

**Radiation Protection Program
for the Boiling Nuclear Superheater
Reactor Facility
Rincon, Puerto Rico**

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Appendix

Appendix A	Radiation Protection Requirements Matrix for the Boiling Nuclear Superheater Reactor Facility Radiation Protection Program
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Abbreviations

ALARA	As low as reasonably achievable
BONUS	Boiling Nuclear Superheater
CFR	<i>Code of Federal Regulations</i>
DOE	U.S. Department of Energy
mrem	millirem
PREPA	Puerto Rico Electric Power Authority
RPP	Radiation Protection Program
RPRM	Radiation Protection Requirements Matrix
SOP	Standard Operating Procedure

1.0 General Information

This Puerto Rico Electric Power Authority (PREPA) Boiling Nuclear Superheater (BONUS) Reactor Facility Radiation Protection Program (RPP) addresses all requirements of 10 *Code of Federal Regulations* (CFR) 835, “Occupational Radiation Protection.” The Radiation Protection Requirements Matrix (RPRM) of the RPP specifies the applicability of each 10 CFR 835 requirement to BONUS Reactor Facility activities and is included as Appendix A of this document. The RPP RPRM documents whether a 10 CFR 835 requirement is applicable or non-applicable and the reason why.

1.1 Purpose

PREPA has an agreement with U.S. Department of Energy (DOE) to manage activities involving residual radiation and radioactive material at the BONUS Reactor Facility. The primary activity at the BONUS Reactor Facility is the establishment and operation of a museum with controlled access as necessary for the protection of museum visitors. The purpose of the BONUS Reactor Facility RPP is to comply with the requirements of 10 CFR 835 that are applicable to the activities at the facility. The RPP has been designed with the objective of minimizing exposure of employees, the public, and the environment to ionizing radiation to levels as low as reasonably achievable (ALARA). The RPP incorporates an ALARA policy that will ensure achievement of this objective.

The RPP is a management tool that enhances PREPA ability to carry out tasks in a manner that will protect the environment, public, and employee health and safety. All personnel and contractors shall be required to follow the BONUS Reactor Facility RPP.

1.2 Scope

The RPP scope applies to BONUS Reactor Facility museum operations, facility maintenance activities, routine radiological control functions, and activities involving potential occupational radiation exposures. The RPP scope does not include further decommissioning activities or intrusive activities that increase or have the potential to result in an increase in radiological exposure hazard conditions.

The PREPA’s BONUS Reactor Facility RPP will remain in effect for the duration of radiological activities, even when operations are not conducted. Certain activities are constant, such as record maintenance, training needs, and program assessment. The PREPA’s BONUS Reactor Facility RPP is not turned off and on at will, but functions on a graded approach considering current activities and a minimum base.

1.3 As Low As Reasonably Achievable (ALARA)

1.3.1 ALARA Statement

PREPA management is firmly committed to having a radiological control program of the highest quality. This program applies to activities that manage radiation and radioactive materials that may result in radiation exposure to workers, the public, and the environment. The fundamental principle underlying the BONUS Reactor Facility RPP is the following statement from the

Radiation Protection Guidance to the Federal Agencies for Occupational Exposure (1987): “There should not be any occupational exposure of workers to ionizing radiation without the expectation of an overall benefit from the activity causing the exposure.”

1.3.2 ALARA Policy

PREPA policy is to conduct radiological operations in a manner that preserve the health and promote the safety of all its employees, contractors, and the public. In achieving this objective, PREPA management shall minimize the radiation exposure to employees and the public and the release of radioactivity to the environment. Deliberate efforts will be taken to further reduce exposures and releases in accordance with a process to make any such exposures or releases ALARA. The radiological control program consistently reflects this policy.

It is PREPA’s policy to use its best efforts to perform all activities and services in a radiologically safe manner which protects employees, the public, and environment, as well as meeting or exceeding the applicable requirements of 10 CFR 835. In addition, PREPA is committed to the philosophy of maintaining individual and collective exposure ALARA.

1.3.3 Training

Standards will be established to promote the technical competency of the workforce, as appropriate, through implementation of radiological training and development programs. An appropriate level of technical competence gained through education, experience, and job-related technical and professional training is a critical component for achieving radiological control policy goals. Qualification requirements commensurate with this objective are established for technical and professional radiological control program positions and are, at a minimum, consistent with applicable industry standards and promote professional development and excellence in radiological performance. Additionally all employees subject to occupational exposure receive general employee training for radiation safety.

1.3.4 Design

The BONUS Reactor Facility contains the decommissioned BONUS reactor and associated systems. Decommissioning from 1968 to 1970 included removal of reactor fuel, flushing of system piping, and concrete entombment of the pressure vessel and internal components within the biological shield. No additional facility design changes are anticipated that would result in significant changes to radiological exposure potentials. Because of this, the incorporation of dose reduction, contamination reduction, and waste minimization features into the design of a new facility to maintain radiation exposures ALARA is not applicable to the scope of the BONUS Reactor Facility RPP.

1.3.5 Procedures

The implementation of dose reduction, contamination reduction, and waste minimization measures during the course of radiological work is managed through plans and procedures. These plans and procedures are designed such that radiological measurements, analyses, and worker monitoring results are accurate and appropriately made. The capability to accurately measure and analyze radioactive materials and workplace conditions, and to determine the

potential for personnel radiation exposure, is fundamental to the safe conduct of radiological operations and maintenance of ALARA exposures.

1.3.6 Planning

Radiological operations and activities are preplanned to allow for dose control effectiveness and contamination reduction and control measures. Operations and activities are performed in accordance with a graded approach and shall include reasonable controls directed toward reducing exposure, preventing the spread of radiological contamination, and minimizing the generation of contaminated wastes and the release of effluents.

The incorporation of exposure reduction, contamination reduction, and waste minimization features into tasks are implemented in the earliest planning stages whenever applicable or feasible. Wherever possible, these features are directed toward controlling contamination at the source, eliminating airborne radioactivity, maintaining personnel exposure below regulatory limits, and using a process that achieve ALARA exposure levels. Radiological control criteria shall reflect appropriate consensus recommendations of national and international standards-setting groups.

1.3.7 Internal Audits

The responsibility for compliance with BONUS Reactor Facility radiological protection requirements and for maintaining ALARA personnel radiation exposure levels starts with the employee and broadens as it progresses through the organization hierarchy. PREPA is fully responsible for radiological performance within their projects and sites field activities. Managers take necessary actions to ensure ALARA requirements are implemented and performance is monitored and corrected as necessary.

1.3.8 Records

Documentation produced as a result of the BONUS Reactor Facility RPP implementation, and associated radiological policies, plans, and procedures, support the team's continued commitment to maintain exposures ALARA and is maintained by PREPA management. Implementation guidance will be provided by the ALARA and records management procedures.

1.4 Program Description

Following is the scope of operations of the BONUS Reactor Facility:

- Establish, operate, and maintain the BONUS reactor museum;
- Maintain controlled access to specific areas at the BONUS Reactor Facility, as necessary, to protect the health and safety of museum visitors; and
- Conduct radiological control and surveillance activities to ensure that the potential for exposure of workers and museum visitors to radiation and radioactive material is ALARA.

1.5 Facility Description

PREPA does not manage or operate any facilities with a radiological component other than the BONUS Reactor Facility. The proposed use of the BONUS Reactor Facility is a museum available to the public. The BONUS Reactor Facility site includes the domed reactor building containing the reactor and reactor systems and outside support facilities. The area outside the reactor building has a negligible potential for measurable radiation or radioactive material exposure to the general public. The reactor building has three general levels: basement, reactor floor or main level, and mezzanine. Residual radioactive contamination is present on all levels, removable and fixed. PREPA intent is to allow public access to the outer part of the ring on the reactor floor level and prohibit access to the basement and other areas. Radioactive contamination has been detected in the proposed public access area but it is fixed and not removable. Access to other parts of the reactor building interior is blocked by metal and Plexiglas walls and other physical barriers.

