



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
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ARLINGTON, TEXAS 76011-4511

June 6, 2018

Jim Craig, Director
Office of Health Protection
Mississippi State Department of Health
P.O. Box 1700
Jackson, MS 39215-1700

SUBJECT: PERIODIC MEETING SUMMARY FOR THE MISSISSIPPI AGREEMENT STATE
PROGRAM DATE OF MEETING: APRIL 25, 2018

Dear Mr. Craig:

This letter documents the results of a periodic meeting with you and your staff on April 25, 2018. The purpose of the meeting was to review and discuss the status of the Mississippi Agreement State Program. The U.S. Nuclear Regulatory Commission (NRC) representatives included Mark R. Shaffer, Director, Division of Nuclear Materials Safety (DNMS), Dr. Lizette Roldan-Otero, Health Physicist, Agreement State Programs Branch, Office of Nuclear Material Safety and Safeguards, and Binesh K. Tharakan, CHP, Regional State Agreements Officer, DNMS.

Enclosed is a general meeting summary, including actions resulting from the discussions. A Management Review Board (MRB) meeting to discuss the outcome of the periodic meeting will be scheduled. The date and time of the MRB meeting will be provided to you in a separate transmission.

If you believe the conclusions do not accurately summarize the meeting discussion, or you have any additional remarks about the meeting, please contact me at (817) 200-1116, or via e-mail at Binesh.Tharakan@nrc.gov to discuss your concerns.

Sincerely,

/RA/

Binesh K. Tharakan, CHP
State Agreements Officer
Division of Nuclear Materials Safety

Enclosure:
Periodic Meeting Summary

PERIODIC MEETING SUMMARY FOR THE
MISSISSIPPI AGREEMENT STATE PROGRAM
DATE OF MEETING: APRIL 25, 2018

U.S. Nuclear Regulatory Commission (NRC) Attendees

Mark R. Shaffer, Director, Division of Nuclear Materials Safety, Region IV
Lizette Roldan-Otero, PhD, Senior Health Physicist, Agreement State Programs Branch, Office
of Nuclear Material Safety and Safeguards
Binesh K. Tharakan, CHP, Regional State Agreements Officer, Region IV

Mississippi State Department of Health Attendees

Jim Craig, Director, Office of Health Protection
B.J. Smith, Director, Division of Radiological Health, Office of Health Protection
Melanie Vail-Fuller, Team Leader, Quality Improvement Team
Jayson Moak, Radioactive Materials Branch Director
Jeff Algee, Health Physicist
Robert Sims, Health Physicist
Benjamin Culpepper, Health Physicist
Shavon Marbory, Health Physicist

DISCUSSION:

The Mississippi Agreement State Program (the Program) is administered by the Radioactive Materials Branch (the Branch), which is located in the Division of Radiological Health (the Division). The Division is in the Office of Health Protection within the Mississippi State Department of Health (the Department or MSDH). The previous Integrated Materials Performance Evaluation Program (IMPEP) review was conducted April 24 – 27, 2017.

On July 27, 2017, a Management Review Board (MRB) met to consider the recommendations from the review of the Program. Based on the IMPEP review team's recommendations, the MRB found that Program's performance was satisfactory for three out of the six performance indicators reviewed (Technical Staffing and Training, Status of Materials Inspection Program, and Technical Quality of Inspections). The other three performance indicators were found satisfactory, but needs improvement (Technical Quality of Licensing Actions, Technical Quality of Incident and Allegation Activities, and Compatibility Requirements). The 2017 IMPEP team made one recommendation that was later expanded by the MRB. The MRB recommended 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.

The MRB found the Program is adequate to protect public health and safety, but needs improvement, 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 and a periodic meeting take place in approximately one 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 Mississippi at the time of the periodic meeting and may then choose to remove Mississippi from Monitoring.

On April 25, 2018, a periodic meeting was conducted with Mississippi to discuss the status of the Program and evaluate its progress in addressing the deficiencies and recommendations from the 2017 IMPEP review. The NRC also evaluated whether the period of Monitoring should be extended or discontinued. The following information summarizes the topics covered at the periodic meeting.

