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

August 18, 2017

James Craig, Director
Office of Health Protection
State Department of Health
570 East Woodrow Wilson
P.O. Box 1700
Jackson, MS 39215-1700

Dear Mr. Craig:

On July 27, 2017, a Management Review Board (MRB), which consisted of U.S. Nuclear Regulatory Commission (NRC) senior managers and an Organization of Agreement States liaison to the MRB, met to consider the proposed final Integrated Materials Performance Evaluation Program (IMPEP) report on the Mississippi Agreement State Program. The MRB found the Mississippi program adequate to protect public health and safety, but needs improvement, and compatible with the NRC's program.

The enclosed final report contains a summary of the IMPEP team's findings (Section 5.0). Based on the results of the current IMPEP review, the next IMPEP review will take place in approximately 4 years and a periodic meeting will take place in approximately 1 year. Additionally, the MRB directed that a period of monitoring be initiated with Mississippi due to the fact that three out of six performance indicators were found to be satisfactory, but needs improvement. As discussed at the MRB meeting, the MRB intends to consider progress made by the State at the time of the periodic meeting and may then choose to remove the State from monitoring.

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

Sincerely,

/RA/

Frederick D. Brown
Deputy Executive Director for Materials, Waste,
Research, State, Tribal, Compliance, Administration,
and Human Capital Programs
Office of the Executive Director for Operations

Enclosure:
Mississippi Final IMPEP Report

cc: B.J. Smith, Director
Division of Radiological Health

W. Lee Cox, NC
Organization of Agreement States
Liaison to the MRB

INTEGRATED MATERIALS PERFORMANCE EVALUATION PROGRAM

REVIEW OF THE MISSISSIPPI AGREEMENT STATE PROGRAM

April 24–27, 2017

FINAL REPORT

Enclosure

EXECUTIVE SUMMARY

This report presents the results of the Integrated Materials Performance Evaluation Program (IMPEP) review of the Mississippi Agreement State Program. The review was conducted during the week of April 24–27, 2017, by a team composed of technical staff members from the U.S. Nuclear Regulatory Commission (NRC) and the State of Texas.

Based on the results of this review, Mississippi's performance was found satisfactory for three indicators, Technical Staffing and Training, Status of Materials Inspection Program, and Technical Quality of Inspections, and satisfactory, but needs improvement for the indicators Technical Quality of Licensing Actions, Technical Quality of Incident and Allegation Activities, and Compatibility Requirements.

The team made one recommendation. Upon deliberation, the Management Review Board (MRB) generalized the recommendation initially made by the team in Section 3.4; expanding it to all guidance including incidents, allegations, and licensing guidance (see Section 5.0).

Overall, the team recommended, and the MRB agreed, that the Mississippi Agreement State Program is adequate to protect public health and safety, but needs improvement, and compatible with the NRC's program. The team recommended, and the MRB agreed, that the next IMPEP review take place in approximately 4 years and a periodic meeting take place in approximately 1 year. Additionally, the team recommended, and the MRB agreed, that a period of monitoring be initiated with Mississippi due to the fact that three out of six performance indicators were found to be satisfactory, but needs improvement. As discussed at the MRB meeting, the MRB intends to consider progress made by the State at the time of the periodic meeting and may then choose to remove the State from monitoring.

1.0 INTRODUCTION

This report presents the results of the review of the Mississippi Agreement State Program radioactive materials safety program. The review was conducted during the period of April 24–27, 2017, by a team composed of technical staff members from the U.S. Nuclear Regulatory Commission (NRC) and the State of Texas. 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 April 20, 2013, through April 27, 2017, were discussed with Mississippi managers on the last day of the review and again on June 1, 2017, following additional team evaluation.

In preparation for the review, a questionnaire addressing the common and applicable non-common performance indicators was sent to the Mississippi Program on January 11, 2017. The State provided its response to the questionnaire on April 3, 2017. A copy of the questionnaire response is available in the NRC's Agencywide Documents Access and Management System (ADAMS) using the Accession Number ML17095A298.