1.6 Included and Excluded Activities

Activities with the potential to result in occupational exposure to ionizing radiation are authorized under the provisions of this RPP. The following list delineates activities that are within the scope of the RPP:

- Preparing and operating the BONUS Reactor Facility museum;
- Managing access to BONUS Reactor Facility areas for the purpose of protecting workers and visitors from exposure to radiation and radioactive material;
- Conducting routine radiation exposure, contamination, and air-sampling surveys;
- Packaging, transporting, and shipping radiological samples;
- Routine housekeeping work;
- Routine decontamination of personnel, areas, equipment, and materials;
- Handling and disposing of waste material generated during BONUS Reactor Facility activities;
- Routine maintenance of the facility (e.g., heating, ventilation, and air conditioning and electrical systems); and
- Associated radiological activities that are not specifically excluded below.

The following activities are not authorized and are excluded from the provisions of this RPP:

- Entry into a high radiation or very high radiation areas.
- Breaching piping, tanks, or reactor systems containing radioactive contamination.
- Intrusive work in contamination and fixed-contamination areas (e.g., scabbling concrete).
- Work involving the design of new facilities affecting radiation exposure potentials.
- Planned special exposure work.
- Entry into radiological buffer areas and contamination areas by visitors and workers without the appropriate radiological worker training.

- Activities with the potential to cause a total effective dose equivalent in excess of 50 millirems per year (mrem/year) (highest dose allowed by regulation in any one year of occupational exposure) for the embryo/fetus of declared females, minors, and members of the public.
- Initiation of any task involving the potential for exposure to radiation or radioactive material not within the scope of an approved RPP.

1.7 Hazards Identification

The radiological hazard at the BONUS Reactor Facility are relatively low. The potential radiation exposure hazards are from direct radiation and contamination levels associated with residual radioactivity, primarily cesium-137, followed by lower levels of nickel-63, and trace amounts of cobalt-60 and strontium-90. Radiological surveys and assessment of existing hazards show that no worker or member of the public would be expected to receive a total effective dose equivalent in excess of 50 mrem/year within the scope of activities authorized by this RPP.

Primary radiological hazards characteristic of BONUS Reactor Facility activities involve potential external and internal exposure from residual radioactive surface contamination of floors, reactor systems, and equipment.

Potential pathways of concern include inhalation of suspended particulates and ingestion of particulates during work in contamination areas. Minimization of exposure through these pathways of concern is achieved by engineering and administrative controls and use of personal protective equipment.

2.0 RPP Implementation

The baseline that establishes compliance with 10 CFR 835 is this BONUS Reactor Facility RPP, dated January 2020. Implementation of this RPP will be accomplished by plans and procedures. When a plan provides detailed guidance on how to implement a requirement or perform a specific task, no implementing procedure is necessary. When a plan does not provide specific guidance, implementing standard operating procedures (SOPs) are proposed. For example, in case of a BONUS Reactor basement flood event, PREPA developed an SOP which include water sampling and detailed instructions for wastewater management.

SOPs are generated to implement the BONUS Reactor Facility RPP in response to current task needs. The BONUS Reactor Facility assumes that DOE recognizes that SOPs are dynamic documents and must be developed, revised, or deleted as project needs dictate. SOPs are not intended to reflect future implementation requirements. The BONUS Reactor Facility RPP and its implementing SOPs are subject to a document control program that provides reasonable assurance that commitments made by the BONUS Reactor Facility RPP and Implementation Plan are maintained in effect as long as the requirements on which they are based remain current and applicable.

3.0 Activities, Milestones, and Schedules

Implementation of the BONUS Reactor Facility RPP is accomplished through plans and SOPs which exist or are being developed to meet current and anticipated future task needs. PREPA will achieve compliance with 10 CFR 835 before the start of any radiological work. Applying the continuous improvement philosophy to day-to-day tasks allows for identifying ways to enhance the ability to carry out work at the BONUS Reactor Facility to protect the environment and human health and safety.

Appendix A

Radiation Protection Requirements Matrix for the Boiling Nuclear Superheater Reactor Facility Radiation Protection Program

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**BONUS Reactor Radiation Protection Program
(Reference 10 CFR 835)**

Requirement Statement	Description of Compliance Status
Section: 101(c).01 Applicable: Yes The content of each RPP <i>shall</i> be commensurate with the nature of the activities performed and shall include formal plans and measures for applying the ALARA process to occupational exposure.	The contents of the BONUS Reactor RPP is commensurate with the nature of the activities performed and will include formal plans and measures for applying the ALARA process to occupational exposure.
Section: 101(d).01 Applicable: Yes The RPP <i>shall</i> specify the existing or anticipated operational tasks that are intended to be within the scope of the RPP.	The BONUS Reactor RPP will specify the existing or anticipated operational tasks that are intended to be within the scope of the BONUS Reactor RPP.
Section: 101(d).02 Applicable: Yes Except as provided in §835.101(i), any task outside the scope of an RPP <i>shall</i> not be initiated until an update of the RPP is approved by DOE.	Tasks outside the scope of the BONUS Reactor RPP will not be initiated at the BONUS Reactor until an update of the RPP is approved by DOE.
Section: 101(e) Applicable: Yes The content of the RPP <i>shall</i> address, but <i>shall</i> not necessarily be limited to, each requirement in this part.	The content of the BONUS Reactor RPP will address, but will not necessarily be limited to, each requirement in 10 CFR 835.
Section: 101(f).01 Applicable: Yes The RPP <i>shall</i> include plans, schedules, and other measures for achieving compliance with regulations of this part.	The BONUS Reactor RPP will include plans, schedules, and other measures for achieving compliance with regulations of 10 CFR 835.
Section: 101(f).02 Applicable: No Unless otherwise specified in this part, compliance with the amendments to this part published on June 8, 2007, shall be achieved no later than July 9, 2010.	Compliance with 10 CFR 835 will be achieved before any radiological operations occur.
Section: 101(g) Applicable: Yes An update of the RPP shall be submitted to DOE.	PREPA will submit the BONUS Reactor RPP to DOE before any radiological operations occur.
Section: 101(g)(1) Applicable: Yes An update of the BONUS Reactor RPP will be submitted to DOE whenever a change or an addition to the RPP is made.	An update of the BONUS Reactor RPP will be submitted to DOE whenever a change or an addition to the BONUS Reactor RPP is made.
Section: 101(g)(2) Applicable: Yes Prior to the initiation of a task not within the scope of the RPP.	An update of the BONUS Reactor RPP will be submitted to DOE prior to the initiation of a task not within the scope of the BONUS Reactor RPP.
Section: 101(g)(3) Applicable: Yes Within 180 days of the effective date of any modifications to this part.	An update of the BONUS Reactor RPP will be submitted to DOE within 180 days of the effective date of any modification to 10 CFR 835.

