UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, ILLINOIS 60532-4352

January 8, 2021

Mr. Adnan Khayyat, Chief
Division of Nuclear Safety
Illinois Emergency Management Agency
1035 Outer Park Drive
Springfield, IL 62704

SUBJECT: Illinois FY20 IMPEP Periodic Meeting Summary

Dear Mr. Khayyat:

A periodic meeting with Illinois was conducted via WebEx on November 10, 2020. The purpose of this meeting was to review and discuss the implementation of Illinois' Agreement State Program. The Nuclear Regulatory Commission (NRC) was represented by David Pelton, Director, Division of Nuclear Materials Safety; and Darren Piccirillo, Regional State Agreements Officer from NRC's Region III Office.

We have completed and enclosed a general meeting summary. If you feel that our comments or conclusions do not accurately summarize the meeting discussion, please contact me at 630 829-9661, or via email at Darren.Piccirillo@nrc.gov to discuss your comments.

Sincerely,

Darren W. Piccirillo Digitally signed by Darren W. Piccirillo
Date: 2021.01.08 08:42:57 -06'00'

Darren W. Piccirillo
Regional State Agreements Officer

Enclosure:
Periodic Meeting Summary for Illinois

Letter to Adnan Khayyat from Darren Piccirillo dated January 8, 2021.

SUBJECT: Illinois FY20 IMPEP Periodic Meeting Summary

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INTEGRATED MATERIALS PERFORMANCE EVALUATION PROGRAM

PERIODIC MEETING WITH THE STATE OF ILLINOIS

TYPE OF OVERSIGHT: NONE

November 10, 2020

PERIODIC MEETING PARTICIPANTS

NRC

- David Pelton: Director, Division of Nuclear Materials Safety, NRC Region III
- Darren Piccirillo: Regional State Agreements Officer, NRC Region III

State of Illinois

- Alicia Tate-Nadeau, Director and Governor's Homeland Security Advisor
- Scott Swinford, Deputy Director, Nuclear Safety Administrator II
- Adnan Khayyat, Division Chief, Division of Nuclear Safety
- Gary Forsee, Head, Radioactive Materials Section
- Kelly Horn, Head, Environmental Management Section
- Mary Burkhart, Supervisor, Materials Licensing Unit
- Robin Muzzalupo, Supervisor, Inspection and Enforcement Unit

1.0 INTRODUCTION

This report presents the results of the periodic meeting held between the U.S. Nuclear Regulatory Commission (NRC) and the State of Illinois. The meeting was held remotely via WebEx on November 10, 2020 and was conducted in accordance with NMSS Procedure SA-116 “Periodic Meetings between IMPEP Reviews,” dated June 3, 2009.

The Illinois Agreement State Program is administered by the Radioactive Materials Section (the RAM Section) and the Environmental Management Section (the EM Section), which are located within the Division of Nuclear Safety (the Division). The EM Section regulates low-level radioactive waste, uranium recovery, and decommissioning. In addition, since 2014, the EM Section took the lead for responses to scrap yard radiation monitor trips and orphan sources. The Division is part of the Illinois Emergency Management Agency (the Agency).

At the time of the review, the Illinois Agreement State Program (the Program) regulated 576 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 Illinois.

The Division is fee funded. At current staffing levels, the radioactive materials licensing fees fully cover both personnel and operational costs. There is support from senior administration to maintain funds as allocated.

The Division last underwent an Integrated Materials Performance Evaluation Program (IMPEP) review from April 16-20, 2018 (ML18191B332). A Management Review Board (MRB) meeting to discuss the outcome of the IMPEP review was held on July 19, 2018.

During the July 19, 2018, MRB meeting, the Illinois Agreement State Program’s performance was found to be satisfactory for all indicators reviewed. The team made no new recommendations and there were no open recommendations from the previous review for the team to consider. Accordingly, the team recommended, and the MRB agreed, that the Illinois Agreement State Program is adequate to protect public health and safety and compatible with the NRC's program. The team recommended, and the MRB agreed, that the next IMPEP review will take place in approximately 5 years with a periodic meeting in approximately 2.5 years.

2.0 COMMON PERFORMANCE INDICATORS

Five common performance indicators are used to review the NRC Regional Office and Agreement State radioactive materials programs during an IMPEP review. 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.

