



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

March 4, 2026

Christopher Hoagland, Director
Air and Radiation Administration
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, MD 21230

SUBJECT: MARYLAND FINAL IMPEP REPORT

Dear Christopher Hoagland:

On February 10, 2026, the Management Review Board (MRB) met, which consisted of the U.S. Nuclear Regulatory Commission (NRC) senior managers and an Organization of Agreement States Liaison to the MRB, to consider the proposed final Integrated Materials Performance Evaluation Program (IMPEP) report on the Maryland Agreement State Program. The MRB Chair found the Maryland program adequate to protect public health and safety, and compatible with the NRC program.

The enclosed final report documents the IMPEP team's findings and summarizes the results of the MRB meeting. Based on the results of the IMPEP review, the MRB Chair determined that the next periodic meeting will take place in approximately 2 years, with the next IMPEP review of the Maryland Agreement State Program taking place in approximately 4 years.

I appreciate the courtesy and cooperation extended to the IMPEP team during the review. I also wish to acknowledge Maryland's performance and your continued support for the Agreement State program. I look forward to our agencies continuing to work cooperatively in the future.

Sincerely,

A handwritten signature in cursive script that reads "Kathryn M. Brock".

Brock, Kathryn signing on behalf
of Kock, Andrea
on 03/04/26

Andrea L. Kock, Director
Office of Nuclear Materials Safety
and Safeguards

Enclosure:

1. Maryland Final IMPEP Report
2. Maryland MRB Meeting Participants

cc: Eva Nair
Air and Radiation Program Manager
Maryland Department of the Environment

MARYLAND FINAL IMPEP REPORT DATE March 4, 2026

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

AUGUST 25–29, 2025

FINAL REPORT

EXECUTIVE SUMMARY

The results of the Integrated Materials Performance Evaluation Program (IMPEP) review of the Maryland Agreement State Program (Maryland) are discussed in this report. The review was conducted by the IMPEP team on August 25–29, 2025. Inspector accompaniments were conducted during the week of July 22, 2025.

The team found Maryland's performance satisfactory for all seven performance indicators reviewed: 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 Sealed Source and Device Evaluation Program.

The Management Review Board (MRB) Chair agreed with the team's recommendation to close the 2021 and 2022 follow-up IMPEP review recommendations and made no new recommendations.

Accordingly, the MRB Chair found Maryland's radiation control program performance adequate to protect public health and safety and compatible with the NRC's program. The MRB Chair also directed that a periodic meeting be held in approximately 2 years followed by the next IMPEP review in approximately 4 years.

1.0 INTRODUCTION

The Maryland Agreement State Program (Maryland) Integrated Materials Performance Evaluation Program (IMPEP) review was conducted on August 25–29, 2025, by a team of technical staff members from the U.S. Nuclear Regulatory Commission (NRC), the State of Louisiana, the State of South Carolina, and the Commonwealth of Kentucky. Team members are identified in Appendix A. Inspector accompaniments were conducted during the week of July 22, 2025, and are identified in Appendix B. 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 August 26, 2022 – August 29, 2025, for the Technical Quality of Licensing Actions indicator and July 17, 2021 – August 29, 2025, for all other indicators, were discussed with Maryland 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 Maryland on May 21, 2025. Maryland provided its response to the questionnaire on August 11, 2025. A copy of the questionnaire response is available in the NRC’s Agencywide Documents Access and Management System Accession No. [ML25247A057](#).

The team issued a draft IMPEP report to Maryland on December 2, 2025, for factual comment in [ML25273A250](#). Christopher R. Hoagland, Director of the Air and Radiation Administration, in the Maryland Department of the Environment, Maryland provided comments on the draft IMPEP report by letter dated On December 10, 2025 ([ML25352A153](#)). The IMPEP team addressed Maryland’s comments in the final IMPEP report, as appropriate.

The Maryland Agreement State Program is administered by the Radioactive Materials Program in the Office of Radiological Health. Organization charts for Maryland are available in [ML25232A103](#).

At the time of the review, Maryland regulated 431 specific licenses authorizing possession and use of radioactive materials. The review focused on the radiation control program as it is carried out under Section 274b (of the Atomic Energy Act of 1954, as amended) Agreement between the NRC and the State of Maryland.

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

2.0 PREVIOUS IMPEP REVIEW AND STATUS OF RECOMMENDATIONS

The previous follow-up IMPEP review was concluded on August 23-25, 2022. The final report is available in [ML22343A189](#). The 2022 follow-up IMPEP review was a limited review only covering the Technical Quality of Licensing Actions performance indicator. The results of the review are as follows:

Technical Quality of Licensing Actions: Satisfactory but Needs Improvement

Recommendation: Maryland review the qualifications of all Radiation Safety Officers (RSOs), Authorized Users (AUs), and Authorized Medical Physicists (AMP) listed on their medical

licenses to ensure that they meet the qualifications in accordance with Maryland's regulations for medical use of byproduct material.

