



UNITED STATES  
**NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

December 20, 2021

Ms. Karen Beckley, Chief  
Bureau of Health Protection and Preparedness  
Nevada Department of Health and Human Services  
Division of Public and Behavioral Health  
4150 Technology Way, Suite 200  
Carson City, NV 89706

Dear Ms. Beckley:

The U.S. Nuclear Regulatory Commission (NRC) uses the Integrated Materials Performance Evaluation Program (IMPEP) in the review of Agreement State and NRC radiation control programs. Enclosed is the draft IMPEP report, which documents the results of the Nevada Agreement State review conducted remotely on November 1-5, 2021. In-person inspector accompaniments were conducted during the week of September 27 – 29, 2021. The team's preliminary findings were discussed with you and your staff on the last day of the review. The team's proposed recommendations are that the Nevada Agreement State Program be found adequate to protect public health and safety and compatible with the NRC's program.

The NRC conducts periodic reviews of radiation control programs to ensure that public health and safety are adequately protected from the potential hazards associated with the use of radioactive materials and that Agreement State programs are compatible with the NRC's program. The IMPEP process uses a team comprised of Agreement State and NRC staff to perform the reviews. All reviews use common criteria in the assessment and place primary emphasis on performance. The final determination of adequacy and compatibility of each program, based on the team's report, is made by the Chair of the Management Review Board (MRB) after receiving input from the MRB members. The MRB is composed of NRC senior managers and an Agreement State program manager.

In accordance with procedures for implementation of IMPEP, we are providing you with a copy of the draft report for your review and comment prior to submitting the report to the MRB. Comments are requested within 4 weeks from your receipt of this letter. This schedule will permit the issuance of the final report in a timely manner.

The team will review the response, make any necessary changes to the report, and issue it to the MRB as a proposed final report. The MRB meeting is scheduled to be conducted remotely on February 3, at 1:00pm ET via Microsoft Teams. The NRC will provide invitational travel for you or your designee to attend the MRB meeting at the NRC Headquarters in Rockville, Maryland. The NRC conference room location will be determined prior to the meeting and in-person attendance will be flexible. The NRC will also provide you with Microsoft Teams connection information prior to the meeting.

K. Beckley

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If you have any questions regarding the enclosed report, please contact Duncan White at [Duncan.White@nrc.gov](mailto:Duncan.White@nrc.gov).

Thank you for your cooperation.

Sincerely,



Signed by Anderson, Brian  
on 12/20/21

Brian C. Anderson, Chief  
State Agreement and Liaison Programs Branch  
Division of Materials Safety, Security, State,  
and Tribal Programs  
Office of Nuclear Material Safety and Safeguards

Enclosure:  
2021 Nevada Draft IMPEP Report

cc: John Follette, Manager

SUBJECT: NEVADA FY2021 DRAFT IMPEP REPORT DATE December 20, 2021

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

NOVEMBER 1-5, 2021

**DRAFT REPORT**

## **EXECUTIVE SUMMARY**

The results of the Integrated Materials Performance Evaluation Program (IMPEP) review of the Nevada Agreement State Program are discussed in this report. The review was conducted from November 1 – 5, 2021. In-person inspector accompaniments were conducted during the week of September 27 – 29, 2021.

The team found Nevada's performance to be satisfactory for all performance indicators:

- 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;
- Legislation, Regulations, and Other Program Elements; and
- Low-Level Radioactive Waste Disposal Program.

The team made two new recommendations and determined that the recommendation from the 2005 IMPEP review should be closed.

Accordingly, the team recommends that the Nevada Agreement State Program be found adequate to protect public health and safety and compatible with the NRC's program. The team recommends that the periodic meeting take place in approximately 2.5 years and the next IMPEP review take place in approximately 5 years.

## 1.0 INTRODUCTION

The Nevada Agreement State Program (Nevada) review was conducted, in-person, from November 1-5, 2021, by a team of technical staff members from the U.S. Nuclear Regulatory Commission (NRC) and the State of Arkansas. Team members are identified in Appendix A. In-person inspector accompaniments were conducted during the week of September 27, 2021. The review was conducted in accordance with the "Agreement State Program Policy Statement," published in the *Federal Register* on October 18, 2017 (82 FR 48535), and NRC Management Directive (MD) 5.6, "Integrated Materials Performance Evaluation Program (IMPEP)," dated July 24, 2019. Preliminary results of the review, which covered the period of July 15, 2017 to November 5, 2021 were discussed with the Nevada managers on the last day of the review.

