



INTEGRATED MATERIALS PERFORMANCE EVALUATION PROGRAM  
REVIEW OF THE NEW JERSEY AGREEMENT STATE PROGRAM

April 20–24, 2015

**FINAL REPORT**

## **EXECUTIVE SUMMARY**

This report presents the results of the Integrated Materials Performance Evaluation Program (IMPEP) review of the New Jersey Agreement State Program. The review was conducted during the period of April 20 – 24, 2015, by a review team composed of technical staff members from the U.S. Nuclear Regulatory Commission (NRC) and the State of Colorado.

Based on the results of this review, New Jersey's performance was found satisfactory for all performance indicators reviewed. The review team did not make any recommendations for the State.

Accordingly, the review team recommended, and the Management Review Board (MRB) agreed, that the New Jersey Agreement State Program is adequate to protect public health and safety and is compatible with the NRC's program. The review team recommended, and the MRB agreed, that the next IMPEP review take place in approximately 4 years.

## 1.0 INTRODUCTION

This report presents the results of the review of the New Jersey Agreement State Program. The review was conducted during the period of April 20 – 24, 2015, by a review team composed of technical staff members from the U.S. Nuclear Regulatory Commission (NRC) and the State of Colorado. Team members are identified in Appendix A. The review was conducted in accordance with the “Implementation of the Integrated Materials Performance Evaluation Program and Rescission of Final General Statement of Policy,” published in the *Federal Register* on October 16, 1997, and NRC Management Directive 5.6 (MD 5.6), “Integrated Materials Performance Evaluation Program (IMPEP),” dated February 26, 2004. Preliminary results of the review, which covered the period of March 5, 2011, to April 24, 2015, were discussed with State managers on the last day of the review.

In preparation for the review, a questionnaire addressing the common and applicable non-common performance indicators was sent to the State on October 2, 2014. New Jersey provided its response to the questionnaire on April 6, 2015. A copy of the questionnaire response may be found in the NRC’s Agencywide Documents Access and Management System (ADAMS) using the Accession Number ML15097A158.

A draft of this report was issued to New Jersey on May 11, 2015, for factual comment. New Jersey responded to the findings and conclusions of the review by letter dated June 8, 2015. A copy of New Jersey’s response can be found in ADAMS using the Accession Number ML15174A073. The Management Review Board (MRB) met on July 13, 2015, to consider the proposed final report. The MRB found the New Jersey Agreement State Program adequate to protect public health and safety, and compatible with the NRC’s program.

The New Jersey Agreement State Program is administered by the Bureau of Environmental Radiation (the Bureau), in the Division of Environmental Safety and Health (the Division). The Division is part of the New Jersey Department of Environmental Protection. Organization charts for the State may be found in ADAMS using the Accession Number ML15097A106.

At the time of the review, the New Jersey Agreement State Program regulated 581 specific licenses authorizing possession and use of radioactive materials. The review focused on the radioactive materials program as it is carried out under the Section 274b. (of the Atomic Energy Act of 1954, as amended) Agreement between the NRC and the State of New Jersey.

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

## 2.0 PREVIOUS IMPEP REVIEW AND STATUS OF RECOMMENDATIONS

The previous IMPEP review concluded on March 4, 2011. The final report is available in ADAMS (Accession Number ML111300477). The results of the review and the status of the recommendations are as follows:

Technical Staffing and Training: Satisfactory  
Recommendations: None

Status of Materials Inspection Program: Satisfactory but Needs Improvement  
Recommendations: None

Technical Quality of Inspections: Satisfactory  
Recommendations: None

Technical Quality of Licensing Actions: Satisfactory but Needs Improvement  
Recommendations:

- “The review team recommends that the Bureau consistently implement their licensing procedures and NRC’s pre-licensing guidance, as well as other administrative licensing procedures found in the NUREG-1556 series. (Section 2.4 of the 2011 IMPEP report)”

Status: The review team confirmed that the Bureau conducted additional training for technical staff and supervisors to review their commitment to follow the Bureau’s licensing procedures and guidance documents. Licensing checklists were revised and the Bureau staff reviewed 100 percent of the completed licensing actions to ensure all documentation was in the license files. Pre-licensing guidance and licensing procedures were used and well documented. The review team recommended, and the MRB agreed, that this recommendation be closed.

