NRC INSPECTION MANUAL

INSPECTION PROCEDURE 83822

RADIATION PROTECTION

Effective Date: 12/30/2022

PROGRAM APPLICABILITY: IMCs 2602 and 2800

- 83822-01 INSPECTION OBJECTIVE
- 01.01 To determine whether the licensee's implementation of the radiation protection program is in accordance with license and regulatory requirements.
- 01.02 To evaluate the adequacy of the licensee's radiation protection program.

83822-02 INSPECTION REQUIREMENTS

02.01 Radiation Protection Program

Verify that the radiation protection program, commensurate with the potential risk involved in the licensee's activities, is being implemented and documented. Verify that program performance is being reviewed at least annually, both for content and implementation.

02.02 Radiation Protection Procedures

Verify that changes in the radiological protection procedures made since the last inspection are consistent with regulations and license requirements.

02.03 Instruments and Equipment

Verify that the performance of radiation protection instruments and equipment is in accordance with license requirements and licensee procedures.

- 02.04 Exposure Controls
 - a. <u>External Exposure</u>. Determine that the licensee's performance is in accordance with the regulatory requirements described in Title 10 of the *Code of Federal Regulations* (10 CFR) Part 20, "Standards for Protection Against Radiation."
 - b. <u>Internal Exposure</u>. Determine that licensee's performance is in accordance with the regulations described in 10 CFR Part 20.
 - c. <u>Respiratory Protection</u>. For facilities with a respiratory protection program, determine if licensee's performance is in accordance with 10 CFR Part 20, Subpart H, "Respiratory Protection and Controls to Restrict Internal Exposure in Restricted Areas."

02.05 Posting, Labeling, and Control

- a. <u>Posting and Labeling</u>. Determine if licensee's performance is in accordance with 10 CFR 20.1902, "Posting Requirements," §20.1903, "Exceptions to Posting Requirements," 10 CFR 20.1904, "Labeling Containers," §20.1905, "Exemptions to Labeling Requirements," §20.1501, "General," §20.1502, "Conditions Requiring Individual Monitoring of External and Internal Occupational Dose," and other posting and labeling requirements specified in the license or licensee procedures.
- b. <u>Control</u>. Determine if licensee's performance is in accordance with the following regulations and license requirements:
 - 1. 10 CFR 20.1601, "Control of Access to High Radiation Areas."
 - 2. 10 CFR 20.1602, "Control of Access to Very High Radiation Areas."
 - 3. 10 CFR 20.1801, "Security of Stored Material."
 - 10 CFR 20.1802, "Control of Material not in Storage." Constant surveillance has been defined by the U.S. Nuclear Regulatory Commission (NRC) as having the ability to take physical control of and maintain visual contact with the radioactive materials at all times (see NUREG-1736, "Consolidated Guidance: 10 CFR Part 20 – Standards for Protection Against Radiation.")
 - 5. 10 CFR Part 37, "Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material."
 - 6. Inventory and accountability for all sources of radioactive material is performed at the frequency established in the standard operating procedures or the license.
- c. <u>Posting of Notices</u>. Determine if licensee's performance is in accordance with 10 CFR 19.11, "Posting of Notices to Workers."

02.06 Surveys

- a. <u>Requirements</u>. Determine if licensee's performance is in accordance with the following regulations:
 - 1. 10 CFR 20.1501(a) & (b), "General Surveys of Areas, including the Subsurface."
 - 2. 10 CFR 20.2103, "Records of Surveys."
- b. <u>Leak Tests</u>. Verify if licensee's performance is in accordance with license requirements or other NRC regulations for leak testing of radioactive sealed sources.

02.07 Notifications and Reports

- a. <u>To the NRC</u>. Determine if licensee's performance is in accordance with the following regulations and license requirements:
 - 1. 10 CFR 20.2201, "Reports of Theft or Loss of Licensed Material," and §20.2202(b), "Notification of Incidents."

- 2. 10 CFR 20.2202 and §20.2203, "Reports of Exposures, Radiation Levels, and Concentrations of Radioactive Material Exceeding the Constraints or Limits."
- 3. Other radiation protection reports required by the license and applicable provisions of 10 CFR Parts 30 through 39, §40, §70 and §72.
- b. <u>To the Individual</u>. Determine if licensee's performance is in accordance with 10 CFR 19.13, "Notifications and reports to individuals."