2.1 Technical Staffing and Training

(2018 IMPEP Rating: Satisfactory)

The allocation of full-time equivalents (FTE) for the Illinois Agreement State Program has not changed since the 2018 IMPEP. The Program is comprised of three managers, two

section heads, and 17 technical staff members which equals 22 full-time equivalents (FTE) for the Agreement State Program when fully staffed. The six vacancies, three in licensing and three in Inspection & Enforcement (I&E) Unit, noted in the 2018 IMPEP report have now been filled. Since then, two additional vacancies have opened: an administrative support position and a Materials Security Specialist. The administrative support position remains open but is not currently impacting technical capabilities or efficiency. The security specialist position was recently (December 2020) populated with another materials inspector and security inspections integrated into existing I&E unit responsibilities. As such, all radioactive material inspectors must become qualified and be accompanied by a senior inspector prior to conducting security inspections. Security inspections are viewed as their own modality and require their own training/evaluation/and sign-off in the inspector's qualification journal. IEMA currently has sufficient trained staff to adequately and timely complete all security inspections.

The Program has a training and qualification program equivalent to the requirements in Inspection Manual Chapter (IMC) 1248. There have been no program changes since the 2018 IMPEP. Program staff's progress with training completion has been somewhat delayed as a result of the COVID PHE, including the unavailability of some NRC coursework. A 12-hour refresher training is held each year to meet the 24-hour every two-year refresher requirement. Additionally, the Program has implemented teleconferences every two weeks to share and discuss technical and operational issues.

2.2 Status of the Materials Inspection Program
(2018 IMPEP Rating: Satisfactory)

The Agency inspects at a frequency at least as frequent as NRC, with increased frequencies for some security-related sources. The RAM Section performed 555 inspections during the review period (April 20, 2018 – October 30, 2020). Three-hundred and eleven (311) of these were priority 1, 2, 3, and initial inspections.

As noted during the 2018 IMPEP, the inspection backlog and lack of inspectors began to take its toll in 2017 and 2018. Despite an initial lag in getting inspectors signed off on the required modalities, and to a point where they could independently perform inspections, the Program made significant progress in reducing its inspection backlog. By the fall of 2019, the I&E Unit completed the last overdue Priority 1, 2 and 3 inspections. All Priority 1, 2 and 3 inspections have since been performed in accordance with the IMC 2800 inspection frequency.

As a result of the previous inspection backlog that carried forward from 2018, the RAM Section currently shows 24 percent of the inspections were performed overdue (76 of 311 Priority 1, 2, or 3, and 0 out of the 68 initial inspections). However, the last overdue inspections were completed in the fall of 2019 and no initial inspections have been performed overdue. A sufficient number of trained staff are now available such that additional overdue inspections are no longer anticipated. Provided inspection frequency is maintained, without additional impacts from COVID or staff turnover, the RAM Section projects an overdue percentage below 10 percent for the 2023 IMPEP. The Agency currently has no Priority 1, 2 or 3 inspections overdue for inspection.

IEMA has adopted NRC's IMC 2800, Issued March 2, 2020, which removed the quantitative inspection goals associated with reciprocity inspections but maintained internal performance-based goals. Specifically, as resources allow, inspection staff

strive to inspect 10 percent of all reciprocity candidates annually. Additionally, any reciprocity inspections that involve manipulation of CAT 1 quantities of radioactive material will have an inspector on site to evaluate and perform a reciprocity inspection. These internal performance goals have been met throughout the review period.

Inspection findings are routinely sent to licensees within 30 days of the inspection exit.

2.3 Technical Quality of Inspections
(2018 IMPEP Rating: Satisfactory)

Because the majority of inspectors are currently working on independent qualification across modalities, IEMA staff have exceeded the requirement to conduct one accompaniment per inspector this year. Specifically, 185 accompaniments have been performed from April 2018 through October 2020.

Only two accompaniments of supervisors have not been performed since the 2018 IMPEP. The current I&E supervisor, as well as the previous I&E supervisor, were both due for an accompaniment in October 2020. The COVID PHE, travel restrictions, and the physical separation of the offices prevented timely completion of these two accompaniments. These supervisor accompaniments were scheduled for December 2020 and did not have any impact on the Program.