Program Challenges

Several IMPEP review teams from 2005 to 2017 have recommended the Department take action to increase salary and benefits to stabilize staffing and ensure continued successful program implementation. In 2009, the NRC provided a letter of support to Mississippi's State Health Officer addressing the issue of improving the Program's salary structure. In 2011, based on NRC's recommendations and the letter of support, the Department was successful in petitioning the Mississippi State Personnel Board to create a new career ladder for the Division. The Division reported that while the new career ladder was a good first step, it failed to decrease the turnover of the radioactive materials staff.

To address previous NRC recommendations, including staff retention rates, and to improve the radioactive materials program, the Division initiated a Quality Improvement (QI) team on September 14, 2017. All Branch staff members serve on the QI team. The QI team conducted employee surveys and identified that a root cause associated with employee retention was that the time frame required by the current career ladder, i.e., 3 years between steps, was too long. The staff was completing the required training courses but could not advance up the career ladder due to the time requirement. The new proposed career ladder shortens the time requirement to one year and allows staff to progress up the ladder annually with salary increases, so that the Division can retain trained staff.

The QI team also conducted a salary survey of neighboring states and determined that the Department's pay scale was below regional averages. Based upon the regional salary data and NRC Inspection Manual Chapter (IMC) 1248 training requirements, amendments to the current career ladder were documented, and supporting policies and procedures were updated. The goal of the proposed Radiological Health Career Ladder is to realign the Division's training requirements and advancement opportunities with NRC IMC 1248 and reduce the timeframe between steps of the ladder. The changes will allow an entry-level "Health Physicist-Trainee" to progress to a "Health Physicist-Advanced" position after 9 years of total experience and 14 training courses. Prior experience and training courses would also expedite a staff member's progression through the new career ladder.

The proposed career ladder recommendations were presented to the QI team's Executive Sponsor, the Director of the Office of Health Protection on April 5, 2018. The Executive Sponsor provided conditional career ladder approval and will seek approval for the proposed Radiological Health Career Ladder from the following stakeholders:

1. MSDH Quality Improvement Council (scheduled to meet June 21, 2018)
2. Human Resources
3. State Personnel Board

In addition to staffing and retention, another program challenge was to address the 2017 IMPEP recommendation. The Division's leadership initiated the development of the *Mississippi State Department of Health Radiological Health Manual* based on the guidelines provided by the Conference of Radiation Control Program Directors. A policy development QI subgroup was

created to develop and review policies and procedures identified as a priority based on IMPEP findings. The Policy Subgroup leverages its leadership team members to develop or strengthen departmental policy/procedures and ensure overall buy-in from the Branch staff for all policies and procedures. All policies and procedures developed by the Policy Subgroup are then reviewed by the QI team for comment and approval using the *Policy Review Checklist*.

The *Radiological Health Manual* is a work in progress and available electronically to all team members with hyperlinks to current regulations, policy/procedure, forms, checklists and NRC guidance.

Feedback on NRC's Program

The Program continues to appreciate the responsiveness of the Region IV State Agreements Officers (SAOs), as well as, the continued support from NRC Headquarters. The Mississippi Program reported that it benefits from regulations, guidance, and assurance reviews provided by the NRC and its subject matter experts. The Division Director commended the NRC for providing computer-based training and noted that the use of webinars to meet the refresher training requirements for staff. The Division Director encouraged the NRC to continue the webinars.

Program Reorganizations

The Division has not been reorganized since the 2017 IMPEP review. The QI team was established to address program deficiencies and 2017 IMPEP findings.

Program Budget/Funding

The Program is currently benefitting from a recent increase in the overall fee structure. Recent personnel restructuring moves, if approved, will allow the Program to project future funding to cover the career ladder improvements if approved. The Program has statutory authority to increase licensee fees within the next 2 years.

The Division requested and received approval by the State Board of Health on August 20, 2016, to increase certain program fees by a total of 30 percent. The Program chose to increase fees initially by 15 percent and delay the remaining increase to support QI career ladder recommendations and future program improvements. The ability to increase fees could also support additional QI team recommendations, including a new billing system.

