disposal facility, and is required to meet chapter 246-250 WAC (10 CFR 61) licensing requirements. On the other hand, PFNW is a waste processing facility (IMPEP Common Performance Indicator), and is required to meet the licensing requirements of chapter 246-235 WAC (10 CFR 30), as well as the Service Provider guidance provided in NUREG 1556, Volume 18, Rev.I. The generation of a technical evaluation report (TER) or safety analysis is not a regulatory requirement for Common Performance Indicators (e.g. Service Providers, such as the PFNW waste processing facility).

The US Ecology LLRW disposal facility license had two licensing actions during the IMPEP review period. One licensing action was the renewal of the license. This renewal licensing action was processed through the Washington State Environmental Policy Act (SEPA) (as required by state statute), and it was determined that no significant changes to the license occurred (from the SEPA assessment that was transmitted to all stake holders through a formal Addendum to the Environmental Impact Statement as part of the public process requirement): "There are no changes to the radioactive materials license that have not already been evaluated under existing SEPA documents. There are no changes to the approved closure plan that indicate any new significant adverse environmental impact."

Also, there were no technical or "significant" amendments of the US Ecology LLRW disposal facility license during the IMPEP review period that would warrant a technical evaluation report (TER). The second US Ecology LLRW disposal facility licensing action during the IMPEP review period was an amendment to implement the new chapter 246-237 WAC (10 CFR 37) Physical Protection requirements. Washington State has written TER's on US Ecology LLRW disposal site technical amendments that occurred in previous IMPEP review periods.

Though the State finds merit in this discussion, we find a formal recommendation is not merited and requests that the IMPEP team rescind the formal recommendation based on the above clarifications and responses.

5. Page 27, Section 4.3c, Evaluation, bullet 1:

The IMPEP report states the LLRW Disposal program "training and qualification program is not equivalent to NRC's IMC 1248". For clarification, training is a Compatibility Category C Program element, (from SA-200): "the essential objectives of which should be adopted by the State to avoid conflicts, duplications or gaps. The

manner in which the essential objectives are addressed need not be the same as NRC, provided the essential objectives are met". We believe we have met the essential objectives.

Section 4.4 Uranium Recovery Program

1. Page 31, Section 4.4b, Technical Staffing and Training, paragraph 3:

The IMPEP report states that the training and qualification programs for the Uranium Recovery program is not compatible with the NRC's training program. The training as described in IMC 1248 identifies the required training for Uranium Recovery program staff. Please note that not all the training classes identified in IMC 1248 Appendix H and I are available to state staff. The Waste Section Staff Qualification and Training procedure (WMS-102, Rev 3, May 23, 2016) lists those NRC training classes that are available to state staff, though F-104 (General Health Physics Practices for Uranium Recovery Course) was not on the list. The WMS-102 procedure identifies these as "recommended" trainings, not "required" trainings. The term "recommended" was used since the WMS-102 procedure allows staff, with supervisor approval, to take an equivalent training course to the NRC specific course. This allowance is critical since not all NRC courses are available to state staff, nor are all the NRC courses available on a timely or yearly basis.

Of importance in regards to training is the status of uranium recovery in Washington. Washington State has not had an operating uranium mill for over 20 years. Recent staff hiring/training has focused on the decommissioning aspects of uranium milling; specifically training on Alternate Concentration Limits (ACL's).

The IMPEP team identified NUREG 1620 as not being required reading for Uranium Recovery staff. In response, NUREG 1620 is required reading for Uranium Recovery staff. NUREG 1620 is specifically listed in the Waste Section's procedure WMS-102 Attachment 2, and the procedure states "As part of initial training in the Waste Management Section, individual shall read the documents listed in Attachment 2 'Reading List for Waste Management Personnel' for the areas in which they are involved."

The IMPEP team concluded that there were no performance issues, staff were qualified for this indicator, and staff had taken all of the required IMC-1248 trainings, including F-104, though the IMPEP team felt the Waste Section's training and qualification program was not compatible with IMC-1248 due to the above stated comments with the training and qualification WMS -102 procedure. Though the Waste Section does not believe these WMS-102 procedure comments rise to the level of "not compatible" with IMC 1248, we look forward to discussing this with you during the upcoming Management Review Board meeting.

2. Page 34, Section 4.4c, Evaluation, bullet 1:

The IMPEP report states the Uranium Recovery program "training and qualification program is not equivalent to NRC's IMC 1248". For clarification, training is a Compatibility Category C Program element, (from SA-200): "the essential objectives of which should be adopted by the State to avoid conflicts, duplications or gaps. The manner in which the essential objectives are addressed need not be the same as NRC, provided the essential objectives are met". We believe we have met the essential objectives.