02.08 As Low As Is Reasonably Achievable (ALARA)

Paragraph 20.1101(b) of 10 CFR Part 20, "Radiation Protection Programs," states that persons engaged in NRC licensed activities shall, to the extent practicable, maintain occupational doses and doses to members of the public ALARA. During inspections:

- a. Determine if management has made a commitment to minimize exposure to workers and has clearly defined procedures and policies to implement the ALARA philosophy.
- b. Determine that licensee personnel are made aware of management's commitment to keep occupational exposures ALARA and that management has promoted a work environment where employees are encouraged to raise ALARA concerns and receive timely feedback on submitted issues.
- c. Determine that the radiation protection staff has been given responsibility and authority to carry out ALARA policies and that workers have been adequately trained to understand the ALARA philosophy and how it should be implemented at their workplaces. Verify that radiation safety staff have stop work authority.
- d. Determine that management and its designees perform periodic (at least annual) audits of its program in accordance with 10 CFR 20.1101(c). Special attention should be given to methods to lower internal and external occupational exposure and to determine that effluents released are ALARA to protect the environment and limit public dose.
- e. Determine if licensee's performance is in accordance with 10 CFR 19.12, "Instruction to Workers," with respect to workers' understanding of radiation protection in their workplace, and how the training received includes an understanding of ALARA as it pertains to the workplace.
- f. Determine whether cost-beneficial modifications to equipment, facilities, and procedures, have been made where practicable to reduce exposures. Also determine if the licensee has considered the ALARA philosophy during the engineering design phase for changes in facilities, equipment, or processes.
- g. Determine if the Radiation Safety Officer (RSO) and radiation protection staff's performance includes:
 - 1. Identification of the origins of radiation exposures by location and job category and have noted trends in the amounts of radiation at the locations.
 - 2. Consideration of ways to reduce exposures in those locations where exposure to personnel is significant.

- 3. Periodically reviewing operating procedures that affect radiation safety and have made surveys of operations to identify situations where radiation exposures can be reduced.
- h. Determine if licensee's performance includes the use of adequate equipment and supplies in the radiation protection program, and if procedures are available for proper use of these supplies and equipment.

02.09 Minimization of Contamination

Determine if a licensee's performance is in accordance with 10 CFR 20.1406(c), "Minimization of Contamination," which states licensees shall, to the extent practical, conduct operations to minimize the introduction of residual radioactivity into the site, including the subsurface, in accordance with the existing radiation protection requirements in 10 CFR Part 20, Subpart B, "Radiation Protection Programs," and radiological criteria for license termination in 10 CFR Part 20, Subpart E, "Radiological Criteria for License Termination."

83822-03 INSPECTION GUIDANCE

03.01 Radiation Protection Program

Review the outcome of the licensee's implementation of its radiation protection program to determine if licensee's performance ensures safety and compliance with regulatory requirements. Determine if the program content and implementation are being reviewed at least annually. Inspect the documentation for these reviews.

- a. Review of the licensee's Health Physics (HP) logbook or file on HP problems may be useful to identify areas deserving special attention. Particular attention should be directed toward identifying problematic trends. Ascertain whether corrective actions were directed toward the cause and not merely the effects and were appropriate for long term prevention of reoccurrence.
- b. Regulatory Guides (RGs) 8.8, Revision 3, "Information Relevant to Ensuring that Occupational Radiation Exposures at Nuclear Power Stations Will Be As Low As Is Reasonably Achievable," and 8.10, Revision 2, "Operating Philosophy for Maintaining Occupational Radiation Exposures As Low As Is Reasonably Achievable," provide useful guidance to the licensee regarding ALARA. If the licensee has a documented commitment to ALARA, the inspector should discuss implementation of the program with management and staff. The inspector should verify that the ALARA goals are adequate and realistic.
- c. The licensee may have submitted radiation protection program manuals and procedures with the license application, and, in some cases, those program manuals or procedures may be included in license conditions. As such, the licensee's statements and representations contained in these manuals and procedures are NRC requirements, the implementation of which the inspector may review in addition to specific items identified in this inspection procedure (IP).

03.02 Radiation Protection Procedures

Review any substantive changes to procedures that have been implemented since the last inspection. Verify that limits, precautions, controls, etc., specified in the revised procedures are consistent with regulations and license requirements.