- “The review team recommends that the Bureau provide additional training to staff members and supervisors regarding technical review of licensing actions for uses and technologies that were transferred from the NRC to the Bureau’s jurisdiction. (Section 2.4 of the 2011 IMPEP report)”

Status: The review team confirmed that the Bureau technical staff and supervisors were trained on the uses and technologies that were transferred from the NRC to the Bureau. The review team evaluated several complex licensing actions and noted that the Bureau conducted detailed, team-type reviews of emerging technologies and complex decommissioning activities. The review team recommended, and the MRB agreed, that this recommendation be closed.

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

Compatibility Requirements: Satisfactory

Recommendations: None

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

### 3.0 COMMON PERFORMANCE INDICATORS

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

#### 3.1 Technical Staffing and Training

The ability to conduct effective licensing and inspection programs is largely dependent on having a sufficient number of experienced, knowledgeable, well-trained technical personnel. Under certain conditions, staff turnover could have an adverse effect on the implementation of these programs, and thus could affect public health and safety. Apparent trends in staffing must be explored. Review of staffing also requires a 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 review team used the guidance in State Agreements procedure SA-103, "Reviewing the Common Performance Indicator: Technical Staffing and Training," and evaluated New Jersey's performance with respect to the following performance indicator objectives:

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

##### b. Discussion

The New Jersey Agreement State Program is composed of 12 technical staff members which provides 11.45 full time equivalents for the radioactive materials program. The only vacant position is that of the Bureau Chief. Vacant for one year, this position is now posted for the second time. One of the Bureau supervisors has been Acting Bureau Chief during this period.

During the review period, four staff members left the program (including the Bureau Chief) and three staff members were hired. New Jersey has a training and qualification manual equivalent to IMC 1248, including extensive use of qualification journals for staff members.

c. Evaluation

The review team evaluated the effects on the Program having the Bureau Chief position vacant for a year. Increased workloads for senior staff members did not appear to affect the quality of the inspection, licensing, or response programs.

The review team determined that, during the review period, the New Jersey program met the performance indicator objectives listed in Section 3.1.a.

d. Results

Based on the IMPEP evaluation criteria in MD 5.6, the review team recommended, and the MRB agreed, that New Jersey's performance with respect to the indicator, Technical Staffing and Training, be found satisfactory.

3.2 Status of the Materials Inspection Program

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

a. Scope

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

- Initial inspections and inspections of Priority 1, 2, and 3, licensees are performed at the frequency prescribed in IMC 2800, "Materials Inspection Program."
- Candidate licensees working under reciprocity are inspected in accordance with the criteria prescribed in IMC 1220, "Processing of NRC Form 241, Report of Proposed Activities in Non-Agreement States, Areas of Exclusive Federal Jurisdiction, and

Offshore Waters, and Inspection of Agreement State Licensees Operating under 10 CFR 150.20.”

- Deviations from inspection schedules are normally coordinated between technical staff and management.
- There is a plan to perform any overdue inspections and reschedule any missed or deferred inspections; or a basis has been established for not performing any overdue inspections or rescheduling any missed or deferred inspections.
- Inspection findings are communicated to licensees in a timely manner (30 calendar days, or 45 days for a team inspection, as specified in IMC 0610, “Nuclear Material Safety and Safeguards Inspection Reports”).

b. Discussion

New Jersey performed 342 priority 1, 2, and 3, and initial inspections during the review period. New Jersey conducted 1.5 percent of those inspections overdue. Five initial inspections were conducted overdue during the review period. No priority 1, 2, or 3 inspections were conducted overdue. Each year of the review period, New Jersey performed greater than 20 percent of candidate reciprocity inspections.

c. Evaluation

The review team determined that, during the review period, New Jersey met the performance indicator objectives listed in Section 3.2.a.

d. Results

Based on the IMPEP evaluation criteria in MD 5.6, the review team recommended, and the MRB agreed, that New Jersey’s performance with respect to the indicator, Status of the Materials Inspection Program, be found satisfactory.