**BONUS Reactor Radiation Protection Program
(Reference 10 CFR 835)**

Requirement Statement	Description of Compliance Status
Section: 204(a)(1) Applicable: No A planned special exposure <i>may</i> be authorized for a radiological worker to receive doses in addition to and accounted for separately from the doses received under the limits specified in §835.202(a), provided that the following condition is satisfied: the planned special exposure is considered only in an exceptional situation when alternatives that might prevent a radiological worker from exceeding the limit in §835.202(a)(1) are unavailable or impractical;	The BONUS reactor will not have planned special exposure.
Section: 204(a)(2) Applicable: No A planned special exposure <i>may</i> be authorized for a radiological worker to receive doses in addition to and accounted for separately from the doses received under the limits specified in §835.202(a), provided that the following condition is satisfied: the contractor management (and employer, if the employer is not the contractor) specifically requests the planned special exposure, in writing.	The BONUS reactor will not have planned special exposure.
Section: 204(a)(3) Applicable: No A planned special exposure <i>may</i> be authorized for a radiological worker to receive doses in addition to and accounted for separately from the doses received under the limits specified in §835.202(a), provided that the following condition is satisfied: Joint written approval from the appropriate DOE Headquarters program officer responsible for environment safety, and health matters.	The BONUS reactor will not have planned special exposure.
Section: 204(b) Applicable: No Prior to requesting an individual to participate in an authorized planned special exposure, the individual's dose from all previous planned special exposures and all doses in excess of the occupational dose limits <i>shall</i> be determined.	The BONUS reactor will not have planned special exposure.
Section: 204(c)(1) Applicable: No An individual <i>shall</i> not receive a planned special exposure that, in addition to the doses determined in §835.204(b), would result in a dose exceeding the following: in a year, the numerical values of the dose limits established in 835.202(a).	The BONUS reactor will not have planned special exposure.
Section: 204(c){2} Applicable: No An individual <i>shall</i> not receive a planned special exposure that, in addition to the doses determined in §835.204(b), would result in a dose exceeding the following: over the individual's lifetime, 5 times the numerical values of the dose limits established at 835.835.202(a).	The BONUS reactor will not have planned special exposure.

BONUS Reactor Radiation Protection Program (Reference 10 CFR 835)

Requirement Statement	Description of Compliance Status
Section: 208 Applicable: Yes The total effective dose limit for members of the public exposed to radiation and/or radioactive material during access to a controlled area is 0.1 rem (0.001 sievert) in a year.	The total effective dose limit for members of the public exposed to radiation and/or radioactive material during access at the BONUS reactor will not exceed 0.1 rem (0.001 sievert) total effective dose equivalent in a year.
Section: 209(a) Applicable: Yes The DAC values given in Appendixes A and C to this part <i>shall</i> be used in the control of occupational exposures to airborne radioactive material.	The DAC values given in Appendixes A and C to 10 CFR 835 will be used in the control of occupational exposures to airborne radioactive material.
Section: 209(b) Applicable: Yes The estimation of internal dose <i>shall</i> be based on bioassay data rather than air concentration values unless bioassay data are: (1) Unavailable; (2) Inadequate; or (3) Internal dose estimates based on air concentration values are demonstrated to be as or more accurate.	The estimation of internal dose will be based on bioassay data rather than air concentration values unless bioassay data are: (1) Unavailable; (2) Inadequate; or (3) Internal dose estimates based on air concentration values are demonstrated to be as or more accurate.
Section: 401(a){1} Applicable: Yes Monitoring of individuals and areas <i>shall</i> be performed to demonstrate compliance with the regulations in this part.	Monitoring of individuals and areas will be performed to demonstrate compliance with the regulations in 10 CFR 835.
Section: 401(a)(2) Applicable: Yes Document radiological conditions.	Monitoring of individuals and areas will be performed to document radiological conditions in the workplace.
Section: 401(a)(3) Applicable: Yes Detect changes in radiological conditions.	Monitoring of individuals will be performed to detect changes in radiological conditions.
Section: 401(a)(4) Applicable: Yes Detect the gradual buildup of radioactive material.	Monitoring of individuals and areas will be performed to detect the gradual buildup of radioactive material in the workplace.
Section: 401(a)(5) Applicable: Yes Verify the effectiveness of engineered and administrative controls in containing radioactive material and reducing radiation exposure.	Monitoring of individuals and areas will be performed to verify the effectiveness of engineering and process controls in containing radioactive material and reducing radiation exposure.
Section: 401(a)(6) Applicable: Yes Identify and control potential sources of personnel exposure to radiation and/or radioactive material.	Monitoring of individuals and areas will be performed to identify and control potential sources of individual exposure to radiation and/or radioactive material.

BONUS Reactor Radiation Protection Program
(Reference 10 CFR 835)

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RPP for the Boiling Nuclear Superheater Reactor Facility, Puerto Rico

Requirement Statement		Description of Compliance Status
Section: 401(b){1}	Applicable: Yes Instruments and equipment used for monitoring shall be periodically maintained and calibrated on an established frequency.	Instruments and equipment used for monitoring will be periodically maintained and calibrated on an established frequency of at least once per year.
Section: 401(b)(2)	Applicable: Yes Instruments and equipment used for monitoring shall be appropriate for the types, levels, and energies of the radiations encountered.	Instruments and equipment used for monitoring will be appropriate for the types, levels, and energies of the radiations encountered.
Section: 401(b){3}	Applicable: Yes Instruments and equipment used for monitoring shall be appropriate for existing environmental conditions.	Instruments and equipment used for monitoring will be appropriate for existing environmental conditions.
Section: 401(b)(4)	Applicable: Yes Instruments and equipment used for monitoring shall be routinely tested for operability.	Instruments and equipment used for monitoring will be routinely tested for operability.
Section: 402(a)(1)(i)	Applicable: Yes For the purpose of monitoring individual exposures to external radiation, personnel dosimetry shall be provided to and used by radiological workers who, under typical conditions, are likely to receive an effective dose to the whole body of 0.1 rem (0.001 sievert) or more in one year.	For the purpose of monitoring individual exposures to external radiation, personnel dosimetry will be provided to and used by radiological workers who, under typical conditions, are likely to receive an effective dose to the whole body of 0.1 rem (0.001 sievert) or more in one year.
Section: 402(a)(1)(ii)	Applicable: Yes For the purpose of monitoring individual exposures to external radiation, personnel dosimetry shall be provided to and used by radiological workers who, under typical conditions, are likely to receive an equivalent dose to the skin or to any extremity of 5 rems (0.05 sievert) or more in a year.	For the purpose of monitoring individual exposures to external radiation, personnel dosimetry will be provided to and used by radiological workers who, under typical conditions, are likely to receive an equivalent dose to the skin or to any extremity of 5 rems (0.05 sievert) or more in a year.
Section: 402(a)(1)(iii)	Applicable: Yes For the purpose of monitoring individual exposures to external radiation, personnel dosimetry will be provided to and used by radiological workers who, under typical conditions, receive a lens of the eye equivalent dose of 1.5 rems (0.015 sievert) or more in a year.	For the purpose of monitoring individual exposures to external radiation, personnel dosimetry will be provided to and used by radiological workers who, under typical conditions, are likely to receive a lens of the eye equivalent dose of 1.5 rems (0.015 sievert) or more in a year.
Section: 402(a)(2)	Applicable: Yes For the purpose of monitoring individual exposures to external radiation, personnel dosimetry <i>shall</i> be provided to and used by declared pregnant workers who are likely to receive from external sources an equivalent dose to the embryo/fetus in excess of 10% of the applicable limit in §835.206.	For the purpose of monitoring individual exposures to external radiation, personnel dosimetry will be provided to and used by declared pregnant workers who are likely to receive from external sources an equivalent dose to the embryo/fetus in excess of 10% of the applicable limit in §835.206.