03.03 Instruments and Equipment

- a. Verify the licensee has adequately identified the radionuclides of concern expected to be encountered at their facility. Proper characterization of a source term is important in selecting appropriate instrumentation that will be used for routine HP surveys around the site and should also serve to inform the licensee's programs for planning and assessing internal dose. Characterization of source term should include consideration of radionuclides in legacy systems, storage areas and structures; and should be rigorous enough to identify hard to detect radionuclides.
- b. Select instruments of each major type and examine them to verify operability and proper alarm settings if alarm settings are applicable. These may include portable survey instruments, fixed monitoring equipment, constant air monitors, portable air samplers, pocket dosimeters, effluent monitors, personnel contamination monitors, and alarming dosimeters.
- c. Review the most recent calibration records of the instrument(s) selected for inspection to assure that the calibration and surveillance program for these instruments are being accomplished in accordance with license requirements or licensee procedures.
- d. Verify that the licensee has a system (a schedule, excel spreadsheet, etc.) which identifies all the instruments and identifies when they are due for calibration or functional testing.
- e. If the licensee calibrates its instruments rather than using a vendor, verify that the procedures used to calibrate the instruments selected above contain:
 - 1. Review and approval requirements of the licensee's procedural system or license requirements,
 - 2. Acceptance criteria including values for trip settings that conform to license requirements, if applicable, and
 - 3. Detailed stepwise instructions are provided to the operator.
- f. Verify that the licensee uses survey instruments that are appropriate for the type and intensity of radiation measured.

03.04 Exposure Controls

- a. <u>External Exposure</u>
 - 1. Examine any changes made in procedures for control and use of personnel monitoring equipment; verify that limits, precautions, controls, etc., specified in the procedures are consistent with regulations and license requirements.

Examine the type of personnel monitoring devices (dosimetry) used, the period of use or exchange period, and the number used to determine if these aspects seem consistent with the monitoring program. Determine who the supplier is, and if the service has been changed since the last inspection, determine the reasons for the change. Verify that the personnel dosimetry processor is accredited by National Voluntary Laboratory Accreditation Program (NVLAP). NOTE: If applicable to the facility being inspected, verify that processor is Department of Energy Laboratory Accreditation Program (DOELAP) accredited.

For facilities not using dosimetry, verify that the licensee has performed an evaluation demonstrating that unmonitored individuals are not likely to receive a radiation dose in excess of the limits specified in 10 CFR 20.1502.

For electronic dosimeters or pocket ion chambers, determine when the dosimeters are read, the number used and review the calibration procedures or drift test procedure.

Evaluate the adequacy of the licensee's procedures or system for evaluating and using personnel monitoring data to control and minimize exposures. The licensee should account for occupational radiation doses to personnel resulting from exposures to licensed material and other unlicensed radiation sources (e.g., x-ray machines, nuclear medicine studies, etc).

- 2. Review reports of exposure summaries generated since the last inspection to determine that licensee's performance is in accordance with regulatory requirements.
- 3. Review the records of all persons who received planned special exposures since the last inspection. Determine that exposure histories are on file for these individuals.
- 4. Determine, by discussion with supervision, if minors have been permitted to work in restricted areas and, if so, determine that licensee's performance is in accordance with 10 CFR 20.1207, "Occupational Dose Limits for Minors," by review of exposure records.
- 5. Determine by discussion with supervision and records review if any workers have declared a pregnancy since the last inspection. If so, review the declaration and the controls put in place to protect the worker and the embryo/fetus. Verify that the licensee has taken all reasonable actions to protect the embryo/fetus and is compliant with the requirements of 10 CFR 20.1208, "Dose Equivalent to an Embryo/Fetus."
- 6. For licensees who are <u>required</u> to monitor in accordance with 10 CFR 20.1502, review of all NRC Form 5 records may be appropriate, depending on the number of monitored personnel. For licensees who are not required to monitor a sampling of NRC Form 5 records generated as a result of voluntary monitoring may be appropriate. If a licensee is not required to monitor and chooses not to monitor worker exposures, the inspector need only review the licensee's presumptive analysis of exposures and verify the assumptions used in that analysis or review the historical dosimetry data and conditions and verify that site conditions have not changed in any way that would suggest the licensee need to reconsider the use of dosimetry.

b. Internal Exposure

- 1. During review of exposure evaluations, verify that the licensee's performance is in accordance with internal exposure limits.
- 2. Review selected air sampling and bioassay records.
- 3. By observation, discussion, and review of documentation, verify that engineering controls are considered and used to the extent practicable. Evaluation of process and engineering controls incorporated as part of the facility or equipment as licensed will be performed in the licensing process; the inspection program will evaluate the use of other engineering controls. In situations where a review for licensing is not applicable, such as medical licensees, review these items to the extent practicable to ensure that they comply with descriptions in license applications, or conform to license conditions. Discuss with NRC management prior to inspection.
- 4. Review documentation of evaluations performed as the result of unplanned exposures. Verify the appropriateness of preventive measures instituted following an unplanned exposure.