3.3 Technical Quality of Inspections

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

a. Scope

The review team used the guidance in State Agreements procedure SA-102, “Reviewing the Common Performance Indicator: Technical Quality of Inspections,” and evaluated New Jersey’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 conduct annual accompaniments of each inspector to assess performance and assure consistent application of inspection policies.
- For programs with separate licensing and inspection staffs, to verify that procedures are established and followed to provide feedback information to license reviewers.
- For Agreement States, to determine if inspection guides are consistent with NRC guidance.
- An adequate supply of calibrated survey instruments is available to support the inspection program.

b. Discussion

The review team evaluated the inspection reports, enforcement documentation, and interviewed inspectors for 34 materials inspections conducted during the review period. The casework reviewed included inspections conducted by 12 current and former Bureau inspectors and covered medical, industrial, commercial, academic, research, and service licenses.

Review team members accompanied five Bureau inspectors in February 2015. The inspector accompaniments are identified in Appendix B. The inspectors were found to be well-prepared and thorough. The inspections were adequate to assess licensed activities on health, safety and security.

The review team noted that the Bureau performed annual supervisory accompaniments for each of the inspectors, throughout the review period.

c. Evaluation

The review team determined that, during the review period, New Jersey met the performance indicator objectives listed in Section 3.3.a.

d. Results

Based on the IMPEP evaluation criteria in MD 5.6, the review team recommended, and the MRB agreed, that New Jersey's performance with respect to the indicator, Technical Quality of Inspections, be found 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, and security. An assessment of licensing procedures, actual implementation of these procedures, and documentation of communications and associated actions between the Bureau licensing staff and regulated community will be a significant indicator of the overall quality of the program.



a. Scope

The review team used the guidance in State Agreements procedure SA-104, "Reviewing the Common Performance Indicator: Technical Quality of Licensing Actions," and evaluated New Jersey'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 meet current regulatory guidance (e.g. financial assurance, increased controls, pre-licensing guidance).
- License reviewers, if applicable, have the proper signature authority for the cases they review independently.
- License conditions are stated clearly and are inspectable.
- Deficiency letters clearly state regulatory positions and are used at the proper time.
- Reviews of renewal applications demonstrate a thorough analysis of a licensee's inspection and enforcement history.
- Applicable guidance documents are available to reviewers and are followed (e.g., NUREG-1556 series, pre-licensing guidance, regulatory guides, etc.).
- Licensing practices for risk significant radioactive materials are appropriately implemented including increased controls and fingerprinting orders (Part 37 equivalent).
- Documents containing sensitive security information are properly marked, handled, controlled and secured.

b. Discussion

During the review period, the Bureau performed 1,914 radioactive materials licensing actions. The review team evaluated 26 radioactive materials licensing actions which included casework for 15 current and former license reviewers. The licensing actions selected for review included 7 new applications, 10 amendments, 6 renewals, and 3 terminations. The review team evaluated casework which included a cross-section of license types and actions: broad scope, medical diagnostic and therapy, cyclotron, commercial manufacturing and distribution, industrial radiography, research and development, academic, nuclear pharmacy, gauges, self-shielded irradiators, service providers, decommissioning actions and financial assurance. All licensing actions are initially entered into the Bureau's computer tracking system, the New Jersey Environmental Management System, a database used by all programs in the Department to centrally locate information regarding licenses, inspections, enforcement actions, and incidents. License reviewers use standardized sets of conditions specific to the type of licensing program to ensure consistency in licenses. Each license action is reviewed and signed by a Bureau supervisor.

c. Evaluation

The review team determined that, during the review period, New Jersey met the

performance indicator objectives listed in Section 3.4.a.

d. Results

Based on the IMPEP evaluation criteria in MD 5.6, the review team recommended, and the MRB agreed, that New Jersey's performance with respect to the indicator, Technical Quality of Licensing Actions, be found satisfactory.