2.4 Technical Quality of Licensing Actions
(2018 IMPEP Rating: Satisfactory)

The Agency had approximately 576 specific licensees at the time of the periodic meeting, which includes three LLRW/Uranium Recovery licenses and 20 pending terminations. Since the 2018 IMPEP review, the Agency completed 1365 total licensing actions, which includes: 1058 license amendments, 90 license renewals, 38 new license applications, and 56 license terminations, 39 Financial Assurance, and 84 other licensing actions.

At the time of the Periodic Meeting, the Agency had 103 licenses under timely renewal. A backlog exists, with the review of license renewals, primarily due to three factors. The first factor was the type of renewal reviews being conducted (“full” verses “expediated”). The second factor was the fact that the Agency had hired two license reviewers with no previous experience, and they could not immediately help to alleviate the backlog. The third was the COVID-19 Public Health Emergency, during which all Licensing Staff and the Unit Supervisor were reassigned to the State Emergency Operations Center (SEOC) for up to four months. During this period, the issuance of licensing actions was diminished.

All licensing actions go through the same pre-licensing process. Upon receipt of applications, the Agency’s database is updated, an initial review is performed to ensure proper fees have been paid, that municipalities are notified if appropriate and the action is assigned to a reviewer. If the action results in fees or refunds, a form is prepared and transmitted to the Fiscal Section for billing. License reviewers are assigned actions with the following priorities listed from highest to lowest; new applications, amendments, sealed source and/or device evaluations, termination, renewals. If the radioactive materials requested trigger security measures, this is noted on the “blue sheet” and subsequently in the database so that the reviewer will ensure that licensee will

implement the necessary procedures. All actions must be reviewed in accordance with the Pre-licensing and Licensing Confidence Security checklists as well as the technical review checklists.

2.5 Technical Quality of Incident and Allegation Activities
(2018 IMPEP Rating: Satisfactory)

The Agency has procedures in place that are equivalent to the event reporting requirements delineated in SA-300. These remain unchanged from the 2018 IMPEP review. During the 2018 IMPEP, there were concerns about reporting timeliness. Previous to 2018, event reporting had occurred when the Agency was able to confirm it was a reportable event. This stood the potential to miss the SA-300 reporting timelines. Since the 2018 IMPEP, IEMA has addressed this issue and reports all events as required in SA-300. Reactionary inspections take priority over other I&E activities and result in a site visit, generally within 24 hours. Once uploaded to NMED and reported to the HOO, any open events are updated in NMED and electronically uploaded every 30 days. Following receipt of the licensee's written reports (if applicable) and determination of root cause, events are closed in a timely manner. The Agency currently only has two open NMED events.

Overall, there have been 109 events and allegations since the April 2018 IMPEP. All events which required reporting were communicated to NRC in compliance with SA-300 reporting timelines, except for one involving a damaged moisture density gauge that was not reported to the NRC Headquarters Operations Officer within 24 hours. The event response, by both IEMA and the licensee, was otherwise appropriate and all nuclear material was maintained in a safe and secure condition.

Four allegations were referred to IEMA in 2019, none in 2018 or 2020 to date. All allegers were contacted by the Agency for additional details. Inspectors were dispatched for reactive inspections and the allegers' identity secured. Instances of noncompliance were addressed through appropriate enforcement action and notification provided to the alleger on the status of their concerns within 30 days.

3.0 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 Illinois relinquishes regulatory authority for all four non-common performance indicators. Although the Illinois Agreement State Program has LLRW disposal authority, Illinois does not have any active LLRW sites, therefore, this non-common performance indicator was not reviewed during the Periodic Meeting.

3.1 Compatibility Requirements
(2018 IMPEP Rating: Satisfactory)

Illinois' administrative rulemaking process takes approximately 12 months from drafting to adoption depending on the complexity of the rule change.

Once drafted, a proposed amendment/regulation is sent for internal Agency approvals. Next, the proposed amendment/regulation is submitted to the Joint Committee on Administrative Rules (JCAR), a bipartisan legislative committee, and the first of two public comment periods begins with publication in the Illinois Register. The public, the NRC, other agencies, and all potentially affected licensees and registrants may comment during the rulemaking process. After a hearing before JCAR, the Agency may file for adoption. An expedited process may be used for amendments/regulations that require strict compatibility with the NRC. There are no changes to Illinois' rulemaking process, and there were no legislative changes affecting the program since the 2018 IMPEP. Illinois' rules and regulations are not subject to "sunset" laws.