The 2025 IMPEP team found that licensing actions were reviewed, approved, and confirmed to be technically sound. The team also noted that current and newly hired staff were documenting the supporting basis for the review of qualifications for RSOs, AUs, and AMP accordingly. Additionally, Maryland updated licensing procedures to ensure support documentation is in the file instead of in emails to ensure continuity.

The team proposes that this recommendation be closed.

Recommendation: Maryland develop and implement a procedure to ensure protection of sensitive information as it applies to written correspondence with licensees.

Based on the 2022 follow-up IMPEP review, the team recommended, and the Management Review Board (MRB) Chair agreed that the 2021 IMPEP review recommendation related to the protection of sensitive information should be closed.

In addition, the 2022 follow-up IMPEP made one new recommendation and the MRB Chair agreed.

Recommendation: Maryland update licensing procedures to ensure the reviewer conducts a thorough analysis of the licensee's inspection and enforcement history of renewal applications and that Maryland conduct training on the updated procedures.

In September 2022, Maryland added a box on the cover tracking sheet for license reviewers to verify that they had checked the inspection and escalated enforcement history. The team determined that the state conducted training and implemented the cover tracking sheet, and checked the inspection and escalated enforcement history during the review of renewal applications.

The team proposes that this recommendation be closed.

The 2025 IMPEP team noted that the deficiencies identified in this indicator during the 2021 review and 2022 follow-up had been corrected and that sustained performance over this review period had been demonstrated. See Section 3.4 for additional details.

The last full IMPEP review was concluded on July 12-16, 2021. The final report is available in [ML21302A094](#). The results of the review 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 Incident and Allegation Activities: Satisfactory
Recommendation: None

Legislation, Regulations, and Other Program Elements: Satisfactory
Recommendation: None

Sealed Source and Device (SS&D) Evaluation Program: Satisfactory
Recommendation: None

Overall finding: based on the results of the 2021 IMPEP review, Maryland was found adequate to protect public health and safety and compatible with the NRC's program. The MRB Chair determined that a follow-up IMPEP review and a periodic meeting should take place in 2022. The 2022 follow-up IMPEP review ([ML22343A189](#)) resulted in the MRB Chair determining that Maryland be found adequate to protect public health and safety and compatible with the NRC's program, and that a periodic meeting take place in approximately 18 months with the next IMPEP review in approximately 3 years. The results of 2022 and 2024 periodic meeting summaries can be found at [ML22333A775](#) and [ML24079A160](#), respectively. As a result of the 2025 IMPEP review, the team recommends that Maryland's radiation control program be found adequate to protect public health and safety and compatible with the NRC's program. The team also proposes closing the 2021 and 2022 follow-up IMPEP review recommendations.

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 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) [SA-103](#), "Reviewing the Common Performance Indicator: Technical Staffing and Training," and evaluated Maryland'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 the NRC Inspection Manual Chapter (IMC) [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.

b. Discussion

At the time of the review, Maryland was comprised of 12 full time equivalents (FTE). This included 11 technical staff and the Radioactive Materials Division Chief. Also included in the Agreement State Program, but not included in the 12 FTE, is the Radiation Control Program Director (RCPD). The RCPD splits their time between the Agreement State Program and the Radiation Machines Division. The specific amount of FTE can vary depending on the workload. The team determined that the program had 12.25 FTE, comprising 11 technical and 1 administrative, and 0.25 contract license reviewer. The technical staff include six license reviewers and four inspectors. Since the August 2021 IMPEP review, 13 staff have left the program and 10 staff were hired, 1 was promoted, and 1 transferred to a new position. Reasons for staff departure varied and included retirement and taking higher paying jobs outside of the State Government. The positions were vacant between 64 days to 12 months. At the time of the review, the State was fully staffed. The high staff turnover was discussed with the program; however, the team noted minimal impact to performance.

The team noted that Maryland’s qualification journals are compatible with IMC 1248. No changes have been made to the qualification journal during the review period. There are currently eight technical staff members undergoing qualification training (three inspectors and five license reviewers). Additionally, the Maryland program hired another Agreement State employee as a contract employee to help with the performance of licensing actions. The team confirmed that the State obtained and verified the employee’s IMC 1248 Appendix A qualifications to independently perform licensing actions on all license types regulated by Maryland. Refresher training for qualified staff is being tracked, and all staff requiring refresher training are currently meeting the requirement to complete 24 hours of refresher training every 24 months.

c. Evaluation

The team determined that, during the review period, Maryland met the performance indicator objectives listed in Section 3.1.a. Based on the criteria in MD 5.6, the team recommends that Maryland’s performance with respect to the indicator, Technical Staffing and Training, be found satisfactory.

d. MRB Discussion and Chair’s Determination

The MRB Chair agreed with the team’s recommendation and found Maryland’s performance with respect to this indicator satisfactory.