**BONUS Reactor Radiation Protection Program
(Reference 10 CFR 835)**

Requirement Statement	Description of Compliance Status
Section: 402(a)(3) Applicable: Yes For the purpose of monitoring individual exposures to external radiation, personnel dosimetry <i>shall</i> be provided to and used by occupationally exposed minors likely to receive a dose in excess of 50% of the applicable limits in §835.207 in a year from external sources.	For the purpose of monitoring individual exposures to external radiation, personnel dosimetry will be provided to and used by minors and members of the public likely to receive, in 1 year, from external sources, a dose in excess of 50% of the applicable limits in §835.207 or §835.208, respectively.
Section: 402(a)(4) Applicable: No For the purpose of monitoring individual exposures to external radiation, personnel dosimetry <i>shall</i> be provided to and used by Members of the public entering a controlled area likely to receive a dose in excess of 50 percent of the limit at 835.208 in a year from external sources; and individuals entering high or very high radiation area.	There are no high or very high radiation areas at the BONUS reactor.
Section: 402(a)(5) Applicable: No For the purpose of monitoring individual exposures to external radiation, personnel dosimetry <i>shall</i> be provided to and used by individuals entering a high or very high radiation area.	There are no high or very high radiation areas at the BONUS reactor.
Section: 402(b) Applicable: Yes External dose monitoring programs implemented to demonstrate compliance with 835.402(a) shall be adequate to demonstrate compliance with the dose limits established in Subpart C of this part.	External dose monitoring programs implemented to demonstrate compliance with 835.402(a) will be adequate to demonstrate compliance with the dose limits established in Subpart C of this part.
Section: 402(b)(1) Applicable: Yes Accredited, or exempted from accreditation, in accordance with PREPA.	Accredited, or exempted from accreditation, in accordance with PREPA.
Section: 402(b)(2) Applicable: Yes Determined by the PREPA Officer responsible for environment, safety, and health matters to have performance substantially equivalent to that of programs accredited.	Determined by the PREPA Officer responsible for environment, safety, and health matters to have performance substantially equivalent to that of programs accredited.
Section: 402(c)(1) Applicable: Yes For the purpose of monitoring individual exposures to internal radiation, internal dose evaluation programs (including routine bioassay programs) <i>shall</i> be conducted for radiological workers who, under typical conditions, are likely to receive a committed effective dose of 0.1 rem (0.001 sievert) or more from all occupational radionuclide intakes in a year.	For the purpose of monitoring individual exposures to internal radiation, internal dose evaluation programs (including routine bioassay programs) will be conducted for radiological workers who, under typical conditions, are likely to receive a committed effective dose of 0.1 rem (0.001 sievert) or more from all occupational radionuclide intakes in a year.

**BONUS Reactor Radiation Protection Program
(Reference 10 CFR 835)**

Requirement Statement	Description of Compliance Status
Section: 403(a)(2) Applicable: Yes Monitoring of airborne radioactivity shall be performed as necessary to characterize the airborne radioactivity hazard where respiratory protective devices for protection against airborne radionuclides have been prescribed.	Monitoring of airborne radioactivity shall be performed as necessary to characterize the airborne radioactivity hazard where respiratory protective devices for protection against airborne radionuclides have been prescribed.
Section: 403(b) Applicable: Yes Real-time air monitoring shall be performed as necessary to detect and provide warning of airborne radioactivity concentrations that warrant immediate action to terminate inhalation of airborne radioactive material.	Real-time air monitoring shall be performed as necessary to detect and provide warning of airborne radioactivity concentrations that warrant immediate action to terminate inhalation of airborne radioactive material.
Section: 405(a)(1) Applicable: Yes If packages containing quantities of radioactive material in excess of a Type A quantity (as defined at 10 CFR 71.4) are expected to be received from radioactive material transportation, arrangements shall be made to take possession of the package when the carrier offers it for delivery.	If packages containing quantities of radioactive material in excess of a Type A quantity (as defined at 10 CFR 71.4) are expected to be received by BONUS personnel from radioactive material transportation, arrangements will be made to take possession of the package when the carrier offers it for delivery.
Section: 405(a)(2) Applicable: Yes If packages containing quantities of radioactive material in excess of a Type A quantity (as defined at 10 CFR 71.4) are expected to be received from radioactive material transportation, arrangements shall be made to receive notification as soon as practicable after arrival of the package at the carrier's terminal and to take possession of the package expeditiously after receiving such notification.	BONUS reactor personnel will receive notification as soon as practicable after arrival of the package at the carrier's terminal and to take possession of the package expeditiously after receiving such notification.
Section: 405(b)(1) Applicable: Yes Upon receipt from radioactive material transportation, external surfaces of packages known to contain radioactive material shall be monitored if the package is labeled with a Radioactive White I, Yellow II, or Yellow III label (as specified at 49 CFR 172.403 and 172.436-44D.	Upon receipt from radioactive material transportation by BONUS reactor personnel, external surfaces of packages known to contain radioactive material shall be monitored if the package is labeled with a Radioactive White I, Yellow II, or Yellow III label (as specified at 49 CFR 172.403 and 172.436-44D.
Section: 405(b)(2) Applicable: Yes Upon receipt from radioactive material transportation, external surfaces of packages that have been transported as low specific activity material (as defined at 10 CFR 71.4) on an exclusive use vehicle (as defined at 10 CFR 71.4) shall be monitored if the package is labeled with a Radioactive White I, Yellow II, or Yellow III label (as specified at 49 CFR 172.403 and 172.436-44D.	Has been transported as low specific activity material (as defined at 10 CFR 71.4) on an exclusive use vehicle (as defined at 10 CFR 71.4).

BONUS Reactor Radiation Protection Program (Reference 10 CFR 835)

Requirement Statement	Description of Compliance Status
<p>Section: 502(b) Applicable: No</p> <p>One or more of the following physical control features shall be used for each entrance or access point to a high radiation area where radiation levels exist such that an individual could exceed an equivalent dose to the whole body of 1 rem (0.01 sievert) in any 1 hour at 30 centimeters from the source or from any surface that the radiation penetrates:</p> <ol style="list-style-type: none"> (1) A control device that prevents entry to the area when high radiation levels exist or upon entry causes the radiation level to be reduced below that level defining a high radiation area (2) A device that functions automatically to prevent use or operation of the radiation source or field while individuals are in the area (3) A control device that energizes a conspicuous visible or audible alarm signal so that the individual entering the high radiation area and the supervisor of the activity are made aware of the entry (4) Entryways that are locked; during periods when access to the area is required, positive control over each entry is maintained (5) Continuous direct or electronic surveillance that is capable of preventing unauthorized entry (6) A control device that will automatically generate audible and visual alarm signals to alert personnel in the area before use or operation of the radiation source and in sufficient time to permit evacuation of the area or activation of a secondary control device that will prevent use or operation of the source 	<p>There are no high radiation areas at the BONUS reactor.</p>
<p>Section: 502(c) Applicable: No</p> <p>In addition to the above requirements, additional measures shall be implemented to ensure individuals are not able to gain unauthorized or inadvertent access to very high radiation areas.</p>	<p>There are no high or very high radiation areas at the BONUS reactor.</p>
<p>Section: 502(d) Applicable: No</p> <p>No controls shall be established in a high or very high radiation area that would prevent rapid evacuation of personnel.</p>	<p>There are no high or very high radiation areas at the BONUS reactor.</p>
<p>Section: 601(a) Applicable: Yes</p> <p>Except as otherwise provided in this subpart, postings and labels required by this subpart shall include the standard radiation warning trefoil in black or magenta imposed upon a yellow background.</p>	<p>Radioactive items or containers of radioactive materials will be individually labeled if adequate warning is not provided by control measures and required posting.</p>