In preparation for the review, a questionnaire addressing the common performance indicators and applicable non-common performance indicators was sent to Nevada on July 9, 2021, and is available in the NRC's Agencywide Documents Access and Management System (ADAMS) using the Accession Number [ML21190A189](#). Nevada provided its response to the questionnaire on October 15, 2021 (Accession Number [ML21194A115](#)).

The Nevada Agreement State Program is administered by the Radiation Control Program (the Program). The Program is part of the Bureau of Preparedness, Inspections, Assurance, and Statistics (Bureau) which is located within the Division of Public and Behavioral Health. Organization charts for Nevada are available in ADAMS (Accession Number [ML21292A028](#)).

At the time of the review, Nevada regulated 225 specific licenses authorizing possession and use of radioactive materials. The review focused on the radiation control program as it is carried out under a Section 274b. (of the Atomic Energy Act of 1954, as amended) Agreement between the NRC and the State of Nevada.

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

## 2.0 PREVIOUS IMPEP REVIEW AND STATUS OF RECOMMENDATIONS

The previous IMPEP review concluded on July 14, 2017. The final report is available in ADAMS (Accession Number [ML17277A442](#)). The results of the review and the status of the associated 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: The 2005 team recommended that the Program develop, implement, and maintain a reliable and comprehensive licensing and inspection

database that serves as an effective and efficient planning, tracking, and management tool.

Status: The team evaluated the 2005, 2009, 2013, and 2017 IMPEP reports and noted the progress Nevada had taken to address this recommendation. During this review, the team concluded that Nevada had created and fully implemented an electronic database that was adequate for their licensing program. However, the team determined that the inspection database had yet to achieve the full functionality that Nevada needed to manage their inspection program.

The team recommends the 2005 recommendation be closed and a new recommendation be opened to specifically address the outstanding issues with the inspection portion of the database, and is discussed further in Section 3.3.

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

Legislation Regulation and Other Program Elements: Satisfactory  
Recommendation: None

Sealed Source and Device Evaluation Program: Not reviewed  
Recommendation: None

Low-Level Radioactive Waste Disposal Program: Satisfactory  
Recommendation: None

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

### 3.0 COMMON PERFORMANCE INDICATORS

Five common performance indicators are used to review the NRC and Agreement State radiation control 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 assessed. 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 Nevada's performance with respect to the following performance indicator objectives:

- A well-conceived and balanced staffing strategy has been implemented throughout the review period.
- 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.
- 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.
- 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

Nevada's Program is comprised of seven technical staff members which equals 5.25 full-time equivalent (FTE) with five inspectors and license reviewers, one supervisor, and one program manager when fully staffed. At the time of the review, there was one vacant inspector/license reviewer position. During the review period, nine of the staff members left the program and eight staff members were hired. The positions were vacant from 2 to 24 months. Nevada has a training and qualification program compatible with the NRC's IMC 1248. The team noted that although Nevada's fully qualified technical staff maintained the required 24 hours of refresher training in 24 months, the requirement was not noted in their training policy. Nevada updated their training policy to include the requirement before the team completed the on-site review.

The technical staff in Nevada serve as both inspectors and license reviewers. The supervisor and two technical staff are located in Carson City. The program manager and three technical staff are located in Las Vegas. Nevada currently has one fully qualified inspector/license reviewer. Three of the technical staff were undergoing full qualifications and were using interim qualifications to perform inspections and license reviews for low-risk significant licensees. In addition, the supervisor and program manager are also qualified inspectors/license reviewers and are able to conduct inspections or license reviews when needed.

Temporary Instruction (TI) 003, "Evaluating the Impacts of the COVID-19 Public Health Emergency as part of the Integrated Materials Performance Evaluation Program (IMPEP)," states, in part, that license reviewers and inspectors may take longer to become qualified. These delays may be due to the inability to travel to attend training classes needed to complete qualification and inspections being delayed due to social distancing or other factors related to the COVID-19 pandemic. However, if these impacts are outside the Program's control, they should not be considered by the IMPEP team while establishing the overall rating, provided Nevada continued to maintain health, safety, and security. The team noted that although the COVID-19 pandemic has reduced the number of in-person training opportunities, Nevada's staff continues to enroll in NRC virtual classes, when available. The team noted that although the COVID-19 pandemic has reduced the number of in-person training opportunities for its staff, Nevada continues to work with the Organization of Agreement States and the NRC's Technical Training Center to take advantage of NRC on-line training classes. As such, the team concluded that Nevada continued to maintain health, safety, and security



during the pandemic and these delays in training were not considered by the IMPEP team while establishing the rating for this performance indicator.

c. Evaluation

The team determined that during the review period Nevada met the performance indicator objectives listed in Section 3.1.a, except for:

- Some vacancies were not filled in a timely manner.