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 [SA-101](#), “Reviewing the Common Performance Indicator: Status of the Materials Inspection Program,” and evaluated Maryland’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

During the review period, Maryland performed 244 Priority 1, 2, and 3 inspections and 37 initial inspections. Two of the 244 Priority 1, 2, and 3 inspections, and 0 of the 37 initial inspections were conducted overdue, or less than 1 percent. The two overdue inspections were determined to be overdue because of incorrect priority codes being assigned to the licenses in the inspection database. The team notes that Maryland uses a database to track the timeliness of inspection completions.

Maryland’s inspection frequencies were mostly identical to the NRC’s program, except for a few modalities which were inspected more frequently. For instance, some Priority 5 medical and industrial license types were inspected at a Priority 3 frequency.

Maryland follows their equivalent procedures to IMC 2800 for the performance of reciprocity inspections. Maryland uses a risk-informed checklist to identify the reciprocity candidates for inspection. The team reviewed Maryland’s inspection of candidate licensees working under reciprocity and determined that during the review period, Maryland inspected 4 of 18 candidates in 2021 (22%), 7 of 25 candidates in 2022 (28%), 6 of 29 candidates in 2023 (21%), and 5 of 25 candidates in 2024 (20%). The team determined that Maryland’s performance of reciprocity inspections aligned with their procedures.

The team evaluated 22 inspection reports and noted that none of the inspection findings were communicated to the licensees beyond 30 days after the inspection exit or 45 days after the team inspection exit.

c. Evaluation

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

d. MRB Discussion and Chair's Determination

The MRB Chair agreed with the team's recommendation and found Maryland's performance with respect to this indicator satisfactory.

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 [SA-102](#), "Reviewing the Common Performance Indicator: Technical Quality of Inspections," and evaluated Maryland'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 the NRC guidance.
- An adequate supply of calibrated survey instruments is available to support the inspection program.

b. Discussion

The team evaluated 22 inspection reports and enforcement documentation, and interviewed inspectors involved in materials inspections conducted during the review period. The reviewed casework included 18 routine inspections, 1 initial inspection, and 3 reciprocity inspections. The inspection casework is identified in Appendix C. The team reviewed casework for inspections conducted by seven staff, including current staff and former staff, and covered a cross-section of medical, industrial, commercial, academic, and research license types. The team found that inspection documentation was complete, and when required, marked to prevent public disclosure. Issued citations were fully supported in the inspection reports. Inspection documentation indicated that inspections were performed with enough detail to evaluate licensee performance in meeting regulatory and license condition requirements.

During the week of July 22, 2025, the team accompanied three inspectors. The team found that each inspector was well-prepared, knowledgeable of the requirements for each license type, and thoroughly assessed licensed activities to identify potential health, safety, and security concerns. The inspector accompaniments are identified in Appendix B. Any findings observed were brought to the attention of the licensee at the time of the inspection and again to the licensee's management during the inspection exit meeting.

The team verified that Maryland's inspection results were well documented with respect to health, safety, and security. Maryland conducted both unannounced and announced performance-based inspections and implemented procedures for documenting violations identified during inspections. Violations were well supported by appropriate regulations and license conditions and were signed by the supervisor before being transmitted to the licensee. The team found that Maryland adequately ensured appropriate follow-up on inspection findings, including identifying the appropriate root causes for findings. Maryland also ensured that all active inspectors were accompanied by a supervisor annually to assess performance and the consistent application of inspection policies.

The team determined that Maryland had a sufficient type and number of radiation survey instruments to support the program. Survey instruments were calibrated by an outside commercial vendor. Reviewed records indicated all survey instruments were calibrated on an annual basis.

c. Evaluation

The team determined that, during the review period, Maryland met the performance indicator objectives listed in Section 3.3.a. Based on the criteria in MD 5.6, the team recommends that Maryland's performance with respect to the indicator, Technical Quality of Inspections be found satisfactory.

d. MRB Discussion and Chair's Determination

The MRB Chair agreed with the team's recommendation and found Maryland's performance with respect to this indicator satisfactory.

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 Maryland 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 [SA-104](#), “Reviewing the Common Performance Indicator: Technical Quality of Licensing Actions,” and evaluated Maryland’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 of the *Code of Federal Regulations* (10 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 (RSRM) 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, Maryland performed 1,168 radioactive materials licensing actions. The team evaluated 24 licensing actions including new applications, amendments, renewals, terminations and transfers of control. The licensing casework is identified in Appendix D. The team evaluated casework which included the following license types: medical and academic broad scopes, diagnostic and therapeutic nuclear medicine, brachytherapy, emerging medical technology, gamma knife, radiopharmacy, industrial radiography, source material, research and development, portable and fixed gauges, distribution, and bankruptcy. The casework sample represented work from current and former license reviewers.