**BONUS Reactor Radiation Protection Program
(Reference 10 CFR 835)**

Requirement Statement	Description of Compliance Status
Section: 604(c) Applicable: Yes Areas containing only packages received from radioactive material transportation labeled and in non-degraded condition need not be posted in accordance with 835.603 until the packages are monitored in accordance with 835.405.	BONUS reactor areas containing only packages received from radioactive material transportation labeled and in non-degraded condition need not be posted in accordance with 835.603 until the packages are monitored in accordance with 835.405.
Section: 605 Applicable: No Except as provided at 835.606, each item or container of radioactive material shall bear a durable, clearly visible label bearing the standard radiation warning trefoil and the words “Caution, Radioactive Material” or “Danger, Radioactive Material.” The label shall also provide sufficient information to permit individuals handling, using, or working in the vicinity of the items or containers to take precautions to avoid or control exposures.	Except as provided at 835.606, each BONUS reactor item or container of radioactive material will bear a durable, clearly visible label bearing the standard radiation warning trefoil and the words “Caution, Radioactive Material” or “Danger, Radioactive Material.” The label will also provide sufficient information to permit individuals handling, using, or working in the vicinity of the items or containers to take precautions to avoid or control exposures.
Section: 606(a) Applicable: Yes Items and containers may be excepted from the radioactive material labeling requirements of 835.605 when: <ul style="list-style-type: none"> (1) Used, handled, or stored in areas posted and controlled in accordance with this subpart and sufficient information is provided to permit individuals to take precautions to avoid or control exposures; or (2) The quantity of radioactive material is less than one tenth of the values specified in Appendix E of this part and less than 0.1 Ci; or (3) Packaged, labeled, and marked in accordance with the regulations of the U.S. Department of Transportation or DOE Orders governing radioactive material transportation; or (4) Inaccessible, or accessible only to individuals authorized to handle or use them, or to work in the vicinity; or (5) Installed in manufacturing, process, or other equipment, such as reactor components, piping, and tanks; or (6) The radioactive material consists solely of nuclear weapons or their components. 	BONUS reactor items and containers may be excepted from the radioactive material labeling requirements of 835.605 when: <ul style="list-style-type: none"> (1) Used, handled, or stored in areas posted and controlled in accordance with this subpart and sufficient information is provided to permit individuals to take precautions to avoid or control exposures; or (2) The quantity of radioactive material is less than one tenth of the values specified in Appendix E of this part and less than 0.1 Ci; or (3) Packaged, labeled, and marked in accordance with the regulations of the U.S. Department of Transportation or DOE Orders governing radioactive material transportation; or (4) Inaccessible, or accessible only to individuals authorized to handle or use them, or to work in the vicinity; or (5) Installed in manufacturing, process, or other equipment, such as reactor components, piping, and tanks; or (6) The radioactive material consists solely of nuclear weapons or their components.
Section: 606(b) Applicable: Yes Radioactive material labels applied to sealed radioactive sources may be exempted from the color specifications of 835.601(a).	Radioactive material labels applied to BONUS reactor sealed radioactive sources may be exempted from the color specifications of 835.601(a).

BONUS Reactor Radiation Protection Program
(Reference 10 CFR 835)

Requirement Statement	Description of Compliance Status
Section: 801(e).02 Applicable: Yes Radiation exposure data report <i>shall</i> be transmitted at a time not later than the transmittal to PREPA.	Radiation exposure data report will be transmitted at a time not later than the transmittal to PREPA.
Section: 901(a).01 Applicable: Yes Each individual <i>shall</i> complete radiation safety training on the topics established at 835.901(c) commensurate with the hazards in the area and the required controls before being permitted unescorted access to controlled areas.	Each individual will complete radiation safety training on the topics established at 835.901(c) commensurate with the hazards in the area and the required controls before being permitted unescorted access to controlled areas and before receiving occupational dose prior to receiving occupational exposure during access to controlled areas at the BONUS reactor.
Section: 901(a).02 Applicable: Yes Each individual <i>shall</i> complete radiation safety training on the topics established at 835.901(c) before receiving occupational dose during access to controlled areas at a site or facility.	Allowance may be made for previous PREPA training on generic radiation safety topics (i.e., those not specific to a site or facility), provided the training was received at another site or facility within the past 2 years (for general employees).
Section: 901(b) Applicable: Yes Each individual <i>shall</i> demonstrate knowledge of the radiation safety training topics established at 835.901(c), commensurate with the hazards in the area and required controls, by successful completion of an examination and performance demonstrations.	The knowledge of radiation safety possessed by general employees will be verified by examination.
Section: 901(b).01 Applicable: Yes Each individual <i>shall</i> demonstrate knowledge of the radiation safety training topics established at 835.901(c) before being permitted unescorted access to radiological areas.	Retraining will be provided when there is a significant change to radiation protection policies and procedures that affect general employees and will be conducted at intervals not to exceed 2 years.
Section: 901(b).02 Applicable: Yes Each individual <i>shall</i> demonstrate knowledge of the radiation safety training topics established at 835.901(c) before performing unescorted assignments as a radiological worker.	Retraining will be provided when there is a significant change to radiation protection policies and procedures that affect general employees and will be conducted at intervals not to exceed 2 years.

BONUS Reactor Radiation Protection Program (Reference 10 CFR 835)

Requirement Statement	Description of Compliance Status
<p>Section: 901(c) Applicable: Yes</p> <p>Radiation safety training <i>shall</i> include the following topics, to the extent appropriate to each individual's prior training, work assignments, and degree of exposure to radiological hazards:</p> <ol style="list-style-type: none"> (1) Risks of exposure to radiation and radioactive materials, including prenatal radiation exposure; (2) Basic radiological fundamentals and radiation protection concepts; (3) Physical design features, administrative controls, limits, policies, procedures, alarms, and other measures implemented at the facility to manage doses and maintain doses ALARA, including both routine and emergency actions; (4) Individual rights and responsibilities as related to implementation of the facility RPP; (5) Individual responsibilities for implementing ALARA measures required by 835.101; and (6) Individual exposure reports that may be requested in accordance with 835.101. 	<p>Radiological worker training programs and retraining will be established and conducted at intervals not to exceed 2 years to familiarize the worker with the fundamentals of radiation protection and the ALARA process.</p>
<p>Section: 901(d) Applicable: Yes</p> <p>When an escort is used in lieu of training in accordance with paragraph (a) or (b) of this section, the escort <i>shall</i>:</p> <ol style="list-style-type: none"> (1) Have completed radiation safety training, examinations, and performance demonstrations required for entry to the area and performance of the work; and (2) Ensure that all escorted individuals comply with the documented RPP. 	<p>Radiological worker training will include both classroom and applied training.</p>
<p>Section: 901(e) Applicable: Yes</p> <p>Radiation safety training <i>shall</i> be provided to individuals when there is a significant change to the radiation protection policies and procedures that may affect the individual and at intervals not to exceed 24 months. Such training provided for individuals subject to the requirements of 835.901(b)(1) and (b)(2) shall include successful completion of an examination.</p>	<p>Radiological worker training will either precede assignment as a radiological worker or be concurrent with assignment as a radiological worker if the worker is accompanied by and under the direct supervision of a trained radiological worker.</p>

BONUS Reactor Radiation Protection Program
(Reference 10 CFR 835)