The Mississippi Agreement State Program (the Program) is administered by the Division of Radiological Health (the Division). The Division is under the Department of Health (the Department). Organization charts for the State are available in ADAMS (Accession Number ML17095A291).

At the time of the review, the Program regulated 286 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 Mississippi.

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

2.0 PREVIOUS IMPEP REVIEW AND STATUS OF RECOMMENDATIONS

The previous IMPEP review concluded on April 19, 2013. The final report is available in ADAMS (Accession Number ML13177A301). 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 Licensing Actions: Satisfactory
Recommendation: None

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

Compatibility Requirements: Satisfactory
Recommendation: None

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

3.0 COMMON PERFORMANCE INDICATORS

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

3.1 Technical Staffing and Training

The ability to conduct effective licensing and inspection programs is largely dependent on having a sufficient number of experienced, knowledgeable, well-trained technical personnel. Under certain conditions, staff turnover could have an adverse effect on the implementation of these programs, and 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 team used the guidance in State Agreements procedure SA-103, "Reviewing the Common Performance Indicator: Technical Staffing and Training," and evaluated Mississippi's performance with respect to the following performance indicator objectives:

- A well-conceived and balanced staffing strategy has been implemented throughout the review period.
- Agreement State training and qualification program is equivalent to NRC Inspection Manual Chapter (IMC) 1248, "Formal Qualifications Program for Federal and State Material and Environmental Management Programs."
- Qualification criteria for new technical staff are established and are being followed or qualification criteria will be established if new staff members are hired.
- Any vacancies, especially senior-level positions, are filled in a timely manner.
- There is a balance in staffing 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 Program is composed of five technical staff members including the Radioactive Materials Branch Director. All technical staff perform licensing, inspection, and incident response activities. The Program has budgeted five full-time equivalent staff for the radioactive materials program including any vacancies in the program. At the time of the review, there was one vacancy. That vacancy was subsequently filled in May 2017. Excluding the Branch Director, four of the five technical staff positions turned over at least once during the review period. Six technical staff members left the program and five technical staff members were hired. The vacancies were usually filled within 2 to 3 months, except for the current vacancy, which has been vacant for 1 year due to the lack of suitable candidates. At the time of the review, one of the staff members was fully qualified for all modalities under the Program and the remainder were trained for various modalities working their way to full qualification. Mississippi has a training and qualification manual that is compatible with NRC's IMC 1248.

c. Evaluation

Program management acknowledged that there was high staff attrition during the review period. This has been the case during the last four IMPEP reviews. There were also some performance issues observed by the team which are described in Sections 3.4, 3.5, and 4.1. The team discussed the high attrition rates and performance issues with the Program management to determine if the performance problems were attributable to the staffing and training objectives of this performance indicator. Staff turnover occurred throughout the review period for several different reasons. The individuals who left the program did so for a variety of personal reasons such as seeking higher salary and retirement.

During the review period, there was prompt management attention to address the high rates of attrition including modifying the salary scale and the career ladder progression of the health physics (HP) staff. Currently, new hires with little or no health physics experience start as an HP-Trainee. As the new staff gain additional experience in State employment, the staff move on to HP-1, HP-2, HP-3, and HP-4 positions. After several years of training and experience, technical staff will reach the HP-Advanced position.

During the review period, qualified staff members focused on licensing, inspection, and incident response activities to prevent significant performance issues from developing due to staff attrition and while new staff were being trained. Formal training needs of new staff members were also addressed in a timely manner. The team concluded that the performance issues described in Sections 3.4, 3.5, and 4.1 were not attributable to the objectives of this performance indicator for initial inspector/reviewer training.