c. Total Dose

- 1. If the licensee is required to monitor under both 10 CFR 20.1502(a) and (b), verify the licensee had demonstrated compliance with the dose limits by summing the external and internal dose. Internal dose should include as applicable to operations dose due to inhalation, ingestion or absorption.
- 2. RG 8.40, "Methods for Measuring Effective Dose Equivalent from External Exposure," provides useful information associated with the determination of effective dose equivalent from External Exposure for evaluation of the summation of internal and external exposure.

d. Respiratory Protection

- 1. In accordance with the requirements of 10 CFR 20.1701, "Use of Process or Other Engineering Controls," licensees should use process or engineering controls to limit the concentration of radioactive materials in the air. If the use of process and engineering controls is not practicable an airborne area exists, verify that the licensee is maintaining the total effective dose equivalent as low as reasonably achievable. Methods for controlling dose in airborne areas include: use of access controls, limiting stay times, or requiring the use of respiratory protection or any combination of these or other controls to protect the health and the safety of the worker and minimize the impact on the worker from respirator use.
- 2. Determine that the respiratory equipment is certified by the National Institute for Occupational Safety and Health or otherwise approved by NRC. Determine proper selection of equipment.
- 3. Verify medical qualification status of personnel using respiratory protection. Ensure that personnel using respirators have a current fit test for the type of respiratory protection used and have completed respirator-specific training.

- 4. Determine by review of records and by discussions that a maintenance and training program is conducted and that it is administered and conducted in accordance with written procedures. Determine by review of records, discussions, and observations that respirator users are individually fitted for respirators and that respiratory equipment is operationally tested immediately prior to each use.
- 5. Select several control requirements and determine program performance by discussions, observations, demonstrations, or records review.
- 6. Determine the criteria used for selecting respirators. Ensure that the selection criteria use a protection factor that is greater than the multiple by which peak concentrations are expected to exceed the values of Table 1, Appendix B, Column 3 of 10 CFR Part 20.

03.05 Posting, Labeling, and Control

a. <u>Posting and Labeling</u>. Inspect representative areas to verify compliance; pay particular attention to temporary work areas that may be required for maintenance activity, newly established work areas, etc.

Verify that licensees have an adequate program to identify, post and control areas that can become airborne areas. Verify the licensee has a program to define, post and control contaminated areas. Inspect a sampling of containers in work or storage areas. Conduct radiation surveys to verify posting of storage area and labeling of containers is appropriate.

b. Control

- 1. Select one or more high radiation or very high radiation areas to verify that access is controlled in accordance with regulations or license requirements.
- 2. Inspect areas where radioactive material is located or stored in an unrestricted area.
- 3. Review a selection of radiation work permits (RWPs) on file and those currently in effect for review of access control requirements.
- 4. Review a selection of records (e.g., radiation level surveys, interlock tests, audible and visible alarm test results) and inspect work areas to verify licensee's controls ensure the safety of workers and members of the public.
- 5. For inspections of a licensee possessing quantities above the aggregated category 1 or 2 quantities of radioactive material, the inspector should also use IP 87137, "10 CFR Part 37 Materials Security Program" which contains the requirements and guidance for security inspections for licensees possessing category 1 and 2 quantities of radioactive material in specific areas such as security, transportation, and training.
- c. <u>Posting of Notices</u>. Determine, by questioning of management, how the licensee performs in accordance with the requirements of 10 CFR 19.11. Inspect bulletin boards or other places where notices are posted, ensuring current revisions are posted, and question a few individuals to determine if they are aware of the posting of notices.

03.06 Surveys

a. <u>Unrestricted release of materials, equipment, and personnel</u>. Through observation of surveys, discussions with radiation safety staff and other licensee employees and records review, verify that the licensee has an established survey program to ensure that equipment, material, and personnel are appropriately surveyed and released from the site. Verify the release criteria is appropriate as established by license condition or license tie down and background levels are appropriately documented for each survey. Verify the survey instruments used are appropriate for the contaminates of concern and have a minimum detection activity below the release level and are in calibration at the time of the survey.

Determine if personnel perform self-frisks that they have been appropriately trained to do so and that radiation protection staff periodically observe personnel frisking activities to verify personnel are frisking appropriately.