Maryland reviewed and processed licensing actions in a timely manner and in accordance with its established metrics for timeliness. There were 53 licensing actions backlogged at the time of the review. The team noted the Maryland’s significant efforts to reduce the backlog from 200 to 53 throughout the review period, while prioritizing actions based on risk and public health and safety. Maryland utilized a peer review process for each licensing action,

ensuring that a qualified license reviewer and supervisor evaluated each action for completeness and technical quality. The peer review process did not delay Maryland's licensing efforts. Rather, it offered additional oversight of licensing actions to promote consistency as well as to minimize correcting minor licensing errors. The peer review process also provided opportunities for newer staff to review less common or more complex modalities while working with a fully qualified license reviewer.

Maryland's license application clearly stated the commitments that each licensee needed to make and effectively tied each expectation to existing regulatory requirements. Requests for additional information were clear, and licensees were timely in providing the information needed for the program to complete the license action. All actions reviewed were thorough and well documented with a clear basis established. Deficiency letters were used at the proper time and clearly stated the regulatory position. Maryland consistently utilized compatible licensing guidance as well as a pre-licensing and RSRM checklists when appropriate. Maryland developed model licenses with standard license conditions to promote a consistent approach to licensing. The licensing casework reviewed was consistent and clearly articulated license conditions that were enforceable.

The review team did not identify any new bankruptcy filings over the review period, but did verify that Maryland had procedures to appropriately handle bankruptcy actions. Maryland conducted a financial assurance review for each licensee at a three-year frequency and during renewals. Files containing sensitive and security related information were appropriately marked to prevent unintended release and financial assurance instruments were maintained in a secure locked cabinet.

c. Evaluation

The team determined that, during the review period, Maryland met the performance indicator objectives listed in Section 3.4.a.

The program had two open recommendations related to the Technical Quality of Licensing Actions from the prior IMPEP and follow-up IMPEP reviews:

- Update licensing procedures to ensure reviewers conduct a thorough analysis of the licensee's inspection and enforcement history during review of renewal applications and that Maryland conduct training on the updated procedures.

In September 2022, Maryland added a box on the cover tracking sheet for license reviewers to verify that they had checked that inspection and escalated enforcement history had been reviewed. The team determined that the state conducted training and implemented the cover tracking sheet and checking the inspection and escalated enforcement history during the review of renewal applications. The team proposes closing this recommendation.

- Review the qualifications for RSOs, AUs, and AMP listed on their medical licenses to ensure that they meet the qualifications in accordance with Maryland's regulations for medical use of byproduct material.

The 2025 IMPEP team found that licensing actions were reviewed, approved, and confirmed to be technically sound. The team also noted that current and newly hired staff were documenting the supporting basis for the review of qualifications for RSOs, AUs, and AMP

accordingly. Additionally, Maryland updated licensing procedures to ensure support documentation is in the file instead of in emails to ensure continuity. The team proposes closing this recommendation.

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

d. MRB Discussion and Chair's Determination

The MRB Chair agreed with the team's recommendation and found Maryland's performance with respect to this indicator satisfactory. The MRB Chair also agreed with the team's recommendation to close the recommendations associated with this performance 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 [SA-105](#), "Reviewing the Common Performance Indicator: Technical Quality of Incident and Allegation Activities," and evaluated Maryland'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 the NRC.
- Incidents are reported to the Nuclear Material Events Database 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, 50 incidents were reported to Maryland. The team evaluated 20 radioactive materials incidents, which included 6 lost or stolen radioactive materials, 5 damaged equipment, 2 potential overexposures, 1 medical event, 1 equipment failure, 1 radiography source disconnect, 1 abandoned source, 1 leaking source, and 2 improper disposals of radioactive materials. Maryland dispatched inspectors for on-site follow-up for nine of the cases reviewed.

When notified of an incident, Maryland management assessed each incident for safety significance to determine the appropriate level of response. Maryland's response included a review of the licensee's inspection and compliance history to identify any issues that could potentially contribute to the incident occurrence. Once Maryland management determined the appropriate response level, a team approach was employed to foster detailed, well documented investigations that reflected the full scope of analysis. All incidents were investigated by a team of at least two health physicists, which often included a supervisor. Responses ranged from immediate responses to reviewing the incident during the next routine inspection. The team found that Maryland's evaluation of incident notifications and associated incident responses to be thorough, well balanced, complete, and comprehensive.