During the review period, Nevada was not always able to fill vacancies in a timely manner. Recruiting and retaining qualified candidates has been a challenge for Nevada. The approval to post open vacancies can take up to two weeks. Although positions were posted within a short timeframe, Nevada has been faced with not having enough viable applicants. The team noted that although some vacancies took several months to fill, Nevada maintained satisfactory performance for all indicators during the review period to ensure the protection of health, safety, and security.

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

d. MRB Chair's Determination

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

3.2 Status of Materials Inspection Program

Inspections of licensed operations are essential to ensure that activities are being conducted in compliance with regulatory requirements and consistent with good safety and security practices. The frequency of inspections is specified in IMC 2800, "Materials Inspection Program," and is dependent on the amount and type of radioactive 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 Nevada'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 prescribed frequencies (<https://www.nrc.gov/materials/miau/mat-toolkits.html>).
- 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.
- Candidate licensees working under reciprocity are inspected in accordance with the criteria prescribed in IMC 2800 and other applicable guidance or compatible Agreement State Procedure.

- 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

Nevada performed 100 Priority 1, 2, 3, and initial inspections during the review period. Nevada performed all Priority 1, 2, 3, and initial inspections on time until the COVID-19 pandemic. The team noted that TI-003 states, in part, that for inspections that exceed the scheduling window with overdue dates falling inside the defined timeframe of the COVID-19 pandemic, the number of overdue inspections should be noted in the report but should not be counted in the calculation, provided Nevada continued to maintain health, safety, and security. As a result of the COVID-19 pandemic, seven initial inspections were performed overdue and 11 initial inspections were overdue at the time of the review. Since Nevada hand delivers all new licenses, the State’s presence at the licensee’s facility provides reasonable assurance that the licensee will use licensed material in manner that protects public health and safety although the initial inspection was delayed. In addition, a majority of the initial inspections were of licensees who had undergone a change of ownership and the licenses were issued by Nevada as new licenses. Therefore, the team did not include these 18 inspections when evaluating timeliness for this indicator. The team noted that Nevada has a schedule to perform all overdue initial inspections by December 31, 2021. As such, the team concluded that Nevada continued to maintain health, safety, and security during the pandemic and these overdue initial inspections were not considered by the IMPEP team while establishing the rating for this performance indicator.

Nevada’s inspection frequencies are the same for similar license types in NRC’s program.

A sampling of 21 inspection reports indicated that the inspection findings were communicated to the licensees within Nevada’s goal of 30 days after the inspection exit meeting or 45 days after the team inspection exit meeting.

Nevada performs a review of licensees applying for reciprocity by contacting the applicant’s home State regulatory agency, reviewing previous inspection history within Nevada, and reviewing the notifications provided by the licensee. Nevada maintains a goal of 20 percent of eligible reciprocity licensees and was maintaining this goal until the COVID-19 pandemic. During 2020, Nevada did not reach its 20 percent reciprocity goal due to limitations on inspection related travel during the pandemic. In 2021, Nevada is on track to meet its goal of 20 percent for the year. While Nevada did not meet their 20 percent reciprocity goal during 2020, this was due to inspection related travel during the pandemic and outside of their control. TI-003 states, in part, that if these impacts are outside the Program’s control, they should not be considered by the IMPEP team while establishing the overall rating, provided Program continued to maintain health, safety, and security.

c. Evaluation

The team determined that, during the review period, Nevada met the performance indicator objectives listed in Section 3.2.a. Based on the criteria in MD 5.6, the team recommends that Nevada’s performance with respect to the indicator, Status of Materials Inspection Program, be found satisfactory.

d. MRB Chair's Determination

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

3.3 Technical Quality of Inspections

Inspections, both routine and reactive, provide reasonable 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 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 Nevada'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 compatible with NRC guidance
- An adequate supply of calibrated survey instruments is available to support the inspection program.

b. Discussion

The team evaluated 21 inspection reports and enforcement documentation, and interviewed inspectors involved in materials inspections conducted during the review period. The team reviewed casework for inspections conducted by four of Nevada's current and former inspectors. The casework included the following inspection types and actions: medical, industrial, commercial, academic, research, and service provider licensees.