Technical Staffing and Training (2017 IMPEP Satisfactory)

The Program is composed of five technical staff and the Division Director. Technical staff conduct inspections, perform licensing actions, and respond to incidents and allegations. There has been no turnover since the 2017 IMPEP review. At the time of the periodic meeting, there were no vacancies; however, the most recent hire left the Program on April 27, 2018, to pursue opportunities elsewhere.

The Program has a documented training and qualification policy that is compatible with NRC IMC 1248. The QI team's Policy Subgroup met on April 5, 2018, to conduct a review of the Branch Training Policy, procedures, and supporting documents. The Policy Subgroup identified procedure enhancements, which included additional detailed qualification expectations and instructions to certify staff members as qualified license reviewers and/or inspectors.

To support the Technical Staffing and Training performance indicator objectives, a 6x4 white board was installed to visually display the Division's organizational chart, including the Branch's staff qualifications and monthly inspection schedule.

Status of Materials Inspection Program (2017 IMPEP Satisfactory)
Technical Quality of Inspections (2017 IMPEP Satisfactory)

The Branch conducted 6 initial inspections, and 42 Priority 1, 2, or 3 inspections since the 2017 IMPEP review. None of the inspections were conducted overdue.

The Branch inspected more than 20 percent of all candidate licensees since the last IMPEP review. In 2017, the Division inspected 4 of 18 (22 percent) candidate reciprocity licensees.

Inspection findings are communicated to licensees in a timely manner according to the Branch's procedures (30 calendar days after inspection completion or 45 days for completion of team inspections as specified in NRC IMC 0610, Nuclear Material Safety and Safeguards Inspection Reports). The Branch Manager and/or Division Director review all inspection reports before issuance.

Supervisory accompaniments of the inspection staff have been performed at least annually for all qualified staff members since the 2017 IMPEP review.

Technical Quality of Licensing Actions (2017 IMPEP Satisfactory but Needs Improvement)

The Branch currently has 278 specific licensees. The Branch completed a total of 374 licensing actions (164 amendments, 164 renewals, 19 initials, and 27 terminations) since the last IMPEP review. The Branch also issued 73 reciprocity licenses since the last review.

Recommendation from 2017 IMPEP: The MRB recommends that the Program reviews its guidance, including licensing, incident, and allegation guidance; update this guidance, as appropriate; and provide training to all Program staff on the new procedures.

To address the recommendations from the last IMPEP review, the Program reported taking the following actions.

1. The Branch's Licensing Policy and Procedure was revised to provide clarification on the Part 37 and Medical Radiation Safety Officer (RSO) licensing requirements. The licensing procedures were updated to include step by step instructions to standardize the process for licensing activities for the staff.
2. A QI team Policy Subgroup was created to strengthen and standardize existing allegation policy/procedures. A review of Tennessee and North Carolina allegation policy/procedures indicated a streamlined approach could be utilized to combine complaints, allegations, and incidents (CAI) into one policy. The QI team Policy Subgroup developed CAI policy, procedure, reporting tables, standardized response letters and forms. On February 1, 2018, staff members were provided training on the leadership approved CAI Policy and Procedure.
3. All Radiation Safety Officers (RSOs) for a medical use radioactive material license will be qualified according to State Regulations under Rule 1.7.19. This rule requires written attestation, signed by a preceptor RSO that the individual has satisfactorily completed

the requirements in Rule 1.7.19 and has training in radiation safety, regulatory issues, and emergency procedures for the types of use for which a licensee seeks approval. It should be noted that on February 17, 2018, Mississippi adopted NRC regulations by reference.

4. The Division issued a letter to 118 medical licensees with RSOs added to the license on or after 2012 (the year of adoption of current state regulations) to include the Rule 1.7.19 requirements and enclosed an RSO Training and Experience and Preceptor Attestation form. As of February 12, 2018, all 118 licensees subject to the preceptor attestation requirements had submitted the documentation of training and attestation according to Rule 1.7.19 of the Mississippi State Department of Health Regulations adopted in 2012.