Requirement Statement	Description of Compliance Status
Section: 1001(a)01 Applicable: Yes Measures <i>shall</i> be taken to maintain radiation exposure in controlled areas ALARA through engineered and administrative controls.	Measures will be taken to maintain radiation exposure in controlled areas ALARA through engineered and administrative controls.
Section: 1001(a).02 Applicable: Yes Measures <i>shall</i> be taken to maintain radiation exposure in controlled areas ALARA through engineered and administrative controls. The primary methods used will be physical design features (e.g., confinement, ventilation, remote handling, and shielding).	Measures will be taken to maintain radiation exposure in controlled areas ALARA through facility and equipment design and administrative control. The primary methods used will be physical design features (e.g., confinement, ventilation, remote handling, and shielding).
Section: 1001(a).03 Applicable: Yes Measures <i>shall</i> be taken to maintain radiation exposure in controlled areas ALARA through facility and equipment design and administrative control. Administrative controls <i>shall</i> be employed only as supplemental methods to control radiation exposures.	Measures will be taken to maintain radiation exposure in controlled areas ALARA through facility and equipment design and administrative control. Administrative controls and procedural requirements will be employed only as supplemental methods to control radiation.
Section: 1001(b) Applicable: Yes For specific activities where use of engineered controls is demonstrated to be impractical, administrative controls <i>shall</i> be used to maintain radiation exposures ALARA.	For specific activities where use of engineered controls is demonstrated to be impractical, administrative controls and procedural requirements will be used to maintain radiation exposures ALARA.
Section: 1002(a) Applicable: Yes During the design of new facilities or modification of existing facilities, the following objectives <i>shall</i> be adopted: Optimization methods <i>shall</i> be used to assure that occupational exposure is maintained ALARA in developing and justifying facility design and physical controls.	During modifications of the BONUS reactor, optimization methods will be used to assure that occupational exposure is maintained ALARA in developing and justifying facility design and physical controls. PREPA is not involved in the design or construction of new DOE facilities.
Section: 1002(b) Applicable: Yes The design objective for controlling personnel exposure from external sources of radiation in areas of continuous occupational occupancy (2000 hours per year) <i>shall</i> be to maintain exposure levels below an average of 0.5 millirem (5 microsieverts) per hour as far as below this average as is reasonably achievable. The design objectives for exposure rates for potential exposure to a radiological worker where occupancy differs from the above shall be ALARA and shall not exceed 20% of the applicable standards in 835.202.	During modifications of the BONUS reactor, the design objective for controlling personnel exposure from external sources of radiation in areas of continuous occupational occupancy (2000 hours per year) will be to maintain exposure levels below an average of 0.5 mrem (5 microsieverts) per hour and as far below this average as is reasonably achievable. PREPA is not involved in the design or construction of new reactor facilities.
Section: 1002(c) Applicable: No Regarding the control of airborne radioactive material, the design objective <i>shall</i> be, under normal conditions, to avoid releases to the workplace atmosphere and in any situation to control the inhalation of such material by workers to levels that are ALARA. Confinement and ventilation shall be normally used.	Regarding the control of airborne radioactive material, the design objective will be, under normal conditions, to avoid releases to the workplace atmosphere and in any situation to control the inhalation of such material by workers to levels that are ALARA. Confinement and ventilation shall be normally used.

BONUS Reactor Radiation Protection Program
(Reference 10 CFR 835)

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RPP for the Boiling Nuclear Superheater Reactor Facility, Puerto Rico

Requirement Statement	Description of Compliance Status
Section: 1101(c)(2) Applicable: Yes The material or equipment is routinely monitored and clearly marked or labeled to alert personnel of the contaminated status.	The material or equipment will be routinely monitored and clearly marked or labeled to alert personnel of the contaminated status.
Section: 1102(a) Applicable: Yes Appropriate controls shall be maintained and verified which prevent the inadvertent transfer of removable contamination to locations outside of radiological areas under normal operating conditions.	Appropriate controls will be maintained and verified which prevent the inadvertent transfer of removable contamination to locations outside of radiological areas under normal operating conditions.
Section: 1102(b) Applicable: Yes Any area in which contamination levels exceed the values specified in Appendix D of this part <i>shall</i> be controlled in a manner commensurate with the physical and chemical characteristics of the contaminant, the radionuclide present, and the fixed and removable surface contamination levels.	Any area in which contamination levels exceed the values specified in Appendix D of this part will be controlled in a manner commensurate with the physical and chemical characteristics of the contaminant, the radionuclide present, and the fixed and removable surface contamination levels.
Section: 1102(c) Applicable: Yes Areas accessible to individuals where the measured total surface contamination levels exceed, but the removable surface contamination levels are less than, corresponding surface contamination values specified in Appendix D of this part, <i>shall</i> be controlled as follows when located outside of radiological areas: (1) The area <i>shall</i> be routinely monitored to ensure the removable surface contamination level remains below the removable surface contamination values specified in Appendix D of this part; and (2) The area <i>shall</i> be conspicuously marked to warn individuals of the contaminated status.	Areas accessible to individuals at the BONUS reactor where the measured total surface contamination levels exceed, but the removable surface contamination levels are less than, corresponding surface contamination values specified in Appendix D of this part, will be controlled as follows when located outside of radiological areas: (1) The area will be routinely monitored to ensure the removable surface contamination level remains below the removable surface contamination values specified in Appendix D of this part; and (2) The area will be conspicuously marked to warn individuals of the contaminated status.
Section: 1102(d) Applicable: No Individuals exiting contamination, high contamination, or airborne radioactivity areas <i>shall</i> be monitored, as appropriate, for the presence of surface contamination.	There are no areas at the BONUS reactor where removable contamination exists at levels exceeding the removable surface contamination values specified in Appendix D. There is no contamination or airborne radioactivity areas currently posted at the BONUS reactor.
Section: 1102(e) Applicable: Yes Protective clothing <i>shall</i> be required for entry to areas in which removable contamination exists at levels exceeding the removable surface contamination values specified in Appendix D of this part.	Protective clothing will be required for entry to areas in which removable contamination exists at levels exceeding the removable surface contamination values specified in Appendix D of this part.
Section: 1201 Applicable: Yes Sealed radioactive sources <i>shall</i> be used, handled, and stored in a manner commensurate with the hazards associated with operations involving the sources.	Sealed radioactive sources currently in use at the BONUS reactor site will be used, handled, and stored in a manner commensurate with the hazards associated with operations involving the sources.

BONUS Reactor Radiation Protection Program (Reference 10 CFR 835)

Requirement Statement	Description of Compliance Status
Section: 1302(d) Applicable: No Each individual authorized to perform emergency actions likely to result in occupational doses exceeding the values of the limits provided at 835.202(a) <i>shall</i> be trained in accordance with §835.901 and briefed beforehand of the known or anticipated hazards to which the individual will be subjected.	There are no credible scenarios at the BONUS reactor in which personnel could receive a dose during accidents or emergency conditions.
Section: 1304(a) Applicable: No Installations possessing sufficient quantities of fissile material to potentially constitute a critical mass, such that the excessive exposure of individuals to radiation from a nuclear accident is possible, <i>shall</i> provide nuclear accident dosimetry for those individuals.	There are no credible scenarios at the BONUS reactor in which personnel could receive a dose during accidents or emergency conditions.
Section: 1304(b)(1) Applicable: No Nuclear accident dosimetry <i>shall</i> include a method by which to conduct initial screening of personnel involved in a nuclear accident to determine whether significant exposures to radiation occurred.	The BONUS reactor has no fissile material.
Section: 1304(b)(2) Applicable: No Methods and equipment for analysis of biological materials.	The BONUS reactor has no fissile material.
Section: 1304(b)(3) Applicable: No A system of fixed nuclear accident dosimeter units.	The BONUS reactor has no fissile material.
Section: 1304(b)(4) Applicable: No Personal nuclear accident dosimeters.	The BONUS reactor has no fissile material.