A team member performed three inspector accompaniments on September 27-29, 2021. The inspector accompaniments are identified in Appendix B. The team found that inspectors were well-prepared, thorough, and assessed the impact of licensed activities with respect to health, safety, and security. Inspectors observed the use of radioactive materials whenever possible. During interviews of licensee staff, inspectors used open ended questions, and were able to develop a basis of confidence that radioactive materials were being used safely and securely. Any findings observed were brought to the licensee's attention at the time of the inspection and again to the licensee's management during the inspection on-site exit. All findings and conclusions were well-founded and documented.

Supervisory accompaniments were conducted annually for all inspectors. The Radiation Control Manager was not accompanied in 2020 and had not yet been accompanied in 2021. The team noted that TI-003 states, in part, that supervisory accompaniments of all qualified inspectors may not be able to be performed in each calendar year impacted by the pandemic. However, if these impacts are outside the Program's control, they should not be considered by the IMPEP team while establishing the overall rating, provided Nevada continued to maintain health, safety, and security. The team determined that these accompaniments were not performed due to the COVID-19 pandemic restrictions in 2020 and the low number of inspections performed by the Radiation Control Manager in 2021. While the Radiation Control Manager was not accompanied in 2020, this was due to pandemic restrictions in 2020 and outside of their control. TI-003 states, in part, that if these impacts are outside the Program's control, they should not be considered by the IMPEP team while establishing the overall rating, provided Program continued to maintain health, safety, and security. As such, the team concluded that Nevada continued to maintain health, safety, and security during the pandemic and these overdue inspector accompaniments were not considered by the IMPEP team while establishing the overall rating for this performance indicator.

c. Evaluation

The team determined that during the review period Nevada met the performance indicator objectives listed in Section 3.1.a, except for:

- Supervisors, or senior staff as appropriate, did not conduct annual accompaniments of each inspector to assess performance and assure consistent application of inspection policies.

The Radiation Control Manager was not accompanied in 2020 and had not yet been accompanied in 2021. The Manager did not perform any inspections in 2020 due to the COVID-19 pandemic and had only conducted a few inspections to date in 2021. The team accompanied the Radiation Control Manager during this review and identified no issues. Nevada committed that this individual would be accompanied by the end of 2021.

During the review, the team evaluated Nevada's Centralized Licensing, Inspections, and Certification System (CLICS) and concluded that it works well for planning, assigning, and tracking inspections; however, the CLICS system does not appear to work well for push notifications and for the auditing of the inspection documentation. The issues associated with the CLICS system does not appear to affect the quality of the inspections being performed but does impact Nevada's ease of performing self-audits and quality reviews of completed inspections. Since the CLICS systems has met its objective for the licensing programs but not the inspection program, the team will be recommending that the 2005 recommendation be closed and a new recommendation be issued specific to the issues encountered with the inspection portion of the system. The team recommends that Nevada:

- Make the necessary improvements to the Centralized Licensing, Inspections, and Certification System (CLICS) to allow for system's full implementation as an effective management tool for Nevada's inspection program.

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

d. MRB Chair's Determination

The final report will present the MRB Chair's determination 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, implementation of those procedures, and documentation of communications and associated actions between the Nevada 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 Nevada'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., pre-licensing guidance, Title 10 *Code of Federal Regulations* (CFR) Part 37, financial assurance, etc.)
- 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 the physical protection of Category 1 and Category 2 quantities of radioactive material (10 CFR Part 37 equivalent).
- Documents containing sensitive security information are properly marked, handled, controlled, and secured.

b. Discussion

During the review period, Nevada performed 952 radioactive materials licensing actions. The team evaluated 21 of those licensing actions: six new applications, seven amendments, five renewals, and three terminations. The team evaluated casework which included the following license types and actions: service providers, waste brokers, industrial radiography, medical diagnostic and therapeutic, gauges, source material, self-shielded irradiators, nuclear pharmacy and accelerator production, decommissioning actions, and financial assurance. The casework sample represented work from seven former and current license reviewers.