For release of materials and equipment for unrestricted use, verify that the survey meter used is appropriate for the contaminates of concern (capable of detecting the contaminates at concentrations below the release levels and appropriately calibration), the scan is conducted by a trained and qualified member of the radiation safety staff or designee, background is appropriately established and the documentation associated with the surveys is complete and accurate, as well as reviewed and signed by the RSO.

b. <u>Periodic Surveys</u>. Verify that the licensee has established schedules for periodic surveys of work areas of the plant and facility site. Verify that surveys are conducted using approved procedures and appropriate calibrated equipment. Review a selection of survey records to ensure surveys are being performed according to schedules and verify that the survey results are reviewed by appropriate supervision. For any identified issues, verify that corrective actions have been taken, as appropriate. Attempt to observe surveys in progress by licensee personnel. Determine the adequacy of the surveyor's knowledge in checking the survey instrument for proper operation with a dedicated check source and in the use of the instrument for conducting radiation surveys.

In accordance with 10 CFR 20.1501(a), licensees must include the subsurface in radiological surveys used to identify the extent of significant residual radioactivity on site. The licensee should periodically conduct surveys that are reasonable under the circumstances in accordance with 10 CFR 20.1501(a) to identify the horizontal and vertical extent of significant residual radioactivity throughout the site taking into consideration the temporal distribution of radioactive contaminants. Regulatory Guide 4.22, "Decommissioning Planning During Operations," provides guidance on implementation of the 2011 Decommissioning Planning Rule requirements.

Verify the schedule and procedural requirements for surveys appear adequate to demonstrate compliance with the following aspects of the regulations and with pertinent license requirements.

1. 10 CFR 20.1201, "Occupational Dose Limits for Adults." Determine whether due consideration is given to energy, alpha, beta and/or gamma exposure, and extremity exposure, and whether neutron surveys are performed if appropriate.

- 2. 10 CFR 20.1203, "Determination of External Dose from Airborne Radioactive Material," and §20.1204, "Determination of Internal Exposure." Determine whether both particulates, non-noble gases and vapors are considered, if appropriate.
- 3. 10 CFR 20.1902."Posting Requirements." Verify that postings are appropriate for the radiation hazards and levels encountered onsite.
- 4. 10 CFR 20.1301, "Dose limits for Individual Members of the Public." Verify the public dose calculations are performed and all assumptions if used are reasonable based on site activities and conditions.
- c. <u>Leak Tests</u>. Inspect a selection of leak tests records of radioactive sealed sources. Verify that sealed sources are tested as required in the Sealed Source and Device Registry (SSDR) certificate. For sealed sources that do not have a SSDR certificate, leak testing frequency will be as described in the license.

03.07 Notifications and Reports

- a. <u>To the NRC</u>. Determine if the licensee is reporting all the events and data required by the regulations and the license. Review those reports submitted since the last inspection to verify completeness of the report. A discussion with management, operating personnel, maintenance, and HP personnel, and review of RWPs, logbooks, and other data will help determine if unreported events have occurred.
- b. <u>To the Individual</u>. Determine by discussion with selected individuals whether they were notified in accordance with 10 CFR 19.13.

03.08 As Low As Reasonably Achievable (ALARA)

For fuel facilities, descriptions of ALARA programs are included in license applications. Fuel facility ALARA programs are audited periodically, and the results reported to the Radiation Safety Committee for action. For other materials licensees, the existence and scope of ALARA programs may vary.

The level of detail contained in ALARA programs will depend on the quantities of radioactive materials possessed and used, and whether the potential for radiation exposures can be significant. For example, licensees such as users of gas chromatographs may have no formal ALARA program because radiation exposures are very small. The following guidance should be used as applicable or at the inspector's discretion (compare to ALARA requirements outlined in Section 02.08).

- a. Facility personnel should be made aware of management's commitment to keep exposures to workers ALARA. The commitment should appear in policy statements, instructions to personnel, and similar documents. Examine a selection of policy standards and instructions (if they exist) and interview workers to determine if they understand the ALARA philosophy and what it means at the workplace.
- b. At a minimum, management should be able to discuss which operating procedures were reviewed, in which locations most exposures are being received, what groups of workers are receiving the highest exposures, what discussions they have had with the radiation protection staff or outside consultants, and what steps have been taken to reduce

exposures. Examine a sample of records and interview personnel to determine what has been done to reduce exposures.