The team determined that during the review period the Mississippi 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 team recommended, and the MRB agreed, that Mississippi's performance with respect to the indicator, Technical Staffing and Training, is 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 NRC IMC Chapter 2800, "Materials Inspection Program" and is dependent on the amount and kind of material, the type of operation licensed, and the results of previous inspections. There must be a capability for maintaining and retrieving statistical data on the status of the inspection program.

a. Scope

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

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

b. Discussion

The Program's inspection frequency is at least the same, and in a few instances more frequent, for similar license types in IMC 2800. The Program performed 246 priority 1, 2, 3, and initial inspections during the review period. Of these inspections, 7.9 percent were conducted overdue. Specifically, 18 of 240 priority 1, 2, or 3, and 1 of 6 initial inspections were conducted overdue. One routine inspection was currently overdue at the time of the review. An evaluation of 25 inspection reports indicated that almost all inspection findings (23 out of 25 reports reviewed), were communicated to the licensees within the Program's goal of 30 days after the inspection exit. The Program inspected

15 percent of reciprocity candidates in 2013, 48 percent in 2014, 30 percent in 2015, and 30 percent in 2016.

c. Evaluation

Several overdue inspections, including the one currently overdue, were found to be of licensees who did not maintain a physical presence in Mississippi, but rather maintained their license solely in the event that temporary job site work within State jurisdiction became available. Although these licensees are required by license conditions to provide advance notification to the Program of work in Mississippi, some rarely worked in the state, making it challenging for the Program to complete a routine inspection at the required frequency. The Program has increased the use of in-depth telephone interviews and in-office document review in lieu of on-site inspections, when none are available. The Program supplements these telephone interviews with subsequent field inspections, when such opportunities arise.

Two reports examined during this review were issued 31 days after the inspection exit. Both reports communicated to the licensees that no violations were identified as a result of the inspections.

The Program fell one inspection short of inspecting the required percentage of reciprocity candidates in 2013, but has consistently and substantially exceeded the required percentage since.

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

d. Results

Based on the IMPEP evaluation criteria in MD 5.6, the team recommended, and the MRB agreed, that Mississippi's performance with respect to the indicator, Status of the Materials Inspection Program, is 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 team used the guidance in State Agreements procedure SA-102, "Reviewing the Common Performance Indicator: Technical Quality of Inspections," and evaluated Mississippi'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.
- For Agreement States, inspection guides are consistent with NRC guidance.
- An adequate supply of calibrated survey instruments is available to support the inspection program.

b. Discussion

The team evaluated the inspection reports, enforcement documentation, and interviewed inspectors for 25 materials inspections conducted during the review period. The casework reviewed included inspections conducted by six of the Program's inspectors and covered broad scope, medical, industrial, commercial, and reciprocity licenses. In most cases, inspection findings were well-founded and properly documented in reports. The inspection findings contained sufficient detail to demonstrate that each inspection was adequate to assess the health and safety, and security of licensed material. One exception was a reciprocity inspection in 2016 where a security concern was identified and documented, but not cited. This issue appeared to be due to a lack of understanding on the part of the Program staff on how to apply Mississippi regulations to reciprocity licensees in order to issue a violation for the security concern. Inspection reports were well written, peer reviewed, and reviewed by management.

Team members accompanied all four of the Program's materials inspectors during the week of April 3, 2017. The inspectors were well-prepared, thorough and professional. The inspections were adequate to assess radiological health, safety and security, and included varying degrees of performance-based observations. The inspector accompaniments are identified in Appendix B.

The Program has a policy of performing annual supervisory accompaniments for each of the materials inspectors. The team found that over the review period, each of the state's inspectors was accompanied by a supervisor at least once per year, with one exception in 2013. One inspector was not accompanied by a supervisor in 2013. However, this individual was accompanied three times in 2012, and three times in 2014.

c. Evaluation

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

d. Results

Based on the IMPEP evaluation criteria in MD 5.6, the team recommended, and the MRB agreed, that Mississippi's performance with respect to the indicator, Technical Quality of Inspections, is 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 State licensing staff and regulated community will be a significant indicator of the overall quality of the 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 Mississippi's performance with respect to the following performance indicator objectives:

- Licensing action reviews are thorough, complete, consistent, and of acceptable technical quality with health, safety, and security issues properly addressed.
- Essential elements of license applications have been submitted and elements are consistent with current regulatory guidance (e.g., financial assurance, increased controls, pre-licensing guidance).
- License reviewers, if applicable, have the proper signature authority for the cases they review independently.
- License conditions are stated clearly and can be inspected.
- Deficiency letters clearly state regulatory positions and are used at the proper time.
- Reviews of renewal applications demonstrate a thorough analysis of a licensee's inspection and enforcement history.
- Applicable guidance documents are available to reviewers and are followed (e.g., NUREG-1556 series, pre-licensing guidance, regulatory guides, etc.).
- Licensing practices for risk significant radioactive materials are appropriately implemented including increased controls and fingerprinting orders (Title 10 of the *Code of Federal* Regulations (10 CFR) Part 37 equivalent).
- Documents containing sensitive security information are properly marked, handled, controlled and secured.

b. Discussion

During the review period, the Program performed 1,067 radioactive materials licensing actions. The team evaluated 25 radioactive materials licensing actions. The licensing actions selected for review included six new applications, ten amendments, four renewals, and five terminations. The team evaluated casework which included the following license types and actions: broad scope academic, medical diagnostic and therapy, industrial radiography, research and development, nuclear pharmacy, gauges, gamma knife, and well-logging. The casework sample represented work from six license reviewers.

The team determined that, for the most part, license reviewers follow the Program's licensing guidance and/or the NRC's NUREG-1556 series, "Consolidated Guidance about Materials Licenses" when performing licensing actions. Once completed, all

licensing actions are peer reviewed, reviewed by the Branch Director and finally reviewed and signed by the Division Director.
The team assessed new applications for the Program's implementation of the pre-licensing requirements. The Program uses a checklist equivalent to the "Checklist to Provide a Basis for Confidence That Radioactive Material Will Be Used as Specified on a License" and "Checklist for Risk-Significant Radioactive Material." The Program conducts pre-licensing visits for all new applicants, which includes a security review for applicants that are subject to Part 37 requirements.

c. Evaluation

The team identified some licensing issues inconsistent with the Program guidance or regulatory requirements. For example, the team identified two licensing actions in which an individual was designated as an authorized user (AU) on a medical use license without adequate documentation of training and experience as indicated in Part 35 requirements. The required documentation was requested and obtained from the licensees during the week of the IMPEP review. Additionally, the team identified a licensing action in which an AU was designated as a Radiation Safety Officer (RSO) on a medical license without the license reviewer obtaining a preceptor RSO attestation or documentation that the authorized user had training in the radiation safety, regulatory issues and emergency procedures appropriate for the license. Interviews indicated that staff were not aware of this requirement. During the IMPEP review, the Program initiated a review of all medical licenses, approximately 80–90 in total, to ensure that all required documentation had been obtained and was in the licensing files.

The Program adopted the 10 CFR Part 37 requirements in March 2016 by license condition. The team identified some issues with the Program's subsequent implementation of Part 37. The team found that a Part 37 license condition was not included on a fixed gauge license, a High Dose Rate Afterloader (HDR) license, and a well logging license, all of which were authorized to possess enough Category 3 sources to constitute a Category 2 quantity, if aggregated. The well logging license did include a limiting condition restricting the licensee from aggregating Category 3 sources into Category 2 quantities, but the condition did not include all of the radionuclides authorized on the license. Prior to the conclusion of the review, the Program reviewed all licenses with the potential for aggregation. Part 37 conditions were added to all licenses with the potential for aggregation to Category 2 quantities to be compliant with regulatory requirements. This included the licenses discussed above and one additional fixed gauge identified by the Program. The HDR license was amended to remove a source listed on the license such that the total activity authorized could not be aggregated to a Category 2 quantity. The team also found that, since March 2016, letters sent to 12 of the 16 reciprocity licensees approved to possess an aggregate Category 2 or higher quantity of radioactive material did not contain a condition binding that licensee to applicable Part 37 requirements. The Program had originally identified this issue in late 2016 after a program inspector found himself unable to cite Part 37 violations of a radiographer working in the State under reciprocity. Program management indicated that there was an error with the reciprocity letter template that was used to process reciprocity requests and the need for the Part 37 condition to be included in the reciprocity letter was overlooked.