Maryland periodically updated its Incident and Allegations Procedure with the most recent revision in August of 2025. Maryland adhered to the established guidance in [SA-300](#), "Reporting Material Events," when evaluating the reportability of incidents received. It also appropriately retracted incidents when the incident investigations revealed additional information and were found to no longer meet established reporting criteria.

The team evaluated Maryland's reporting of incidents to the NRC's Headquarters Operations Officers (HOO). The team noted that in each case requiring HOO notification, Maryland reported incidents within the required time frame. The team also assessed whether Maryland had not reported any required incidents to the HOO. The team did not identify any missed reporting requirements.

During the review period, Maryland received 12 allegations. The team evaluated 10 allegations, including 2 allegations referred by the NRC. The team found that each allegation was reviewed and assessed before being entered into a tracking database to ensure a timely response and resolution for each. A prompt field response was initiated for each allegation reviewed and a written report was generated subsequent to the investigation. Files were placed in color coded files, appropriately marked and placed in locked files with limited access. Allegers' identities were appropriately protected. Maryland provided notification of investigation conclusions in instances when contact information was provided. Maryland committed to document the final notification of investigation findings to the allexer, closure of the allegation, indicate when an allexer declined to be contacted with investigation findings, and when periodic updates are provided to allexers for complex allegations that require additional time when future allegations were received.

c. Evaluation

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

d. MRB Discussion and Chair's Determination

The MRB Chair agreed with the team's recommendation and found Maryland's performance with respect to this indicator satisfactory.

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) SS&D Evaluation Program; (3) Low-Level Radioactive Waste (LLRW) Disposal Program; and (4) Uranium Recovery (UR) Program. The NRC retains regulatory authority for LLRW Disposal and UR Programs; therefore, only the first two 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 the NRC designation. A Program Element Table indicating the Compatibility Categories for those program elements other than regulations can be found on the NRC website at the following address: <https://www.nrc.gov/materials/toolboxes/regulation.html>.

a. Scope

The team used the guidance in [SA-107](#), "Reviewing the Non-Common Performance Indicator: Legislation, Regulations, and Other Program Elements," and evaluated Maryland'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://www.nrc.gov/materials/toolboxes/regulation.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 of 1954, 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

Maryland's statutory authority is contained in the Annotated Code of Maryland, Environmental Article, Title 8, "Radiation." The Department is designated as the State's radiation control agency. No legislation affecting the radiation control program was passed during the review period.

Maryland's administrative rulemaking process takes approximately 12 months from drafting to finalizing a rule. The public, the 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 Secretary of the Environment. The Radiation Control Advisory Board periodically reviews the programs and policies of the Department that relate to radiation, and the Board also consults with and advises the Secretary of the Environment on matters related to radiation. The team noted that the State's rules and regulations are not subject to "sunset" laws.

During the review period, Maryland submitted 4 proposed regulation amendment supplements numbered 31, 32, 34, and 35. These supplements encompassed the following Regulation Amendment Tracking System Identification Number (RATS IDs): 2018-1, 2018-2, 2018-3, 2019-1, 2019-2, 2020-1, 2020-2, 2020-3, 2021-1, 2021-2, 2022-2, and 2023-1. Although proposed supplement no. 35 was submitted during the IMPEP period, it would not become overdue until after the on-site review concluded. All four supplements became final and submitted to the NRC for a compatibility review. No amendments were overdue for State adoption at the time of submission and no amendments were overdue at the time of this review.

The team also reviewed other program elements the NRC had designated as necessary for the maintenance of an adequate and compatible program that fall within this non-common performance indicator. These include elements such as Pre-Licensing Guidance, Inspection Procedures, RSRM checklist, and standard license conditions, etc. Maryland had adopted and implemented other program elements designated as necessary for an adequate and compatible program.

c. Evaluation

The team determined that, during the review period, Maryland met the performance indicator objectives listed in Section 4.1.a. Based on the criteria in MD 5.6, the team recommends that Maryland's performance with respect to the indicator, Legislation, Regulations, and Other Program Elements, be found satisfactory.

d. MRB Discussion and Chair's Determination

The MRB Chair agreed with the team's recommendation and found Maryland's performance with respect to this indicator satisfactory.

4.2 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 [SA-108](#), "Reviewing the Non-Common Performance Indicator: Sealed Source and Device Evaluation Program," and evaluated Maryland'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 time of the review, Maryland had no staff qualified to perform SS&D. At the time of the review, there were "no" vacancies, as the reviewers were in training. During the review period, the one staff member qualified to perform SS&D left the program. The team noted that the licensing staff and SS&D reviewers experienced a complete turnover during the review period. The staff positions have been filled; however, priorities have shifted to the licensing activities. Five staff members are currently in the qualification process to be trained

in the evaluation and writing of SS&Ds. The vacant positions have been filled over the last 2 years. Maryland had a training program equivalent to NRC training requirements listed in the NRC's IMC 1248, Appendix D. There is no refresher training for SS&D being incorporated at this time until they have qualified SS&D staff reviewers. Maryland had implemented a request procedure to obtain assistance from other Agreement States or the NRC if an SS&D action is received, until the new staff are qualified in SS&D reviews. Maryland communicated to the team that it intends to retain regulatory authority of the SS&D Program.