During the 2018 IMPEP no regulations were overdue for adoption. During the review period, the State finalized regulatory amendments and received NRC correspondence stating "No Comments" for 2015-3, 2018-2, 2018-3, 2019-1, and 2019-2. There are currently four outstanding regulatory amendments (2018-1, 2020-1, 2020-2, and 2020-3), which have due dates in January 2022 and mid-2023. Work is ongoing to provide NRC with proposed amendments ahead of schedule.

3.2 Sealed Source and Device Evaluation Program
(2018 IMPEP Rating: Satisfactory)

The RAM Section has two staff qualified to perform Sealed Source and Device (SS&D) reviews. The Agency plans to train two additional staff members to be fully qualified to perform SS&D evaluations to bolster the ranks of qualified staff and to replace the one staff member who is planning to retire in 2021. Illinois has a training program for SS&D reviewers equivalent to the NRC training requirements listed in IMC 1248, Appendix D.

Illinois currently has 13 active SS&D registry documents. The team evaluated five SS&D actions since the April 2018 IMPEP. Currently, the Agency is evaluating whether the Krones, Inc. source substitution rises to the level of a defect. Initial findings indicate that no substantial safety hazard exists. If the sources in the field are found to not be properly seated in the source holder due to dimension tolerances being exceeded, the Agency may reclassify the status of the occurrence to a defect.

3.3 Uranium Recovery Program
(2018 IMPEP Rating: Satisfactory)

The EM Section administers the uranium recovery program. At the time of the IMPEP review, the EM Section regulated one rare earth facility, which is in the process of decommissioning. The rare earth facility is located on a 43-acre parcel of land within the city limits of West Chicago. The rare earth facility is surrounded by light commercial shopping areas and residential housing. A rail line separates the housing on the west side of the facility. The rare earth facility operated from 1932 through 1973, producing and refining chemicals and metals, including thorium and rare earth compounds. The thorium was produced for commercial entities and the Federal government.

EM Section staff members and management are responsible for licensing actions, inspections, and routine environmental sampling at the rare earth facility. The EM Section, which is supervised by the Section Head, is divided into three units: Radiological Field Services (LLLRW and Decommissioning), Hazardous Materials, and Radon. The EM Section has one technical staff member located in West Chicago. At

the time of the Periodic Meeting, one technical staff member and one manager provided technical support to the EM Section by managing the uranium recovery program.

The EM Section has an inspector who performs ongoing, continuous site assessment and inspection-related activities at the rare earth facility. Formal correspondence is sent to the licensee when issues or findings are identified by the EM Section inspector with regards to the continuous site assessment. Since the 2018 IMPEP, the EM section has conducted 25 license actions including annual license inspections and license renewals. The EM Section continues to conduct inspections and issue formal inspection reports as the site enters the next phase of decommissioning activities. In addition to the inspector, the EM Section relies upon contractors who perform periodic site assessments, quality assurance audits, and evaluations of activities at the rare earth facility.

The EM Section reported that no allegations were received directly or referred by NRC, and they experienced no significant events.

3.4 Low-Level Radioactive Waste (LLRW) Disposal Program
(2018 IMPEP Rating: Satisfactory)

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 Low-Level Radioactive Waste as a separate category. There are no plans for a LLRW disposal facility in the state of Illinois. Accordingly, this non-common performance indicator was not reviewed during the Periodic Meeting.

The State of Illinois has been the long-term custodian for the Sheffield disposal site since 2000. The Sheffield disposal site is a closed facility in maintenance and monitoring mode. It is located approximately three miles southwest of the town of Sheffield in Bureau County, Illinois. Currently, activities at the site are limited to those required by State regulations including quarterly ground water sampling and land surveys of the trench cap every 5 years performed by the EM Section. In addition, a contractor is on site daily to perform maintenance, monitor the fence, and the trench cap.

4.0 SUMMARY

The Illinois Emergency Management Agency continues to be an effective and well managed Agreement State program. The Agency is effectively managing its licensing and inspection activities, even in the face of the COVID-19 pandemic. The Agency will respond to events as appropriate, and they currently have no overdue regulation amendments. Based on the information discussed during the Periodic Meeting, NRC staff recommends that the next IMPEP review for the Illinois Emergency Management Agency be conducted as scheduled in 2023. The Agency did not request a Special MRB.