During the inspector accompaniments in April 2017, while inspecting an out of State radiographer, a Program inspector again encountered a situation where the Part 37 condition had not been included on the reciprocity acceptance letter. The Program maintained that they could not issue a violation because of the lack of a Part 37 condition. During this IMPEP review, the team found that Mississippi's regulations require all reciprocity licensees to comply with the terms of their license. Some home State materials licenses either reference their State's Part 37 regulations or have a binding Part 37 license condition. In all, nine of the twelve licensees approved for reciprocity could still have been cited for violations of Part 37 because their home Agreement State licenses had such a reference or license condition. This included the licensee that was inspected during the accompaniments. Previously, Program staff were either unaware of this or were not able to use this knowledge to issue a violation. During the review, after the team provided feedback to the Program on how a violation of this nature could be correctly addressed, the Program initiated enforcement action against the licensee inspected during the April 2017 IMPEP inspection accompaniments. However, three reciprocity licensees could not have been cited in this manner, as their licenses contained no condition referencing Part 37 requirements. At the time of the review, the Program had initiated issuing revised letters to licensees that work in Mississippi under reciprocity and ensured that the correct verbiage was included in the reciprocity letter "templates."

During the 2009 IMPEP review, there was a discussion of the implementation of security requirements. At that time, the Program adopted the requirements for Increased Controls, the Fingerprinting Orders, and the National Source Tracking System by license condition. There were some cases where the conditions were not added to the appropriate licenses. Program management attributed this to an oversight on the part of the Program and indicated that a method would be implemented to ensure that new license applications and amendments would be reviewed to determine the applicability of enhanced security requirements. The 2009 IMPEP team noted that many of the Program's policies and procedures were outdated and in need of revision and that the Program primarily used verbal communication to implement new policies and practices. The 2009 IMPEP team also recommended that the Program update its existing procedures and develop new procedures, if necessary, to memorialize the Program policies and practices and to serve as a knowledge management tool. Although this recommendation was closed during the 2013 IMPEP, it does not appear that the Program has updated its procedures as needed.

In evaluating the licensing issues concerning AUs, RSOs, and Part 37 implementation, the team identified weaknesses with the Program's instruction to staff in these areas. Given similar issues detailed in Section 3.5, the MRB directed the original recommendation made by the team to be expanded. Specifically, the MRB recommends that the Program review its guidance, including licensing, incident, and allegation guidance; update this guidance, as appropriate; and provide training to all Program staff on the new procedures.

d. Results

The team found that some licensing actions did not fully address health and safety concerns, lacked technical quality, or did not adhere to existing guidance. Therefore, based on the IMPEP evaluation criteria in MD 5.6, the team recommended, and the

MRB agreed, that Mississippi's performance with respect to the indicator, Technical Quality of Licensing Actions, is satisfactory, but needs improvement.

3.5 Technical Quality of Incident and Allegation Activities

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

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 Mississippi's performance with respect to the following performance indicator objectives:

- Incident response, investigation, and allegation procedures are in place and followed.
- Response actions are appropriate, well-coordinated, and timely.
- On-site responses are performed when incidents have potential health, safety or security significance.
- Appropriate followup actions are taken to ensure prompt compliance by licensees.
- Followup inspections are scheduled and completed, as necessary.
- Notifications are made to the NRC Headquarters Operations Center for incidents requiring a 24-hour or immediate notification to the Agreement State or the 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, eight incidents, rising to the level requiring reporting to the NRC, were reported to Mississippi. The team evaluated all of the radioactive materials incidents: four malfunctioning fixed gauge shutters (different types of gauges), two stuck radiography sources, and two damaged portable gauges. The Program dispatched inspectors for onsite followup for one of the cases reviewed, a damaged portable gauge. Four of the incidents reported to the Program, those dealing with malfunctioning shutters, were not reported to the NRC in a timely fashion. The timeliness of reporting was discussed with Program Management. Program management had made the determination that the issues were of minor health and safety significance and did not need to be reported in 24 hours.

Program management was advised that the reporting requirements were not based on a health and safety evaluation of the events, rather that all eight events met the 10 CFR 30.50 reporting criteria and were reportable. The impact of late reporting was reviewed and no adverse outcomes were identified.