The team noted that Nevada requires license renewals to be submitted every five years. The team reviewed Nevada's license templates, standard conditions, and licensing checklists. The team also reviewed the adequacy of Nevada's online licensing program, which was fully implemented during the review period. The Nevada licensing checklists provide reminders for various licensing action types including new license requests,

renewals, decommissioning, terminations, and change of control actions. Using the online licensing program, licensing actions were forwarded to, and reviewed by peer reviewers. Peer reviews were performed either by a supervisor or another qualified license reviewer to perform that type of review.

The team evaluated the 2005 recommendation that Nevada develop, implement, and maintain a reliable and comprehensive licensing and inspection database. The team concluded that Nevada had created and implemented an electronic database (CLICS) that was adequate for licensing. However, since CLICS has not yet reach full implementation to meet the needs on the Nevada's inspection program, the team is recommending closing the 2005 recommendation and opening a new recommendation specific to the inspection program.

The team evaluated the implementation of the Pre-Licensing Guidance and Risk Significant Radioactive Materials (RSRM) checklists. Nevada conducted pre-licensing visits for all new entities and new locations of use. However, for both new license applications and for applications including RSRM, Nevada used neither NRC's versions nor equivalents of the pre-licensing basis for confidence checklist, the pre-licensing site visit report template, nor RSRM checklist. Although the team determined that Nevada's implementation of these requirements was able to make a sufficient determination of the applicant's intent to use radioactive material for its intended purpose, the team noted that the omissions of current guidance during the review of licensing applications demonstrated a potential vulnerability to fully use all components available in these guides and checklists. Through interviews, the team noted that Nevada's staff was generally unfamiliar with the NRC's Pre-Licensing and RSRM guidance.

The team evaluated the effects of Nevada's timely implementation of NRC licensing guidance. In addition to the previously discussed issues with the Pre-Licensing and RSRM guidance implementation, the team identified a licensing condition and a checklist for medical licensing that had not been updated to reflect current NRC guidance. The condition, which made NRC's Part 37 legally binding, had not been removed upon Nevada's adoption of 10 CFR Part 37 in the State's regulations. Nevada removed all Part 37 license conditions prior to the conclusion of the team's on-site review. Nevada's checklist for medical licensing cited procedures in a superseded version of NRC's medical licensing guidance, NUREG 1556, Volume 9, revision 2. The current medical licensing guidance volume – NUREG 1556, Volume 9, revision 3 – was issued in September 2019. Nevada indicated that it would update its checklist for medical licensing to reflect the updated NRC medical licensing guidance. Medical licensing completed by Nevada was adequate to protect public health and safety in spite of use of superseded guidance.

Nevada has a policy of hand-delivering new licenses which gave the staff the opportunity to discuss ramifications of the license with the new licensee. CLICS facilitated online, web-based submission of licensing applications by licensees and new applicants. The submission platform included links to key guidance documents, for licensee reference. Items submitted online were readily available to managers, supervisors, reviewers, and peer reviewers.

#### c. Evaluation

The team determined that during the review period Nevada met the performance indicator objectives listed in Section 3.4.a, except for:

- Applicable guidance documents were available to reviewers and were not followed

(e.g., NUREG-1556 series, pre-licensing and RSRM guidance, regulatory guides, etc.).

The team identified several instances in which Nevada's licensing guidance and standard license conditions had not been updated in accordance with NRC's revisions. Nevada's delayed use of updates or alternative approaches for the affected documents and conditions were sufficient to protect health, safety, and security with respect to technical quality of licensing actions; however, the failure to fully implement current guidance presents a potential vulnerability to fully use all components available in these guides and checklists. The team recommends that Nevada:

- Fully implement compatible versions of licensing guidance and other program elements within 6 months of NRC designation to ensure the maintenance of an adequate and compatible program.

