Fluor-BWXT Portsmouth LLC

RADIATION PROTECTION PLAN PORTSMOUTH GASEOUS DIFFUSION PLANT PIKETON, OHIO

U. S. Department of Energy
Portsmouth/Paducah Project Office
and
Fluor-BWXT Portsmouth LLC

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Prepared by
Fluor-BWXT Portsmouth LLC
Managing
Environmental Management Activities at the
Portsmouth Gaseous Diffusion Plant
Under contract DE-AC30-10CC40017
for the
U. S. Department of Energy
Portsmouth Gaseous Diffusion Plant
Piketon, Ohio

3 Year Periodic Review Date: 5/29/2027

This document contains 132 pages

APPROVALS

Fluor-BWXT Portsmouth LLC

Approval	Devon Chavez (Signature on File)	5/23/2024
	Devon Chavez, Radiation Protection Manager Portsmouth GDP D&D Project Fluor-BWXT Portsmouth LLC	Date
Approval	Harry Gulley (Signature on File)	5/29/2024
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REVISION LOG

Revision Number	Revision Date	Description of Changes	Pages Affected
0	05/26/11	Initial Issue.	All
1	09/19/12	General Revision; updated formatting and revised document in order to address current activities and changes covering the integration of programs.	All
2	06/21/16	General Revision; heavily updated procedure format including numbering every step and section. Updated references. Added new logo and company name. Clarified that there are no VHRAs at PORTS. Performed periodic review.	All
3	06/20/17	Revision/Periodic Review; References updated to align with new dosimetry procedures.	5, 32, 33
4	08/02/17	Revision; This revision is in response to an FBP Independent Assessment on the external dosimetry program in preparation for DOELAP accreditation. It acknowledges FBP's current secondary accreditation under UT Battelle's DOELAP accreditation versus future FBP DOELAP accreditation with qualified vendors.	9, 10, 19, 3
5	05/09/18	Minor Revision/Periodic Review; Deleted/updated outdated references.	1, 24
6	11/01/18	Minor Revision; Minor revisions for clarity. Added several acronyms to acronyms section.	vi, 6, 10, 12 15, 17, 18

Revision Number	Revision Date	Description of Changes	Pages Affected
7	03/11/19	Revision; Made changes in order to clarify the routine survey program. The table in 7.3.3 updated to remove an obsolete reference and some confusing site specific terminology. Added *Contamination Area, Inactive* Subsection 9.9.	13, 20
8	5/11/2021	Revision; Slight edits throughout to update the plan. Added work plans as an RP technical document. Step 6.2.1 text revised to include FBP DOELAP accreditation for external dosimetry.	1, 3, 4, 5, 6 11, 15-18, 39, 68
9	5/25/2021	Minor Revision; changed "radiation" to "radioactivity" in Step 6.1.2. In Step 6.2.1, corrected error in the date and added regulatory reference in parenthesis at end of first sentence. In Step 6.2.2, removed last sentence regarding maintaining secondary accreditation which is no longer applicable according to 835.402 (b) since FBP has gained DOELAP accreditation.	11
10	10/6/2021	Minor Revision; Corrected error in revision log date.	iii
11	4/25/2022	Revision; Changes made in regards to external dosimetry program elements, including suppliers and servicers and supplied devices. Added High Contamination Area – Inactive as a posting option. Updated Appendix B. Updated references to site activities or documents.	1, 3-5, 11, 14, 16, 22, 23, 38, 41-43
12	12/5/2022	Revision; incorporated changes related to the DOELAP CAP.	11, 38, 68
13	6/29/2023	Revision; Removed PNAD requirement for Optically Stimulated Luminescence (OSL) dosimeters. Minor editorial changes as needed.	vii, 38
14	5/29/2024	Revision/Periodic Review; Administrative updates and clarifications as needed.	vii, viii, 1-6, 14-17, 20, 23, 42-44