A similar finding was identified during the 2013 IMPEP. The Program reported 11 incidents outside the time requirements identified in Appendix A of SA-300, "Reporting Material Events." These were also attributed to the misunderstanding by the Program related to the applicability of 10 CFR 30.50(b)(2) to radiography equipment and gauges, when the Program staff had made the determination that the issues were of minor health and safety significance.

The team also evaluated eight additional incidents that were reported to Mississippi but were not reportable to the NRC. These eight incidents were the only non-reportable incidents that had documentation to review. Program staff advised that they performed many more incident followups but that they did not track or document them. The Program's implementing procedure for incidents requires Program staff to complete a Radiological Incident Information Form which was completed in the 16 incidents available for review. Program management said that they would adhere to the procedure in the future.

At the start of the IMPEP review, Program management provided incident and allegation procedures to the team. Later during the review, these procedures were replaced with different procedures for consideration. Program management advised that these procedures had been revised since the last IMPEP review, but had not been disseminated to the staff. The new procedures did not have a date or revision number on them.

Based on a review of the available documentation, the undated incident procedure, and discussions with staff, it appeared that the Program dispatched staff to events in response to calls received by the Program and that timely and appropriate actions were taken in those cases reviewed. However, the lack of documentation made it challenging for the team to make this conclusion with certainty. Additionally, due to the lack of documentation, the team could not determine if any of the incidents that were not documented should have been reported to the NRC.

During the review period, six allegations were received by Mississippi. The team evaluated all of these allegations. No allegations were referred to the State by the NRC during the review period. Similar to the documentation issues noted above, the Program staff had not completed documentation for all allegations received. Hence, the team found it difficult to conclude that the Program took prompt and appropriate actions in response to concerns raised. Additionally, the Program may not, in all cases, have responded to the concerned party, when appropriate.

c. Evaluation

The team determined that, during the review period, Mississippi incident response and allegation procedures were in place but occasionally were not practiced in a detailed fashion. As a result, the MRB expanded the recommendation made by the team in Section 3.4; expanding it to all guidance including incidents, allegations, and licensing guidance. The team also determined that Mississippi failed to notify the NRC in a timely fashion for four out of eight incidents. Program management indicated that they would adhere to procedures in the future.

d. Results

Based on the IMPEP evaluation criteria in MD 5.6, the team recommended, and the MRB agreed, that Mississippi's performance with respect to the indicator, Technical Quality of Incident and Allegation Activities, is satisfactory, but needs improvement.

4.0 NON-COMMON PERFORMANCE INDICATORS

Four non-common performance indicators are used to review Agreement State programs: (1) Compatibility Requirements, (2) Sealed Source and Device (SS&D) Evaluation Program, (3) Low-Level Radioactive Waste Disposal (LLRW) Program, and (4) Uranium Recovery (UR) Program. The NRC's Agreement with Mississippi does not relinquish regulatory authority for a uranium recovery program; therefore, only the first three non-common performance indicators applied to this review.

4.1 Compatibility Requirements

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

a. Scope

The team used the guidance in State Agreements procedure SA-107, "Reviewing the Non-Common Performance Indicator: Compatibility Requirements," and evaluated Mississippi's performance with respect to the following performance indicator objectives. A complete list of regulation amendments can be found on the NRC Web site 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.
- Impact of sunset requirements, if any, on the State's regulations.

b. Discussion

Mississippi became an Agreement State on July 1, 1962. The Mississippi Agreement State Program's current effective statutory authority is contained in the Mississippi State Department of Health Title 15, Part 21 Division of Radiological Health regulations. The Mississippi Radiation Protection Law of 1976 designates the Department as the radiation control agency for the State. During the 2016 legislative session, House Bill 289 was approved increasing license fees for the first time since 2006. The bill approved a 15 percent fee increase for all fees that were not in statute (Mississippi Code Annotated § 45-14-31). The fee increase went into effect on July 1, 2016. The Program is fully fee funded. The Program's revenues have been approximately $150,000 to $200,000 below their annual operating costs. The effect of this fee increase will be to reduce or eliminate the operating deficit.