- c. Determine if the licensee has a safety conscious work environment, where personnel feel free to raise ALARA concerns. As a minimum, workers should be familiar with the ALARA commitment so that they can explain what the commitment is, what ALARA means, why it is recommended, and how they have been advised to implement the program.
- d. Review audit records to determine if ALARA principles are adequately examined. If ALARA issues were identified, ensure that corrective actions were adequate.
- e. Radiation workers should understand how radiation protection relates to their job and should be retrained at least annually, or as otherwise stated in the license application. Training should be sufficient to ensure that workers can correctly answer questions on radiation protection as it relates to their jobs. Interview workers (consistent with the size of the program) to determine if the workers understand radiation protection as it relates to their jobs and if they have an opportunity to discuss radiation safety with the radiation protection staff.
- f. Inquire if modifications have been made to facilities and equipment to reduce exposures, prevent the spread of contamination, or eliminate/mitigate internal dose. Examine procedures or records that reflect modifications and attempt to determine the extent of the benefits gained through modifications (for example, modifications may have been beneficial if exposures of 50 mrem/hour were reduced to 10 mrem/hour. It may not be beneficial to reduce 1 mrem/hour to 0.1 mrem/hour, considering cost and risk. In both of the above examples, consideration must be given to costs of modification and risk to the population). Verify that ALARA measures do not disproportionately increase the risks from non-radiological hazards, such as industrial hazards.
- g. Examine Radiation Safety Committee records, RWPs, Job Hazard Assessments or other records for ALARA planning information to determine whether appropriate actions such as implementation of engineering controls or other preventive measures are being taken to reduce significant exposures to workers or limit/reduce/eliminate effluent releases for reduction of dose to the public.
- h. Examine equipment and supplies to determine if they adequately protect personnel from unnecessary radiation. Such equipment and supplies may include, but are not limited to, decontamination supplies, survey meters, protective clothing, ventilation systems, air sampling equipment, and supplies used for posting areas, such as radiation areas.

03.09 Minimization of Contamination

Regulatory guidance for the 2011 Decommissioning Planning Rule requirement to minimize the introduction of residual radioactivity into the site is provided in RG 4.22. Using the risk-informed approach described in RG 4.22, the inspector should verify the licensee has adopted facility designs and procedures which minimize contamination, taking into account radioactive material form (solid, liquid, or gas), activity in possession, chemical form, reactivity and paths to the environment, and contaminant mobility in the environment.

Review personnel contamination event records. If dose has been assigned to an individual as a result of a contamination event, review the process and assumptions used to determine and assign the dose.

83822-04 RESOURCE ESTIMATE

An inspection performed using this IP is estimated to require 4 to 60 hours of inspector resources. This estimate is only for the direct inspection effort and does not include preparation for and documentation of the inspection.

83822-05 PROCEDURE COMPLETION

This IP is considered complete when the inspector has sufficiently reviewed the licensee's performance as detailed in this IP and the objectives of this procedure have been met.

83822-06 REFERENCES

10 CFR Part 19, "Notices, Instructions, and Reports to Workers: Inspections and Investigations"

10 CFR Part 20, "Standards for Protection against Radiation"

IMC 2600, "Fuel Cycle Facility Operational Safety and Safeguards Inspection Program"

IMC 2602, "Fuel Cycle and Materials Decommissioning Inspection Program"

IMC 2800, "Materials Inspection Program"

IP 87137, "10 CFR Part 37 Materials Security Programs"

- RG 4.21, "Minimization of Contamination and Radioactive Waste Generation: Life-Cycle Planning"
- RG 4.22, "Decommissioning Planning During Operations"
- RG 8.10, "Operating Philosophy for Maintaining Occupational Radiation Exposures as Low as Is Reasonably Achievable." Revision 2. August 2016.
- RG 8.8, "Information Relevant to Ensuring the Occupational Radiation Exposures at Nuclear Power Stations will be As Low As Is Reasonably Achievable." Revision 3. June 1978.

END

ATTACHMENTS

Attachment 1: Revision History for IP 83822

Commitment Tracking Number	Accession Number Issue Date Change Notice	Description of Change	Description of Training Required and Completion Date	Comment Resolution and Closed Feedback Form Accession Number (Pre-Decisional, Non- Public Information)
n/a		Initial issuance	n/a	
	ML22010A147 12/15/22 CN 22-026	Updated to reflect a more risk-informed performance-based approach and to incorporate current health physics practices	TBD	ML22327A264 ML22327A275