Abbreviations:

cm² = square centimeters
 SI = International System of Units

PREPA BONUS Reactor Radiation Protection Program Matrix

Requirement Number	Applicable	Document Evidence
1AA.4.01	No	
1AA.4.02	No	
1AD.1	Yes	RCM, Table 2-2, Note 1
1AD.3.01	Yes	RCM, Table 2-2, Note 3
1AD.3.02	Yes	RCM, Table 2-2, Note 3
1AD.4.01	Yes	RCM, Table 2-2, Note 2
1AD.4.02	Yes	RCM, Table 2-2, Note 2
3(a)	Yes	RPP Section 5
3(b)	Yes	RPP Section 1
3(c)	No	N/A
3(d)	Yes	RPP Section 5
4	Yes	RCM, Article 713
101(a)	Yes	RCM Article 112; RPP Section 1
101(b)	Yes	RCM Section 112; RPP Section 5
101(c).01	Yes	RCM Articles 138, 311, 312, 316; RPP Sections 1.1, 1.2, 1.3, 1.4, 6.2
101(d).01	Yes	RPP Sections 1.1, 1.2
101(d).02	Yes	RPP Sections 1.1, 1.2
101(e)	Yes	RPP, Section 7; addressed throughout RCM
101(f).01	Yes	RPP Section 4
101(f).02	Yes	10 CFR 835
101(g)(1), (2), (3)	Yes	RPP Section 5
101(h){1}	Yes	RPP Section 5
101(h)(2)	Yes	RPP Section 5
101(h)(3)	Yes	RPP Section 5
101(i)	Yes	RPP Section 5
102.01	Yes	RPP Section 6.1.4; RCM Article 134
102.02	Yes	RPP Section 6.1.4; RCM Article 134
103	Yes	RPP 6.1.3; RCM Chapter 1 Part 4 and Article 551
104	Yes	RPP 6.1.3; RCM Article 341
202(a)(1)	No	Planned special exposures / emergency exposures not in scope
202(a)(2)	No	Planned special exposures / emergency exposures not in scope
202(a)(3)	No	Planned special exposures / emergency exposures not in scope
202(a)(4)	No	Planned special exposures / emergency exposures not in scope
202(b)	Yes	Planned special exposures / emergency exposures not in scope
202(c)	Yes	RPP Section 6.3; Article 213
203(a)	Yes	RCM, Table 1
203(b)	Yes	RCM, Table 2-1, Note 1
204(a)(1)	No	Planned special exposures / emergency exposures not in scope
204(a)(2)	No	Planned special exposures / emergency exposures not in scope
204(a)(3)	No	Planned special exposures / emergency exposures not in scope
204(b)	No	Planned special exposures / emergency exposures not in scope

PREPA BONUS Reactor Radiation Protection Program Matrix

Requirement Number	Applicable	Document Evidence
204(c)(1)	No	Planned special exposures / emergency exposures not in scope
204(c)(2)	No	Planned special exposures / emergency exposures not in scope
204(d)	No	Planned special exposures / emergency exposures not in scope
204(d)(1)	No	Planned special exposures / emergency exposures not in scope
204(d)(2)	No	Planned special exposures / emergency exposures not in scope
204(d)(3)	No	Planned special exposures / emergency exposures not in scope
204(e)	No	Planned special exposures / emergency exposures not in scope
204(f)	No	Planned special exposures / emergency exposures not in scope
205(a)	Yes	Planned special exposures / emergency exposures not in scope
205(b)(1)	Yes	Planned special exposures / emergency exposures not in scope
205(b)(2)	Yes	Planned special exposures / emergency exposures not in scope
205(b)(3)	Yes	Planned special exposures / emergency exposures not in scope
206(a)	Yes	RCM, Article, 215; RPP Sections 6.3, 6.12
206(b)	Yes	RCM, Article 215; RPP Sections 6.3, 6.12
206(c)	Yes	RCM, Article 215; RPP Sections 6.3, 6.12
207	Yes	RCM, Article 214 and Table 1
208	Yes	RCM, Article 214, and Table 1
209(a)	Yes	RCM, Article 223; and RPP, Section 6.3
209(b)	Yes	RCM, Article 521
		BONUS activities do not warrant participation in a bioassay program
401(a)(1)	Yes	RPP Sections 6.5, 6.6.3
401(a)(2)	Yes	RPP Sections 6.5, 6.6.3
401(a)(3)	Yes	RPP Sections 6.5, 6.6.3
401(a)(4)	Yes	RPP Sections 6.5, 6.6.3
401(a)(5)	Yes	RPP Sections 6.5, 6.6.3
401(a)(6)	Yes	RPP Sections 6.5, 6.6.3
401(b)	Yes	RPP Sections 6.5, 6.6.3
401(b)(1)	Yes	RPP Section 6.5.4; RCM Article 551
401(b)(2)	Yes	RPP Section 6.5.4; RCM Article 551
401(b)(3)	Yes	RPP Section 6.5.4; RCM Article 551
401(b)(4)	Yes	RPP Section 6.5.4; RCM Article 551
402(a)(1)(i)	Yes	RPP Section 6.3; RCM Article 511
402(a)(1)(ii)	Yes	RPP Section 6.3; RCM Article 511
402(a)(1)(iii)	Yes	RPP Section 6.3; RCM Article 511
402(a)(2)	Yes	RPP Section 6.3; RCM Article 511
402(a)(3)	Yes	RPP Section 6.3; RCM Article 511
402(a)(4)	No	RPP Section 6.3; RCM Article 511.
402(a)(5)	No	RPP Section 6.3; RCM Article 511
402(b)	Yes	RPP Section 6.3; RCM Article 512
402(c)(1)	Yes	RPP Section 6.4; RCM Article 521
402(c)(2)	Yes	RPP Section 6.4; RCM Article 521
402(c)(3)	Yes	RPP Section 6.4; RCM Article 521

PREPA BONUS Reactor Radiation Protection Program Matrix

Requirement Number	Applicable	Document Evidence
402(c)(4)	Yes	RPP Section 6.4; RCM Article 521
402(d)	Yes	The requirements of this part are stated as not applicable in Article 521
402(d)(1)	No	The requirements of this part are stated as not applicable in Article 521
402(d)(2)	No	The requirements of this part are stated as not applicable in Article 521
403(a)(1)	Yes	RPP Section 6.5; RCM Article 555
403(a)(2)	Yes	RPP Section 6.5; RCM Article 555
403(b)	Yes	Real-time air monitoring is N/A to LMS activities
405(a)(1)	Yes	RPP Section 6.6.7; Addendum to RCM Article 431
405(a)(2)	Yes	RPP Section 6.6.7; Addendum to RCM Article 431
405(b)(1)	Yes	RPP Section 6.6.7; Addendum to RCM Article 431
405(b)(2)	Yes	RPP Section 6.6.7; Addendum to RCM Article 431
405(b)(3)	Yes	RPP Section 6.6.7; Addendum to RCM Article 431
405©(1)	Yes	RPP Section 6.6.7; Addendum to RCM Article 431
405©(2)	Yes	RPP Section 6.6.7; Addendum to RCM Article 431
405©(3)	Yes	RPP Section 6.6.7; Addendum to RCM Article 431
405(d)	Yes	RPP Section 6.6.7; Addendum to RCM Article 431
405©	Yes	RPP Section 6.6.7; Addendum to RCM Article 431
501(a)	Yes	RPP Section 6.6; RCM Article 330
501(b)	Yes	RPP Section 6.6; RCM Article 330
501(c)	Yes	RPP Section 6.6; RCM Article 330
501(d).01	Yes	RPP Section 6.6.; RCM Article 330
501(d).02	Yes	RPP Section 6.6; RCM Article 330
501(d).03	Yes	RPP Section 6.6; RCM Article 330
501(e)	Yes	RPP Section 6.6; RCM Article 330
502(a)	No	N/A
502(b)	No	N/A
502(c)	No	N/A
601(a)	Yes	RPP Section 6.6; RCM Article 231
601(b)	Yes	RPP Section 6.6; RCM Article 231
601(c)	Yes	RPP Section 6.6; RCM Article 231
602(a)	Yes	RPP Section 6.6, RCM Articles 231 and 232
602(b)	Yes	RPP Section 6.6; RCM Article 231 and 232
603	Yes	RPP Sections 6.6; RCM Articles 231 through 238
603(a)	Yes	RPP Section 6.6; RCM Articles 231 through 238
603(b)	No	RPP Section 6.6; RCM Articles 231 through 238
603(c)	No	N/A
603(d)	Yes	N/A
603(e)	Yes	RPP Section 6.6; RCM, Article 231 through 238
603(f)(g)	Yes	RPP Section 6.6; RCM, Article 231 through 238
604(a)(b)(c)	Yes	RPP Section 6.6; RCM Article 231
605	Yes	RPP Section 6.6; RCM Article 231
606(a)(b)	Yes	RPP Section 6.6; RCM Article 412 and Table 4-2