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ACRONYMS

ACL	Administrative Control Level
AKI	Annular Kinetic Impactor
ALARA	As Low As Reasonably Achievable
APF	Assigned Protection Factor
ARA	Airborne Radioactivity Area
BEQ	Baseline Effluent Quantity
BZ	Breathing Zone
CA	Contamination Area
CAM	Continuous Air Monitor
CED	Committed Effective Dose
CEqD	Committed Equivalent Dose
DAC	Derived Air Concentration
D&D	Decontamination and Decommissioning
DOE	U.S. Department of Energy
DOELAP	Department of Energy Laboratory Accreditation Program
DOT	U.S. Department of Transportation
ED	Equivalent Dose
ESC	Executive Safety Council
FBP	Fluor-BWXT Portsmouth, LLC
FNAD	Fixed Nuclear Accident Dosimeter
HCA	High Contamination Area
HRA	High Radiation Area
MEI	Maximally Exposed Individual
NCS	Nuclear Criticality Safety
NIST	National Institute of Standards and Technology
OSL	Optically Stimulated Luminescence
OSWDF	Onsite Waste Disposal Facility
PNAD	Personal Nuclear Accident Dosimeter
PPE	Personal Protective Equipment
PPPO	Portsmouth/Paducah Project Office
PORTS	Portsmouth Gaseous Diffusion Plant
RBA	Radiological Buffer Area
RCT	Radiological Control Technician

RPM	Radiation Protection Manager
RWP	Radiological Work Permit
SOP	Active Step-off Pad
TED	Total Effective Dose
TLD	Thermoluminescent Dosimeters
UT	University of Tennessee
VHRA	Very High Radiation Area

1.0 INTRODUCTION

1.1 HISTORY

1.1.1 The Portsmouth Site is a 3,714-acre federal reservation in south central Ohio, one mile east of U.S. Highway 23 in rural Pike County, approximately 75 miles south of Columbus, and 22 miles north of Portsmouth. The nearest residential center is the village of Piketon (population approximately 1,800) which is about five miles northwest of the facility on U.S. Highway 23.

1.1.2 The Portsmouth Gaseous Diffusion Plant (PORTS) (part of the Portsmouth site) is a former uranium enrichment plant that was constructed in the mid-1950s and operated by the U.S. Department of Energy (DOE) and its predecessor agencies to supply both high and low-enriched uranium for defense purposes and for commercial nuclear fuel sales. After 1991, the gaseous diffusion plant produced only low-enriched uranium for commercial power plants.

1.1.3 The uranium enrichment program using the gaseous diffusion process resulted in the generation of significant quantities of radioactive, hazardous, and mixed waste referred to as legacy waste. Activities at the site resulted in the contamination of equipment, facilities, soil, and ground water with radioactive and hazardous contaminants. Waste and contaminants at the site include those regulated under the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the Toxic Substances Control Act, and the Atomic Energy Act (as amended) including construction debris, sanitary waste, hazardous waste, radioactive low-level waste, and mixed low-level waste.

1.1.4 Enrichment operations at Portsmouth were discontinued by United States Enrichment Corporation (USEC) on May 11, 2001. Shortly thereafter, DOE issued a cold standby contract to USEC to maintain restart potential within 18-24 months if deemed necessary. Leased facilities determined not to be required to support the cold standby mission were transitioned from USEC back to DOE. Beginning in Fiscal Year 2006, DOE no longer maintained the enrichment operations for potential restart resulting in additional leased facilities being transitioned back to DOE.

1.1.5 In the years between 2001 and 2020, several deactivation and source term removal campaigns were completed although some source term reduction activities are ongoing. Originally, 2020 was slated as the year to commence major demolition actions. However, Federal and local government response to the Coronavirus-19 pandemic ultimately delayed start of several projects. The open air demolition of the X-326 Building began with transite removal on February 24, 2021; structural demolition began shortly thereafter and was completed in the summer of 2022. Deactivation and demolition of additional facilities is expected to occur in the ensuing years.

1.1.6 In 2021, the Onsite Waste Disposal Facility (OSWDF) began to receive and place wastes into complex engineered cells designed to place, pack, and long-term store site waste materials from the Portsmouth cascade and soil remediation and excavation projects. The process includes removal, loading, and transport under an Equivalent Level of Safety (ELS) to U.S. Department of Transportation (DOT) transportation of nuclear materials and radiological wastes on dedicated onsite waste “Haul Roads” to unloading and placement in various cells at the OSWDF. This is expected to be an ongoing process as future demolition activities occur.

1.2 GENERAL INFORMATION

1.2.1 Fluor-BWXT Portsmouth, LLC (FBP) performs decontamination and decommissioning work in accordance with the terms and conditions of prime contract DE-AC30-10CC40017 with DOE. This work scope includes activities at PORTS. FBP is responsible for ensuring compliance with all applicable laws, regulations, and contract requirements. FBP also ensures compliance with safety basis documents and other regulatory agreements.