3.5 Technical Quality of Incident and Allegation Activities

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

a. Scope

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

- Incident response, investigation, and allegation procedures are in place and followed.
- Response actions are appropriate, well-coordinated, and timely.
- On-site responses are performed when incidents have potential health, safety or security significance.
- Appropriate 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.
- Allegations are investigated in a prompt, appropriate manner.
- Concerned individuals are notified of investigation conclusions.
- Concerned individuals' identities are protected, as allowed by law.

b. Discussion

During the review period, a total of 296 incidents were reported to New Jersey of which 35 were reported to NRC. The majority of the reported incidents were contaminated waste/trash alarms which involved patient waste. The review team evaluated 18 radioactive materials incidents which included 6 lost/stolen radioactive material events, 2 potential overexposure events, 4 medical events, 5 damaged equipment events, and 1 transportation event. New Jersey dispatched inspectors for onsite follow-up for 13 of the cases reviewed.

New Jersey received 13 allegations during the review period. The review team evaluated nine allegations, including four allegations that the NRC transferred to the State during the review period.

c. Evaluation

The review team determined that, during the review period, New Jersey met the performance indicator objectives listed in Section 3.5.a.

d. Results

Based on the IMPEP evaluation criteria in MD 5.6, the review team recommended, and the MRB agreed, that New Jersey's performance with respect to the indicator, Technical Quality of Incident and Allegation Activities, be found satisfactory.

#### 4.0 NON-COMMON PERFORMANCE INDICATORS

Four non-common performance indicators are used to review Agreement State programs: (1) Compatibility Requirements, (2) Sealed Source and Device Evaluation Program, (3) Low-Level Radioactive Waste Disposal Program (LLRW), and (4) Uranium Recovery Program. The NRC's Agreement with New Jersey does not relinquish regulatory authority for a sealed source and device evaluation program or a uranium recovery program. Although New Jersey has LLRW disposal authority, the NRC has not required States to have a program for licensing a LLRW disposal facility until such time as the State has been designated as a host State for a LLRW disposal facility. When an Agreement State has been notified or becomes aware of the need to regulate a LLRW disposal facility, it is expected to put a regulatory program in place that meets the criteria for an adequate and compatible LLRW disposal program. There are no plans for a LLRW disposal facility in New Jersey. Accordingly, the review team did not review this indicator. Therefore, only the first non-common performance indicator applied to this review.

##### 4.1 Compatibility Requirements

State statutes should authorize the State to establish a program for the regulation of agreement material and provide authority for the assumption of regulatory responsibility under the agreement. The statutes must authorize the State to promulgate regulatory requirements necessary to provide reasonable assurance of protection of public health, safety, and security. The State must be authorized through its legal authority to license, inspect, and enforce legally binding requirements, such as regulations and licenses. NRC regulations that should be adopted by an Agreement State for purposes of compatibility or health and safety should be adopted in a time frame so that the effective date of the State requirement is not later than 3 years after the effective date of NRC's final rule. Other program elements, as defined in Appendix A of State Agreements procedure SA-200, "Compatibility Categories and Health and Safety Identification for NRC Regulations and Other Program Elements," that have been designated as necessary for maintenance of an adequate and compatible program should be adopted and implemented by an Agreement State within 6 months following NRC designation.

a. Scope

The review team used the guidance in State Agreements procedure SA-107, "Reviewing the Non-Common Performance Indicator: Compatibility Requirements," and evaluated New Jersey's performance with respect to the following performance indicator objectives. A complete list of regulation amendments may be found on the NRC Web site at the following address: [https://scp.nrc.gov/rss\\_regamendments.html](https://scp.nrc.gov/rss_regamendments.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.
- Impact of sunset requirements, if any, on the State's regulations.

b. Discussion

New Jersey became an Agreement State on September 30, 2009. Legislative authority to create the Bureau and enter into an Agreement with NRC is granted in the Radiation Protection Act (N.J.S.A 26:2D-1), the Administrative Procedures Act (N.J.S.A. 52:14B-1 et seq.), and the Atlantic Interstate Low-Level Radioactive Waste Compact Implementation Act. New Jersey's regulations for control of radiation are located in the New Jersey Administrative Code, Title 7, Chapter 28.