Technical Quality of the Product Evaluation

Maryland had five SS&D licensees. The team evaluated all three of the SS&D amendment actions processed during the review period. Maryland had 8 active SS&Ds and 68 inactive SS&Ds.

Maryland used either the NRC, an Agreement State, or jointly with either the NRC or an Agreement State, to write the SS&D registry documents. In writing the three amendments, Maryland and Massachusetts worked jointly together for the first, Maryland and the NRC jointly for the second, and Maryland asked the NRC for full complete assistance for the third Evaluation of Defects and Incidents Regarding SS&Ds

The team evaluated 62 of 62 incidents involving SS&D registered products during the review period. None of the incidents were related to manufacturing or design of the sources/devices manufactured or distributed by a licensee with an SS&D registered by Maryland.

c. Evaluation

The team determined that, during the review period, Maryland met the performance indicator objectives listed in Section 4.2.a. Based on the criteria in MD 5.6, the team recommends that Maryland's performance with respect to the indicator, SS&D Evaluation Program, be found satisfactory.

d. MRB Discussion and Chair's Determination

The MRB Chair agreed with the team's recommendation and found Maryland's performance with respect to this indicator satisfactory.

5.0 SUMMARY

The team found Maryland's performance to be satisfactory for all seven performance indicators reviewed: 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 SS&D Evaluation Program.

The MRB Chair agreed with the team's recommendation to close the 2021 and 2022 follow-up IMPEP review recommendations and made no new recommendations.

Accordingly, the MRB Chair found Maryland's radiation control program adequate to protect public health and safety and compatible with the NRC's program. The MRB Chair also directed that a periodic meeting be held in approximately 2 years followed by the next IMPEP review in approximately 4 years.

LIST OF APPENDICES

Appendix A	IMPEP Review Team Members
Appendix B	Inspector Accompaniments
Appendix C	Inspection Casework
Appendix D	Licensing Casework

APPENDIX A

IMPEP REVIEW TEAM MEMBERS

Name	Areas of Responsibility
Michelle Hammond, NMSS	Team Leader Technical Staffing and Training Inspector Accompaniments
Shawn Seeley, Region I	Legislation, Regulations, and Other Program Elements
Adam Gause, South Carolina	Status of Materials Inspection Program Technical Quality of Inspections
Angela Wilbers, Kentucky	Technical Quality of Licensing Actions
Lisa Forney, NMSS	Technical Quality of Incident and Allegation Activities
James Pate, Louisiana	Sealed Source and Device Evaluation Program

APPENDIX B

INSPECTOR ACCOMPANIMENTS

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

No.: 1	License No.: 05-051-03
License Type: Medical – High-dose rate (HDR) Afterloader	Priority: 2
Inspection Date: 7/22/2025	Inspector's initials: SY
No.: 2	License No.: 05-060-02
License Type: Industrial Gauge	Priority: 5
Inspection Date: 7/22/2025	Inspector's initials: AJ
No.: 3	License No.: 25-022-01
License Type: Industrial Radiography	Priority: 1
Inspection Date: 7/23/2025	Inspector's initials: AM
No.: 4	License No.: 07-014-07
License Type: Medical – Written Directive Required	Priority: 2
Inspection Date: 7/24/2025	Inspector's initials: AM

APPENDIX C

INSPECTION CASEWORK

The following inspections were reviewed during the IMPEP review:

No.: 1	License No.: MD-33-346-01
License Type: Remote Afterloader	Priority: Initial
Inspection Date: 03/05/2025	Inspector's initials: SY
No.: 2	License No.: MD-25-022-01
License Type: Industrial Radiography	Priority: 1
Inspection Date: 07/23/2025	Inspector's initials: AM
No.: 3	License No.: MD-05-051-03
License Type: Remote Afterloader	Priority: 2
Inspection Date: 07/22/2025	Inspector's initials: SY
No.: 4	License No.: MD-07-014-07
License Type: 10 CFR 35.1000 uses	Priority: 2
Inspection Date: 04/16/2025	Inspector's initials: AM
No.: 5	License No.: MD-03-005-04
License Type: Irradiated Material	Priority: 2
Inspection Date: 06/17/25	Inspector's initials: SY
No.: 6	License No.: MD-05-201-01
License Type: Medical Institution Written Directive not Required	Priority: 3
Inspection Date: 06/17/25	Inspector's initials: AJ
No.: 7	License No.: REC-59-005-01
License Type: Reciprocity – Other Services Greater than 100 Curies	Priority: 3
Inspection Date: 05/12/25	Inspector's initials: SY
No.: 8	License No.: REC-71-001-01
License Type: Reciprocity – Industrial Radiography	Priority: 1
Inspection Date: 02/05/25	Inspector's initials: SY
No.: 9	License No.: MD-07-019-15
License Type: Academic Institution Broad Scope	Priority: 3
Inspection Date: 10/17/24	Inspector's initials: SY
No.: 10	License No.: MD-05-249-01
License Type: Other Services less than 100 Curies	Priority: 5
Inspection Date: 09/20/24	Inspector's initials: SY