PREPA BONUS Reactor Radiation Protection Program Matrix

Requirement Number	Applicable	Document Evidence
701(a)	Yes	RPP Section 6.9; RCM Articles 711, 712, 713
701(b)	Yes	RPP Section 6.9; RCM Articles 711, 712, 713
702(a)	Yes	RPP Sections 6.9, 6.10; RCM Articles 721, 722
702(b)	Yes	N/A
702(c)(1)	Yes	RCM Article 711 through 722
702(c)(2)	Yes	RCM Article 711 through 722
702(c)(3)(i)	Yes	RCM Article 711 through 722
702(c)(3)(ii)	Yes	RCM Article 711 through 722
702(c)(3)(iii)	Yes	RCM Article 711 through 722
702(c)(3)(iv)	Yes	RCM Article 711 through 722
702(c)(4)(i)	Yes	Does not apply because of limited potential for internal exposure
702(c)(4)(ii)	Yes	Does not apply because of limited potential for internal exposure
702(c)(4)(iii)	Yes	Does not apply because of limited potential for internal exposure
702(c)(5)(i)	Yes	RCM Article 722
702(c)(5)(ii)	Yes	Does not apply because of the limited potential for internal exposure
702(c)(5)(iii)	Yes	RCM Article 722
702(c)(6)	Yes	RCM Article 722
702(d).01	Yes	RCM Article 722
702(d).02	Yes	RCM Article 721
702(e)	Yes	RCM Article 721
702(f)	Yes	RCM Article 721
702(g)	Yes	RCM Article 722
702(h)	Yes	RCM Article 722
703(a)	Yes	RPP Section 6.9; RCM Articles 712 and 751
703(b)	Yes	RPP Section 6.9; RCM Articles 712 and 751
703(c)	Yes	RPP Section 6.9; RCM Articles 712 and 751
703(d)	Yes	RPP Section 6.9; RCM Articles 712 and 751
704(a)	Yes	RPP Section 6.9
704(b)	Yes	RPP Section 6.9; RCM Article 725
704(c)	Yes	RPP Section 6.9; RCM Articles 138, 712, and 742
704(d)	Yes	RPP 6.9; RCM Article 723
704(e)	Yes	RPP 6.9; RCM Article 751
704(f)	Yes	RCM Article 755
801(a).01	Yes	RPP Section 6.10; RCM Article 781
801(a).02	Yes	RPP Section 6.10; RCM Article 781
801(a).03	Yes	RPP Section 6.10; RCM Article 781
801(b).01	Yes	RPP Section 6.10; RCM Article 781
801(b).02	Yes	RPP Section 6.10; RCM Article 781
801(c)	Yes	RPP Section 6.10; RCM Article 781
801(d)	Yes	RPP Section 6.10; RCM Article 781
801(e).01	Yes	RPP Section 6.10; RCM Articles 722 and 781
801(e).02	Yes	RPP Section 6.10; RCM Article 781

PREPA BONUS Reactor Radiation Protection Program Matrix

Requirement Number	Applicable	Document Evidence
901(a).01	Yes	RPP Section 6.11; RCM Chapter 6
901(a).02	Yes	RPP Section 6.11; RCM Article 612
901(a).03	Yes	RPP Section 6.11; RCM Article 612
901(a).04	Yes	RPP Section 6.11; RCM Article 612
901(b).01	Yes	RPP Section 6.11; RCM Articles 613
901(b).02	Yes	RPP Section 6.11; RCM Article 613
901(c)	Yes	RPP Section 6.11; RCM Article 613
901(d)	Yes	RPP Section 6.11; RCM Articles 621 and 631
901(e)	Yes	RPP Section 6.11; RCM Article 613
1001(a).01	Yes	RPP Section 6.2.3; RCM Articles 128 and 311
1001(a).02	Yes	RPP 6.2.3; RCM Article 128
1001(a).03	Yes	RPP Section 6.2.3; RCM Article 128
1001(b)	Yes	RPP Section 6.2.3; RCM Article 128 and 131
1002(a)	Yes	RPP Section 6.2.3; RCM Article 128
1002(b)	Yes	RPP Section 6.2.3; RCM Article 128
1002(b).02	Yes	RPP Section 6.2.3; RCM Article 128
1002(b).03	Yes	RPP Section 6.2.3; RCM Article 128
1002(c).01	Yes	RPP Section 6.2.3; RCM Article 128
1002(c).02	Yes	RPP Section 6.2.3; RCM Article 128
1002(d)	Yes	RPP Section 6.2.3; RCM Article 128
1003(a)	Yes	RPP Section 6.2; RCM Article 311
1003(b)	Yes	RPP Section 6.2; RCM Article 311
1101(a)(1)	Yes	RPP Section 6.5; RCM Chapter 4 Part 1
1101(a)(2)	Yes	RPP Section 6.5; RCM Chapter 4 Part 1
1101(b)	Yes	RPP Section 6.5; RCM Chapter 4 Part 1
1101(c)(1)	Yes	RPP Section 6.5; RCM Chapter 4 Part 1
1101(c)(1)	Yes	RPP Section 6.5; RCM Chapter 4 Part 1
1101(c)(2)	Yes	RPP Section 6.5; RCM Chapter 4 Part 1
1102(a)(b)(c)(e)	Yes	RPP Section 6.5; RCM Articles 337 and 338
1102(d)	No	N/A
1201	Yes	RPP Section 6.6.6; RCM Article 431
1202(a)(b)(c)(d)(e)	No	RPP Section 6.6.6; RCM Article 431
1301(a)(1)	No	RPP Section 6.7; N/A
1301(a)(2)	No	RPP Section 6.7; N/A
1301(a)(3)	No	RPP Section 6.7; N/A
1301(b)	No	RPP Section 6.7; N/A
1301(c)	No	RPP Section 6.7; N/A
1301(d)	No	RPP Section 6.7; N/A
1302(a)	No	RPP Section 6.7; N/A
1302(b)	No	RPP Section 6.7; N/A
1302(c)	No	RPP Section 6.7; N/A
1302(d)	No	RPP Section 6.7; N/A

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Requirement Number	Applicable	Document Evidence
1302(e)	No	RPP Section 6.7; N/A
1304(a)	No	RPP Section 6.8; N/A
1304(b)(1)	No	RPP Section 6.8; N/A
1304(b)(2)	No	RPP Section 6.8; N/A
1304(b)(3)	No	RPP Section 6.8; N/A
1304(b)(4)	No	RPP Section 6.8; N/A

Abbreviations:

N/A = not applicable

RCM = Radiation Control Manual