The State's rulemaking process automatically adopts NRC requirements by reference with the exception of Subpart E of 10 CFR Part 20 (Radiological Criteria for License Termination). The State has requirements compatible with Subpart E of 10 CFR Part 20. When the NRC amends requirements, the amendments are automatically incorporated into New Jersey's rules without further proposal or publication. Because New Jersey specifically substitutes some New Jersey titles, addresses and language, there are times when the State may be required to amend its rules to make administrative changes which are then sent to the NRC for review. These administrative changes do not alter the substantive portions of the regulation. The State's regulatory process typically takes approximately 2 years to complete, which includes time for public comment.

New Jersey regulations are subject to sunset review. The Radiation Protection Code will sunset in 2020. A simple notice is filed for publication in the *New Jersey Register* if it will be readopted without change at that time.

During the review period, New Jersey submitted seven final regulation amendments to the NRC for a compatibility review. None of the amendments were overdue for State adoption at the time of submission. At the time of this review, no amendments were overdue for adoption. New Jersey is making good progress with its promulgation of 10 CFR Part 37 security requirements and plans to implement the rule by the March 2016 deadline.

c. Evaluation

The review team determined that, during the review period, New Jersey met the performance indicator objectives listed in Section 3.4.1.a.

d. Results

Based on the IMPEP evaluation criteria in MD 5.6, the review team recommended, and the MRB agreed, that New Jersey's performance with respect to the indicator, Compatibility Requirements, be found satisfactory.

5.0 SUMMARY

As noted in Sections 3.0 and 4.0 above, New Jersey's performance was found satisfactory for all of the six performance indicators reviewed. The review team did not make any recommendations regarding program performance by the State and determined that the recommendations from the 2011 IMPEP review should be closed.

Accordingly, the review team recommended, and the MRB agreed, that the New Jersey Agreement State Program be found adequate to protect public health and safety and compatible with the NRC's program. Based on the results of the current IMPEP review, the review team recommended, and the MRB agreed, that the next full IMPEP review take place in approximately 4 years.

## LIST OF APPENDICES

Appendix A	IMPEP Review Team Members
Appendix B	Inspection Accompaniments

## APPENDIX A

### IMPEP REVIEW TEAM MEMBERS

<b>Name</b>	<b>Area of Responsibility</b>
Jim Lynch, Region III	Team Leader Technical Staffing and Training Compatibility Requirements Inspector Accompaniments
Donna Janda, Region I	Status of Materials Inspection Program Technical Quality of Incident and Allegation Activities
Michelle Hammond, Region IV	Technical Quality of Licensing Actions Inspector Accompaniments
Phillip Peterson, Colorado	Technical Quality of Inspections

## APPENDIX B

### INSPECTION ACCOMPANIMENTS

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

Accompaniment No.: 1	License No.: 450695
License Type: Gamma Knife	Priority: 2
Inspection Date: 2/4/15	Inspector: NS

Accompaniment No.: 2	License No.: 551358
License Type: HDR	Priority: 2
Inspection Date: 2/5/15	Inspector: KF

Accompaniment No.: 3	License No.: 507935
License Type: Portable Gauge	Priority: 5
Inspection Date: 2/6/15	Inspector: JP

Accompaniment No.: 4	License No.: 507156
License Type: Pool Irradiator	Priority: 2
Inspection Date: 2/24/15	Inspector: CB

Accompaniment No.: 5	License No.: 506963
License Type: Industrial Radiography	Priority: 1
Inspection Date: 2/25/15	Inspector: JT