Section 5.0 Summary

1. Page 35, Section 5.0, Summary, recommendation 2:

(Same comment as Section 4.3 Low-Level Radioactive Waste (LLRW) Disposal Program comment 4.)

The Waste Section continually strives to improve our program and is appreciative of the discussions, comments and feedback from the IMPEP team. For clarification, both the US Ecology (LLRW disposal facility) and PFNW (waste processing facility) were treated as equivalent license types in the Technical Quality of Licensing Actions write-up and recommendation. There are significant differences in regulatory requirements between a LLRW disposal facility (Non Common Performance Indicator) and a waste processing facility (Common Performance Indicator). US Ecology is a 10 CFR Part 61 LLRW disposal facility, and is required to meet chapter 246-250 WAC (10 CFR 61) licensing requirements. On the other hand, PFNW is a waste processing facility (IMPEP Common Performance Indicator), and is required to meet the licensing requirements of chapter 246-235 WAC (10 CFR 30), as well as the Service Provider guidance provided in NUREG 1556, Volume 18, Rev. 1. The generation of a technical evaluation report (TER) or safety analysis is not a regulatory requirement for Common Performance Indicators, (e.g. Service Providers, such as the PFNW waste processing facility).

The US Ecology LLRW disposal facility license had two licensing actions during the IMPEP review period. One licensing action was the renewal of the license. This renewal licensing action was processed through the Washington State Environmental Policy Act (SEPA), and it was determined that no significant changes to the license occurred (from the SEPA assessment that was transmitted to all stake holders as part of the public process requirement): "There are no changes to the radioactive materials license that have not already been evaluated under existing SEPA documents. There are no changes to the approved closure plan that indicate any new significant adverse environmental impact."

Also, there were no technical or "significant" amendments of the US Ecology LLRW disposal facility license during the IMPEP review period that would warrant a technical evaluation report (TER). The second US Ecology LLRW disposal facility licensing

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action during the IMPEP review period was an amendment to implement the new chapter 246-237 WAC (10 CFR 37) Physical Protection requirements. Washington State has performed TERs on US Ecology LLRW disposal site technical license amendments that occurred in previous IMPEP review periods.

Though the State finds merit in this discussion, we find a formal recommendation is not merited and requests that the IMPEP team rescind the formal recommendation based on the above clarifications and responses.

2. Page 35, Section 5.0, Summary, recommendation 2:

The IMPEP recommendation is written as if Washington State has multiple LLRW disposal facilities: "for the LLRW disposal facilities". Washington State does not have multiple LLRW disposal licensees/facilities. There is only one LLRW disposal licensee/facility in Washington State, the US Ecology Richland LLRW Disposal Site. Perma-Fix Northwest (PFNW) is a waste processing facility. PFWN is not licensed for disposal so is not considered by Washington State as a LLRW disposal facility or LLRW disposal licensee.

If you have any questions regarding these comments, please contact me at 360-236-3210.

Thank you for your cooperation and assistance.

Sincerely,



Mikel J. Elsen
Director

cc: Clark Halvorson, Assistant Secretary, Environmental Public Health, WDOH
Earl Fordham, Washington Department of Health
Kristen Schwab, Washington Department of Health

**Agenda for Management Review Board Meeting
July 24, 2018, 1:00 p.m. – 4:00 p.m. (ET), OWFN-17B04**

1. Announcement of public meeting. Request for members of the public to indicate they are participating and their affiliation.
2. MRB Chair convenes meeting. Introduction of MRB members, review team members, State representatives, and other participants.
3. Consideration of the Washington IMPEP Report.
 - A. Presentation of Findings Regarding Washington's Program and Discussion.
 - Technical Staffing and Training
 - Status of Materials Inspection Program
 - Technical Quality of Inspections
 - Technical Quality of Licensing Actions
 - Technical Quality of Incident and Allegation Activities
 - Compatibility Requirements
 - Sealed Source & Device Evaluation Program
 - Low-Level Radioactive Waste Disposal Program
 - Uranium Recovery Program
 - B. IMPEP Team Recommendations.
 - Recommendation for Adequacy and Compatibility Ratings
 - Recommendation for Next IMPEP Review
 - C. MRB Consultation/Comments on Issuance of Report.
4. Request for comments from Washington representatives, OAS Liaison, and State IMPEP team members.
5. Questions/comments from members of the public.
6. Adjournment.