All Branch staff have been trained on the licensing requirements and regulation in Rule 1.7.19 for RSO's authorized under a medical use license. Licensing checklists have also been amended to include review of RSO training requirements under Rule 1.7.19.

5. A specific Part 37 condition was included in the initial license and/or amendment until the adoption of 10 CFR Part 37 into Mississippi regulations (adopted February 17, 2018).
 - a. All Branch staff have been trained on the updated Part 37 licensing interpretation based on Table 1, 10 CFR Part 37, Appendix A, which includes the threshold for the International Atomic Energy Agency's Code of Conduct for Category 1, Category 2, or quantities of radioactive material aggregated using the "sum of fractions" methodology that meet or exceed the threshold for a Category 2 quantity of radioactive material.
 - b. All Branch staff have been trained on the use of the Risk Significant Radioactive Materials checklist when performing license reviews subject to 10 CFR Part 37 requirements.
6. All of the active Agreement Letters for Reciprocity were modified to include a specific 10 CFR Part 37 license condition.
 - a. Reciprocity licensees are also required to follow Mississippi regulations, which adopted NRC regulations by reference on February 17, 2018.
 - b. All Branch staff have been trained on the basis for citation of licensees under reciprocity according to rule 1.3.26(1)(c) (now Title 10 CFR 150.20(b)), which states that the out-of-state licensee must comply with all applicable regulations of the Agency and with all the terms and conditions of the licensing document, except any such terms and conditions which may be inconsistent with applicable regulations of the Agency.

7. The QI team identified time spent conducting licensing actions as a root cause associated with employee retention. The QI team Policy Subgroup met on January 26, 2018, to strengthen and standardize the existing Licensing Policy and Procedure. The QI team updated the Licensing Policy and Procedure to include General License Registration Form 1096, medical RSO requirements, 10 CFR Part 37 requirements, and reciprocity improvements suggested by the IMPEP team. The Licensing Policy and Procedure was formally adopted by the Division on March 21, 2018.
8. The QI team also plans to present ideas and categorize through an affinity diagram to identify problems with the licensing process and work with additional QI tools to develop a more streamlined process to efficiently and effectively perform licensing actions.

At the periodic meeting, the NRC staff reviewed eight of Mississippi's licensing actions for authorized users, radiation safety officers, and Part 37 authorizations. The NRC staff determined that licensing actions were complete, thorough, and of adequate technical quality. The NRC staff determined that Mississippi had satisfactorily implemented the corrective actions listed above and updated the Division's guidance to address the MRB's recommendation.

Technical Quality of Incidents and Allegations (2017 IMPEP Satisfactory but Needs Improvement)

The QI team Policy Subgroup was assigned to strengthen and standardize existing incident and allegation policies and procedures. The QI team also addressed the 2017 IMPEP team's recommendations that were incorporated into one recommendation for Technical Quality of Licensing Actions by the MRB.

The QI team Policy Subgroup reviewed the existing procedures and determined the expectations for nuclear material event reporting could be added to the CAI Policy and Procedure. All Branch staff were trained on the nuclear material event reporting expectations of the CAI Policy and Procedure on February 1, 2018.

Since the 2017 IMPEP review, the Branch reported five events to the Nuclear Material Events Database when they were reported to or discovered by the Branch. The events involved a possible overexposure, a medical event, two lost sources, and a fixed gauge malfunction. All incidents were documented, filed, and reported to the NRC according to State Agreements (SA) Procedure SA-300, *Reporting Material Events*. All incidents for licensee material events that required reporting according to SA-300 were reported to the NRC in a timely manner. Since the IMPEP review, all incidents have been investigated, documented, filed, reported, and closed as required by CAI Policy and Procedure.

As listed above in the licensing section, to address the MRB's recommendation, the QI team conducted a review of Tennessee's and North Carolina's allegation policy and procedures. The review indicated that a streamlined approach could be utilized to combine CAI into one policy. The QI team Policy Subgroup developed CAI policy, procedure, reporting tables, standardized response letters, and forms. The Program's policy is that all CAIs will be investigated to determine whether they can be substantiated and closed out. All CAIs will be documented and filed in the CAI file for each year.