The team determined that Mississippi's administrative rulemaking process takes approximately 6 to 12 months from drafting to finalizing a rule. The Program submits proposed regulations to the Mississippi Radiation Advisory Council for review and approval. 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 Mississippi State Board of Health. Once approved, the final rules are sent to the Secretary of State for adoption. Mississippi's rules and regulations are not subject to "sunset" laws. In lieu of regulations, the Program also has the authority to issue alternate legally binding requirements, such as license conditions (e.g., 10 CFR Part 37 license condition).

During the review period, Mississippi submitted two final regulation amendments, and one legally binding license condition to the NRC for a compatibility review. Both final regulation amendments were overdue for State adoption at the time of submission. The license condition was adopted on time.

Mississippi uses a legally binding license condition to adopt 10 CFR Part 37 physical protection requirements. However, as discussed in Section 3.4 above, the team identified that the Program did not add the license condition to all applicable licenses. The omission of the license condition prevented Mississippi from enforcing Part 37 requirements on some licensees that could possess Category 2 or greater quantities of radioactive material.

At the time of this review, the following five amendments were overdue:

- Technical Corrections Parts 30, 34, 40 and 71, 77 FR 39899, which was due for Agreement State adoption by August 6, 2015. Received by the NRC for review on March 20, 2017. The NRC issued a letter April 6, 2017, with no comments.

- Advance Notification to Native American Tribes of Transportation of Certain Types of Nuclear Waste Part 71, 77 FR 34194, which was due for Agreement State adoption by August 10, 2015. Received by the NRC for review on March 20, 2017. The NRC issued a letter April 6, 2017, with no comments.

- Requirements for Distribution of Byproduct Material Parts 30, 31, 32, 40, and 70, 77 FR 43666, which was due for Agreement State adoption by October 23, 2015. The State has not submitted the regulations to the NRC for review.

- Decommissioning Planning Parts 20, 30, 40, and 70, 76 FR 35512, which was due for Agreement State adoption by December 17, 2015. The State has not submitted the regulations to the NRC for review.

- Distribution of Source Material to Exempt Persons and to General Licensees and Revision of General License and Exemptions Parts 30, 40, and 70, 78 FR 32310, which was due for Agreement State adoption by August 27, 2016. The State has not submitted the regulations to NRC for review.

Finally, in a letter dated July 9, 2013, the NRC provided 53 comments on three final regulation amendments, and other provisions not related to a regulation amendment tracking number, that were submitted by the Program prior to the current review period. The Program addressed the comments and submitted a revised final regulation amendments package to the NRC for review on March 20, 2017. At the time of the IMPEP review, the revised final regulation package was under review by the NRC.

c. Evaluation

The team determined that during the review period Mississippi met the performance indicator objectives listed in Section 4.1.a, with the following exception.

- 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.

The team interviewed the Program's staff and management to determine the reason for the seven (five current and two previous) overdue regulation packages. The Program Director explained that prior to the review period, the Program had funding for a contractor to develop and submit rules for adoption to the NRC and the State. The funds for the contractor were not available to the Program during the current review period. The promulgation of rules was transferred to the Program staff. The team determined that the reason several regulation amendments were overdue was primarily due to the loss of contractor funding combined with the additional workload to promulgate regulations and Program management's decision to prioritize incident response, inspection, and licensing activities.

In addition, Mississippi was not able to promulgate 10 CFR Part 37 equivalent regulations prior to the due date of March 19, 2016, but the State adopted a legally binding license condition that was equivalent to 10 CFR Part 37 by the due date. However, as discussed above, the license condition was not added to all applicable

licenses, thereby limiting the enforcement of the Part 37 equivalent requirements on a few Mississippi licensees.

The Department's senior management stated that the Program will seek authorization from the Mississippi Radiation Advisory Council and the State Board of Health to adopt NRC regulations by reference. This will reduce the workload for the Program's technical staff and improve the timeliness of promulgating regulations.

d. Results

Based on the IMPEP evaluation criteria in MD 5.6, the team recommended, and the MRB agreed, that Mississippi's performance with respect to the indicator, Compatibility Requirements, is satisfactory, but needs improvement.