No.: 11	License No.: REC-53-012-01
License Type: Other Services Greater than 100 Curies	Priority: 3
Inspection Date: 08/22/24	Inspector's initials: SY
No.: 12	License No.: REC-56-020-01
License Type: Reciprocity – Industrial Radiography	Priority: 1
Inspection Date: 07/29/24	Inspector's initials: AM
No.: 13	License No.: MD-31-348-01
License Type: Self-Shielded Irradiator > 10,000 Curies	Priority: 5
Inspection Date: 04/30/24	Inspector's initials: SY
No.: 14	License No.: MD-33-088-01
License Type: Nuclear Pharmacy	Priority: 2
Inspection Date: 04/22/24	Inspector's initials: SY
No.: 15	License No.: MD-25-067-01
License Type: Medical Institution Written Directive Required	Priority: 3
Inspection Date: 03/26/24	Inspector's initials: TH
No.: 16	License No.: MD-33-104-01
License Type: Portable Gauge	Priority: 5
Inspection Date: 05/06/25	Inspector's initials: BM, AJ
No.: 17	License No.: MD-07-014-05
License Type: Gamma Knife	Priority: 2
Inspection Date: 10/27/23	Inspector's initials: AM
No.: 18	License No.: MD-21-048-01
License Type: Other Services less than 100 curies	Priority: 5
Inspection Date: 07/20/22	Inspector's initials: DF
No.: 19	License No.: MD-43-033-01
License Type: Medical Institution Written Directive Required	Priority: 3
Inspection Date: 01/11/22	Inspector's initials: JR
No.: 20	License No.: MD-33-198-01
License Type: Nuclear Pharmacy	Priority: 2
Inspection Date: 02/29/24	Inspector's initials: SY
No.: 21	License No.: MD-15-017-01
License Type: Industrial Radiography	Priority: 1
Inspection Date: 12/13/2024	Inspector's initials: SY

No.: 22	License No.: MD-33-195-01
License Type: Mobile Nuclear Medicine	Priority: 3
Inspection Date: 02/12/2025	Inspector's initials: SY

APPENDIX D

LICENSING CASEWORK

The following licensing actions were reviewed during the IMPEP review:

No.: 1	License No.: 07-014-07
License Type: Medical – Emerging Technologies 2304	Action: Amendment
Action Date: 01/30/2025	Reviewer's initials: DF
No.: 2	License No.: 15-007-02
License Type: Irradiator 3521	Action: Amendment
Action Date: 10/01/2024	Reviewer's initials: DF
No.:3	License No.: 07-232-01
License Type: Medical – Written Directive 3512	Action: Amendment
Action Date: 01/30/2025	Reviewer's initials: CAN
No.: 4	License No.: 33-044-01
License Type: Type A Ac. Broad Scope 1100	Action: New
Action Date: 03/05/2025	Reviewer's initials DAF
No.: 5	License No.: 21-065-01
License Type: Medical –WD 2201	Action: New
Action Date: 08/14/2025	Reviewer's initials: IG
No.: 6	License No.: 05-254-01
License Type: Medical –WD 2201	Action: New
Action Date: 03/18/2025	Reviewer's initials: NB
No.: 7	License No.: 33-336-01
License Type: Medical –RD 3610	Action: Amendment
Action Date: 06/06/2023	Reviewer's initials: WJ
No.: 8	License No.: 41-001-01
License Type: Medical – WD 2201	Action: Amendment
Action Date: 06/12/2023	Reviewer's initials: DAF
No.: 9	License No.: 31-386-02
License Type: Medical – 2301	Action: Termination
Action Date: 02/26/2025	Reviewer's initials: DAF
No.: 10	License No.: 07-014-05
License Type: Medical – GK 2310	Action: Amendment
Action Date: 02/04/2022	Reviewer's initials: MFS