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

d. MRB Chair's Determination

The final report will present the MRB Chair's determination 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, safety, and security. An assessment of incident response and allegation investigation procedures, actual implementation of these procedures internal and external coordination, timely incident reporting, and investigative and follow-up 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 Nevada's performance with respect to the following performance indicator objectives:

- Incident response 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 follow-up actions are taken to ensure prompt compliance by licensees.
- Follow-up 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 Nuclear Material Events Database (NMED) and closed when all required information has been obtained.
- Allegations are investigated in a prompt, appropriate manner.
- Concerned individuals are notified within 30 days of investigation conclusions.
- Concerned individuals' identities are protected, as allowed by law.

b. Discussion

During the review period, 13 incidents were reported to the NMED and the NRC Headquarters Operations Officer (HOO) by Nevada. The team reviewed all 13 incidents: 3 thefts of portable moisture density gauges, 1 theft and recovery of a portable moisture density gauge, 2 damaged portable moisture density gauges (one of which involved a fatality), 1 fixed gauge found to be missing during an inventory walkdown of the facility, 1 damaged fixed gauge in a mining wall collapse, 2 medical events involving high-dose rate afterloader (HDR) treatments, 1 dose to the embryo fetus during a scan involving F-18, 1 patient underdose of greater than 20 percent involving Y-90 microspheres caused by patient intervention, and the loss and suspected accidental disposal to the landfill of a package containing microcurie quantities of radioactive materials.

When an incident is reported to Nevada, management reviews it and determines the appropriate response based on the circumstances of the incident and its health and safety significance. That response can range anywhere from responding immediately to reviewing the incident during the next inspection. For each incident that Nevada managers determined to have potential health and safety significance, inspectors were dispatched immediately. The team also found that Nevada responded to incidents in accordance with its established procedure.

The team identified one incident that had not been reported to the HOO, within the required timeframe. The incident involved a patient receiving an underdose of greater than 20 percent of the prescribed dose due to a treatment planning error of an HDR unit. Nevada self-identified the event not being reported when reviewing reporting of an unrelated incident. Nevada subsequently reported the incident to the HOO 21 days late. No other events were reported late during the review period.

During the review period, 11 allegations were received directly by Nevada with an additional three allegations referred by the NRC. The team found that Nevada 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 concerned individual's identities were protected whenever possible in accordance with Nevada State law.

c. Evaluation

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

d. MRB Chair's Determination

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

#### 4.0 NON-COMMON PERFORMANCE INDICATORS

Four non-common performance indicators are used to review Agreement State programs: (1) Legislation, Regulations, and Other Program Elements; (2) Sealed Source and Device (SS&D) Evaluation Program; (3) Low-Level Radioactive Waste (LLRW) Disposal Program; and (4) Uranium Recovery Program. The NRC retains



regulatory authority for Uranium Recovery Program; therefore, only the first three non-common performance indicators applied to this review.

#### 4.1 Legislation, Regulations, and Other Program Elements

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 State's agreement with the NRC. The statutes must authorize the State to promulgate regulatory requirements necessary to provide reasonable assurance of adequate 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. The 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 3 years after the effective date of the NRC's final rule. 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 6 months following NRC designation. A Program Element Table indicating the Compatibility Categories for those program elements other than regulations can be found on the NRC Web site at the following address: <https://scp.nrc.gov/regtoolbox.html>.

##### a. Scope

The team used the guidance in State Agreements procedure SA-107, "Reviewing the Non-Common Performance Indicator: Legislation, Regulations, and Other Program Elements," and evaluated Nevada'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 3 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 6 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.
- Sunset requirements, if any, do not negatively impact the effectiveness of the State's regulations.

##### b. Discussion

The Nevada Agreement State Program's current effective statutory authority is contained in Chapter 459 of the Nevada Revised Statutes. The Division of Public and Behavioral Health is designated as the State's radiation control agency. No legislation affecting the State's radiation control program was passed during the review period.

Nevada's administrative rulemaking process takes approximately 4 months from drafting to finalizing a rule. The public, NRC, other agencies, and potentially impacted licensees and registrants are offered an opportunity to comment during the process. Comments are considered and incorporated, as appropriate, before the regulations are finalized and approved by the Legislative Council Bureau (LCB). The LCB is a legal office within Nevada that first reviews and then later codifies regulations for all Nevada regulatory agencies. The LCB does not act on regulations starting 2 months before, extending through, and until 2 months after the Nevada Legislature is in session. The team noted that the Nevada Legislature is in session for 6 months every other year and the hold by the LCB can add a significant delay of months to years to codify the rules. Nevada stated that although the codification process can be lengthy, Nevada is able to enforce against regulations that are waiting to be codified by the LCB. Once codified, the newly formatted regulations are sent to the Secretary of State's Office for filing. The team noted that the State's rules and regulations are not subject to "sunset" laws.