4.2 Sealed Source and Device Evaluation Program

Since becoming an Agreement State in 1962, Mississippi has not performed any SS&D evaluations; therefore, the team did not review this indicator.

4.3 Low-Level Radioactive Waste Disposal Program

In 1981, the NRC amended its Policy Statement, "Criteria for Guidance of States and NRC in Discontinuance of NRC Regulatory Authority and Assumption Thereof by States Through Agreement," to allow a State to seek an amendment for the regulation of LLRW as a separate category. Although the Mississippi Agreement State Program 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 in place a regulatory program which will meet the criteria for an adequate and compatible LLRW disposal program. There is not currently, and there are no plans for, a LLRW disposal facility in Mississippi. Accordingly, the team did not review this indicator.

5.0 SUMMARY

As noted in Sections 3.0 and 4.0 above, Mississippi's performance was found satisfactory for three indicators, Technical Staffing and Training, Status of Materials Inspection Program, and Technical Quality of Inspections, and satisfactory, but needs improvement for the indicators Technical Quality of Licensing Actions, Technical Quality of Incident and Allegation Activities, and Compatibility Requirements. The team made one recommendation regarding program performance by the State, which was expanded by the MRB (Section 3.4).

Accordingly, the team recommended, and the MRB agreed, that the Mississippi Agreement State Program is adequate to protect public health and safety, but needs improvement, and 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 and a periodic meeting take place in approximately 1 year. Additionally, the MRB directed that a period of monitoring be initiated with Mississippi due to the fact that three out of six performance indicators were found to be satisfactory, but needs improvement.

As discussed at the MRB meeting, the MRB intends to consider progress made by the State at the time of the periodic meeting and may then choose to remove the State from monitoring.

Below is the MRB's recommendation, as mentioned in the report, for evaluation and implementation by Mississippi:

> The MRB recommends that the Program review its guidance, including licensing, incident, and allegation guidance; update this guidance, as appropriate; and provide training to all Program staff on the new procedures. (Section 3.4).

LIST OF APPENDICES

APPENDIX A

IMPEP REVIEW TEAM MEMBERS

Name	**Area of Responsibility**
Orysia Masnyk Bailey, Region I	Team Leader Technical Quality of Incident and Allegation Activities
Ryan Craffey, Region III	Status of Materials Inspection Program Technical Quality of Inspections Inspection Accompaniments
Vanessa Danese, Texas	Technical Quality of Licensing Actions
Binesh Tharakan, Region IV	Technical Staffing and Training Compatibility Requirements

APPENDIX B

INSPECTION ACCOMPANIMENTS

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

Accompaniment No.: 1	License No.: LA-5838-L01 (in MS under reciprocity)
License Type: Industrial Radiography – Temporary Job Sites	Priority: 1
Inspection Date: 04/03/2017	Inspector: RS

Accompaniment No.: 2	License No.: MS-267-01
License Type: Medical Therapy – Other Emerging Technology	Priority: 2
Inspection Date: 04/04/2017	Inspector: JA

Accompaniment No.: 3	License No.: MS-463-01
License Type: Well Logging – Tracers and Sealed Sources	Priority: 3
Inspection Date: 04/05/2017	Inspector: BC

Accompaniment No.: 4	License No.: MS-1063-01
License Type: Irradiator – Other Greater than 10,000 Curies	Priority: 2
Inspection Date: 04/06/2017	Inspector: JM

Accompaniment No.: 5	License No.: MS-1092-01
License Type: Gamma Stereotactic Radiosurgery	Priority: 2
Inspection Date: 04/07/2017	Inspector: JM

Accompaniment No.: 6	License No.: MS-683-01
License Type: Irradiator – Self Shielded Less than 10,000 Curies	Priority: 5
Inspection Date: 04/07/2017	Inspector: JM

Accompaniment No.: 7	License No.: MS-683-02
License Type: Irradiator – Self Shielded Less than 10,000 Curies	Priority: 5
Inspection Date: 04/07/2017	Inspector: JM