No.: 11	License No.: 05-218-01
License Type: Industrial 3320	Action: Termination
Action Date: 03/13/2025	Reviewer's initials: IG
No.: 12	License No.: 03-107-01
License Type: Medical – 2220	Action: Renewal
Action Date: 11/10/2022	Reviewer's initials: TAL
No.: 13	License No.: 15-017-01
License Type: Industrial- 3110	Action: Amendment
Action Date: 07/23/2025	Reviewer's initials: DF
No.: 14	License No.: 15-017-01
License Type: Industrial- 3110	Action: Renewal
Action Date: 07/17/2025	Reviewer's initials: DF/NB
No.: 15	License No.: 07-244-01
License Type: Industrial- 3126	Action: New
Action Date: 06/04/2025	Reviewer's initials: DAF
No.: 16	License No.: 13-028-02
License Type: Medical – 2302	Action: Renewal
Action Date: 12/17/2024	Reviewer's initials: KC
No.: 17	License No.: 31-206-01
License Type: Industrial- Cal Serv 3221	Action: Renewal
Action Date: 07/09/2025	Reviewer's initials: IG
No.: 18	License No.: 05-026-01
License Type: Industrial- 3121	Action: Termination
Action Date: 04/11/2024	Reviewer's initials: KC
No.: 19	License No.: 33-337-01
License Type: Industry- 3122	Action: Termination
Action Date: 07/31/2025	Reviewer's initials: IG
No.: 20	License No.: 27-114-01
License Type: Industrial- 3710	Action: Amendment
Action Date: 07/10/2024	Reviewer's initials: KC
No.: 21	License No.: 07-005-01
License Type: Medical – Irr 3510	Action: Renewal
Action Date: 07/09/2025	Reviewer's initials: DAF

No.: 22	License No.: 27-083-01
License Type: Inds-P Gauge 3121	Action: Amendment
Action Date: 12/18/2024	Reviewer's initials: WJ/KC
No.: 23	License No.: 27-114-01
License Type: Industrial- 3710	Action: Amendment
Action Date: 07/10/2024	Reviewer's initials: KC
No.: 24	License No.:07-005-01
License Type: Medical – Irr 3510	Action: Renewal
Action Date: 07/09/2025	Reviewer's initials: DAF
No.: 25	License No.: 27-083-01
License Type: Inds-P Gauge 3121	Action: Amendment
Action Date: 12/18/2024	Reviewer's initials: WJ/KC
No.: 26	License No.: 25-039-03
License Type: Medical –WD 2302	Action: Amendment TC
Action Date: 08/16/2025	Reviewer's initials: KC
No.: 27	License No.: 05-026-01
License Type: Ind P Gauge- 3121	Action: Termination
Action Date: 04/11/2025	Reviewer's initials: WJ/KC

**Maryland Agreement State Program Management Review Board Meeting Participants
February 10, 2026**

Management Review Board:

- Andrea Kock, the Director, Office of Nuclear Material Safety and Safeguards, and today's MRB Chair;
- Kathryn Brock, the Acting Deputy Director, Office of Nuclear Material Safety and Safeguards;
- Jen Scro, the Assistant General Counsel for Rulemaking, Agreements States, and Fee Policy,
- Muhammed Shuaibi, the Acting Deputy Regional Administrator, NRC Region III;
- Beth Shelton, the Organization of Agreement States (or OAS) representative to the MRB, from the State of Tennessee.

Maryland Program Management and Staff:

- Angelo Bianca, Deputy Director, Air and Radiation Administration;
- Christopher Hoagland, Director, Air and Radiation Administration;
- Eva Nair, Director, Radiological Health Program, Office of Radiologic Health
- Staff: David Fabricante, Issac Gomes, Alanna Jenkins, and Brenden Morris.

IMPEP Team:

- Michelle Hammond, Team Leader, NMSS;
- Shawn Seeley, NRC Region I.
- Adam Gause, State of South Carolina
- Angela Wilbers, State of Kentucky
- Lisa Forney, NMSS; and
- James Pate, State of Louisiana

NRC and Other Members of the Public:

- Celimar Valentin-Rodriguez, NMSS
- Adelaide Giantelli, NMSS
- Lee Smith, NMSS
- Robert Johnson, NMSS
- Farrah Gaskins, NRC Region I
- Randy Erickson, NRC Region IV
- Avionne Fortner, State of Georgia
- Kaci Studer, State of Indiana
- Brenda Tubbs, State of Indiana
- David Fabricante, State of Maryland
- Issac Gomes, State of Maryland
- Alanna Jenkins, State of Maryland
- Brenden Morris, State of Maryland
- Tanner Thompson, Commonwealth of Virginia
- Sheila Nelson, Commonwealth of Virginia
- Sarah Sanderlin, State of New Jersey
- James Albright, State of North Carolina
- Randy Crowe, State of North Carolina
- Chinwe Ekwuribe, State of North Carolina
- Redeat Mesfin, State of North Carolina
- Becki Harisis, State of Tennessee
- Steve Seeger, State of Tennessee