During the review period, five NRC amendments were due for adoption. Nevada adopted all five amendments; three were adopted on time and two were adopted more than three years after the effect date of the NRC amendment. The two overdue amendments were both miscellaneous corrections amendments. At the time of this review, no amendments were overdue.

During the review period, a total of 21 additional program elements designated as necessary for the maintenance of an adequate and compatible program were issued by the NRC. These program elements included 12 revised volumes to NUREG-1556 consolidated licensing guidance, new or revised medical guidance for emergent medical modalities, and a major revision to IMC 2800, Materials Inspection Program. Nevada adopted these additional program elements within 6 months of NRC designation, but the implementation of those appropriate program elements into the licensing program was not completely successful. As discussed in Section 3.4, Nevada continued to use some checklists based on older licensing guidance and as a result, did not fully use the latest versions.

#### c. Evaluation

The team determined that, during the review period, Nevada met the performance indicator objectives listed in Section 4.1.a, except for:

- Regulations adopted by the Agreement State for purposes of compatibility or health and safety were, in some instances, not adopted later than 3 years after the effective date of the NRC regulation.
- Some other program elements, as defined in SA-200 that have been designated as necessary for maintenance of an adequate and compatible program, have not been adopted and implemented within 6 months of NRC designation.

The State adopted two NRC amendments overdue during the review period. Both amendments were miscellaneous corrections amendments. Given that these amendments included changes in addresses, corrected citations, and other minor corrections, the team concluded that the late adoption of these amendments had no impact on the Program's ability to protect health and safety and did not impact the orderly pattern of regulating radioactive materials across the National Materials Program.

The team noted that Nevada generally adopted and implemented the additional program elements within 6 months of NRC designation. However, as discussed in greater detail in Section 3.4, the team noted that Nevada was not fully using the current or compatible versions of all NRC licensing guidance and other program elements required to maintain an adequate and compatible program. Given that these gaps in the implementation was limited to Nevada's licensing program, the team recommends a recommendation to address this issue (see Section 3.4).

Based on the IMPEP evaluation criteria in MD 5.6, the team recommends that Nevada's performance with respect to the indicator, Legislation, Regulations, and Other Program Elements, be found satisfactory.

#### MRB Chair's Determination

The final report will present the MRB Chair's determination 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 the SS&D reviews and establishes useful guidance for teams. In accordance with MD 5.6, 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 Nevada'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

Nevada current does not have any active SS&D registry sheets under its jurisdiction. No new SS&D application requests were submitted during the review period. The team noted that Nevada has an agreement with the State of California, whereby California's qualified SS&D reviewers will conduct product safety evaluations for the State of Nevada, when SS&D requests are received.

#### c. Evaluation

The team did not evaluate this performance indicator.

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

The objective is to determine if Nevada's LLRW disposal program is adequate to protect public health and safety, and the environment. 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 Nevada'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, non-compliances, 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.
- 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.
- 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 fingerprinting orders (10 CFR 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, 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 follow-up actions are taken to ensure prompt compliance by licensees.
- Follow-up 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 and closed when required information is obtained.
- 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 Beatty LLRW disposal facility ceased the acceptance of LLRW in 1992 after 30 years of operation. The former disposal area covered approximately 22 acres. The facility is located on land owned by the State adjacent to an operating hazardous waste management facility (HWMF). During the closure period, the site operator, US Ecology, Inc., completed site specific requirements in accordance with the "Site Stabilization and Closure Plan" dated September 1992 to assure that the facility was closed in accordance with Nevada regulations, the radioactive material license, and the lease agreement between the State and the site operator. In 1997, the radioactive material license was transferred to the State of Nevada and the site entered the institutional control period. The Bureau is the licensee for the State.

On October 18 and 19, 2015, an industrial fire occurred at the closed LLRW disposal facility in the area of Trench 14. The fire was a result of the intrusion through the trench cover of several inches of rainwater over a short period of time coming in contact with sodium buried in the trench during the early 1970s. Radiation surveys conducted at the time by Nevada, HWMF operator, and local county did not indicate any radiation release from the facility as a result of the fire. After initial repairs to the cover, Nevada contracted with the HWMF operator later in 2016 to use approximately 166,000 cubic yards of native soil from a newly constructed hazardous waste disposal cell to construct a temporary cover. The temporary cover added from a few feet to 15 feet of soil depth over the entire LLRW disposal facility and was sloped from the middle towards all sides to facilitate rainwater runoff.