Since the 2017 IMPEP review, five allegations involving Mississippi licensees were received by the Branch. All five allegations have been investigated and closed by Mississippi, with responses provided to the allegers, where appropriate. No allegations were referred from the NRC to Mississippi.

Compatibility Requirements (2017 IMPEP Satisfactory but Needs Improvement)

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 Mississippi. No new legislation affecting the Program was created or implemented since the last IMPEP review.

To ensure future compliance with NRC Compatibility Requirements, Mississippi chose to adopt NRC regulations by reference. The Department submitted a request to adopt applicable NRC regulations by reference to the Mississippi Radiation Advisory Council for review, comment, and approval in November 2017. The regulations were approved by the Mississippi State Board of Health on January 10, 2018, and became part of the Mississippi Administrative Code on February 17, 2018. The NRC staff provided comments on the regulations adopted by reference to the Department for resolution on February 27, 2018. The Department updated the regulations to include NRC comments and filed them with the Mississippi Secretary of State's Office prior to the periodic meeting on April 25, 2018. If the Mississippi State Board of Health approves the updates on July 11, 2018, the regulations can be submitted to the Secretary of State's office for final adoption into the Mississippi Administrative Code and become effective 30 days after State Board of Health approval. The Program anticipates an effective date of August 15, 2018.

Sealed Source and Device (SS&D) Evaluation Program (2017 IMPEP Not Reviewed)

In the over 50-year history of Mississippi Agreement State Program, no SS&D evaluations have been performed by Mississippi, i.e., there have been no source or device manufacturers in Mississippi. Previous efforts to return the SS&D program to the NRC have not been approved by the Mississippi Governor's office. In February 2018, the Department adopted NRC regulations by reference, and the SS&D Program was retained.

Current State Initiatives

To address the IMPEP review deficiencies, the Division initiated a QI team on September 14, 2017. All members of the Branch serve as QI team members and meet weekly to identify root causes and recommend improvements using continuous quality improvement methods for all IMPEP performance indicators.

To standardize and improve documentation, the Division leadership designed an overarching manual based on the Conference of Radiation Control Program Directors guidelines. The new and improved *Radiological Health Manual* will include updated Branch policies and procedures. The *Radiological Health Manual* is expected to improve the staff's knowledge, skills, and abilities, as well as, serve as orientation and training materials for new staff.

Current NRC Initiatives

- Forthcoming enforcement guidance on the Instadose dosimeter
- Molybdenum-99 Generators and Decommissioning Funding Plans
- NRC Office of the Inspector General Audit of the National Materials
- Revisions to NRC Management Directives (e.g., 5.6 IMPEP, 5.9 Adequacy and Compatibility)
- Revisions to State Agreements procedures (e.g., SA-100 IMPEP, SA-116 Periodic Meetings, SA-105, IMPEP Review of Incidents and Allegations)
- Category 3 source accountability
- Revisions to Inspection Manual Chapters (e.g., IMC 2800 Nuclear Materials Program - changing license renewals from 10 to 15 years)
- Proposed Rulemaking (e.g., 10 CFR 35, revisions to medical licensing requirements)

State's Mechanisms to Evaluate Performance

Branch leadership conducts annual inspector accompaniments to ensure standardization and best practices are utilized. Division leadership also conducts annual reviews of the radioactive materials program to ensure compatibility with IMPEP standards. Future initiatives include logic model development to clearly identify program outcomes and to identify strategies to achieve those outcomes.

CONCLUSIONS:

Mississippi continues to adequately protect public health and safety. Since the 2017 IMPEP review, the Program has completed several actions to improve staff retention, technical quality of licensing actions, and responses to incidents and allegations. The Program has also adopted NRC regulations by reference. Based on these actions, and the progress made in addressing the MRB's recommendations, the NRC staff recommends that Mississippi be removed from Monitoring and that the next full IMPEP review be conducted as scheduled in April 2021.