From September 2020 to February 2021, the HWMF operator added approximately 631,000 cubic yards of soil from another newly constructed hazardous waste disposal cell over the 2016 cover. This second phase added up to 12 feet of cover to the slopes and up to 20 feet on the top of the cover. Two additional phases are planned in 2025 and 2030 to complete the new cover. When completed, the new cover for the closed LLRW facility will be integrated into the two adjacent hazardous waste disposal cells that are currently closed.

Technical Staffing and Training

In order to effectively implement the license, Nevada staff are responsible for periodic radiation surveys and surveillance inspections of the closed facility. This activity is considered an ancillary duty for staff qualified in accordance with Nevada's inspector qualification training program, as described in Section 3.1.

### Status of LLRW Disposal Inspection Program

Nevada conducts quarterly radiation surveys and surveillance inspections of the closed facility. This is more frequent than the 6-month interval required in the “Site Stabilization and Closure Plan.” Nevada completed all required inspections of the facility during the review period.

### Technical Quality of Inspections

The team evaluated 8 of the 17 LLRW inspection reports during the review period which documented the quarterly radiation surveys and surveillance inspections. Each report included radiation measurements, review and documentation of erosion, water pooling, fissures and subsidence on the cover, and review of precipitation from a local weather station. From late 2020 to early 2021, the inspection reports documented the construction activities that added additional cover material. The team found that findings were properly documented and focused on health and safety.

### Technical Quality of Licensing Actions

Nevada completed two LLRW licensing actions during the review period. The team examined both licensing actions which included an amendment to change the Radiation Safety Officer and renew the license. Both licensing actions were thorough, complete, and of acceptable technical quality with health and safety issues properly addressed.

### Technical Quality of Incident and Allegation Activities

No incidents or allegations involving the LLRW program were identified during the review period.

#### c. Evaluation

The team determined that, during the review period, Nevada met the performance indicator objectives listed in Section 4.3.a. Based on the criteria in MD 5.6, the team recommends that Nevada’s performance with respect to the indicator, Low-Level Radioactive Waste Disposal Program, be found satisfactory.

#### d. MRB Chair’s Determination

The final report will present the MRB Chair’s determination regarding this indicator.

## 5.0 SUMMARY

Nevada’s performance was found to be satisfactory for all performance indicators reviewed.

The team made two new recommendations and determined that the recommendation from the 2005 IMPEP review should be closed.

The team is recommending the following two new recommendations that:

- Nevada make the necessary improvements to the Centralized Licensing, Inspections, and Certification System (CLICS) to allow for system’s full

implementation as an effective management tool for Nevada's inspection program.

- Nevada fully implement compatible versions of licensing guidance and other program elements within 6 months of NRC designation to ensure the maintenance of an adequate and compatible program.

Accordingly, the team recommends that Nevada be found adequate to protect public health and compatible with the NRC's program. Based on the results of the current IMPEP review, the team recommends that the periodic meeting takes place in approximately 2.5 years and the next full IMPEP review take place in approximately 5 years.



## LIST OF APPENDICES

Appendix A	IMPEP Review Team Members
Appendix B	Inspector Accompaniments

## APPENDIX A

### IMPEP REVIEW TEAM MEMBERS

<b>Name</b>	<b>Areas of Responsibility</b>
Duncan White, NMSS	Team Leader Legislation, Regulations, and Other Program Elements Low-Level Radioactive Waste Disposal Program
Farrah Gaskins, Region I	Team Leader in Training Technical Staffing and Training
Randy Erickson, Region IV	Technical Quality of Incident and Allegation Activities Inspector Accompaniments
Sara Forster, Region III	Technical Quality of Licensing Actions
Steven Mack, Sate of Arkansas	Status of Materials Inspection Program Technical Quality of Inspections

## APPENDIX B

### INSPECTOR ACCOMPANIMENTS

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

Accompaniment No.: 1	License No.: 03-11-0634-01
License Type: Nuclear Pharmacy	Priority: 2
Inspection Date: 04/27/21	Inspector's initials: JF

Accompaniment No.: 2	License No.: 03-12-13639-01
License Type: Nuclear Medicine	Priority: 3
Inspection Date: 04/28/21	Inspector's initials: HB

Accompaniment No.: 3	License No.: 00-11-0693-01
License Type: Industrial Radiography	Priority: 1
Inspection Date: 04/29/21	Inspector's initials: CC