1.2.2 This Radiation Protection Plan is applicable to all work activities that involve radioactive materials unless otherwise excluded from the requirements of Title 10, *Code of Federal Regulations,* Part 835, *Occupational Radiation Protection* (10 CFR 835). The plan addresses all of the requirements of 10 CFR 835 that are applicable to PORTS.

1.2.3 This plan does not apply to the subject matter within the scope of FBP-EP-PL-00015, *Environmental Radiation Protection Program*.

1.2.4 Appendix B, *Cross-Reference 10 CFR 835 to Portsmouth Radiation Protection Plan,* provides a cross-reference between 10 CFR 835 requirements and the provisions of this plan including the bases for any 10 CFR 835 requirements that have been excluded from this plan. It also shows the procedures in which the requirements have been incorporated. Appendix C*, Compliance Status*, provides documentation of compliance to the 10 CFR 835 requirements.

1.2.5 This plan applies all principles and functions of the Integrated Safety Management System (ISMS). Radiation protection is an integral component of the planning and execution of radiological work performed by FBP.

2.0 PROGRAM MANAGEMENT AND ADMINISTRATION

2.1 Project Management

2.1.1 Project execution is led by the Site Project Director who is responsible and accountable for the execution of the work scope. The Site Project Director is a senior line manager who is fully empowered to control project resources and has cradle-to-grave responsibility for project planning and execution. The Site Project Director is supported by various line managers who oversee specific projects as assigned by the project directors. These line managers are responsible for all aspects of project execution including implementation of radiation safety measures as required by this Radiation Protection plan, written radiation protection procedures, and written work authorizations. Work activities for the project include waste management, environmental restoration, decontamination and demolition, facility operation, and uranium disposition.

2.2 RADIATION PROTECTION ORGANIZATION

2.2.1 The Radiation Protection organization within the Environment, Safety, Health, and Quality (ESH&Q) division develops and implements the plan and supports line management in complying with program requirements. Radiation Protection is managed by the Radiation Protection Manager (RPM) who is supported by the RP Operations Manager, RP Engineering Managers, Radiation Protection Engineers (RPEs), Program staff, training, and dosimetry. The RPM is responsible for ensuring implementation of the requirements of 10 CFR 835, *Occupational Radiation Protection,* and its supporting guidance as it applies to the project.

2.2.2 The Radiation Protection Operations Manager is supported by a team of Radiation Protection Section Managers (RPSMs), Radiation Protection Supervisors (RPSs), Radiological Control Technicians (RCTs), and personnel who are responsible for executing field operations.

2.2.3 To ensure that there are no conflicts between personnel, Radiation Protection, and production goals, the ESH&Q organization including Radiation Protection reports to the FBP Site Project Director and is independent of the execution organizations.

2.2.4 Support personnel who provide radiation protection, radiological engineering, dosimetry, bioassay, independent oversight, instrumentation, and calibration functions are required to have technical qualifications commensurate with their assigned duties.

2.2.5 RCTs and their supervisors perform the functions of assisting and guiding workers in the radiological aspects of the job. RCTs and their supervisors are qualified and trained in accordance with an approved qualification and training program. The training program is designed to meet or exceed the DOE core training requirements.

2.2.6 All RP personnel have the responsibility and authority to stop radiological work or mitigate the effect of an activity if they suspect that the initiation or continued performance of a job, evolution, or test will result in the violation of radiological protection requirements.

3.0 RADIATION PROTECTION PROGRAM

3.1 PURPOSE AND SCOPE

3.1.1 This plan provides an overview of the measures implemented by FBP to ensure compliance with the requirements of 10 CFR 835 for the Portsmouth Decontamination and Decommissioning (D&D) Project. FBP is responsible for ensuring compliance with 10 CFR 835 and implementing the appropriate management and administrative measures as necessary to ensure that authorized activities are conducted in accordance with this plan (10 CFR 835.101[a][e]).

3.1.2 This plan is consistent with the requirements of 10 CFR 835.101, *Radiation Protection Programs.* This plan describes the general requirements for ensuring that employees, members of the public, and the environment are protected from the effects of ionizing radiation during the execution of all activities within the scope of DOE contract DE-AC30-10CC40017. It applies to all activities that involve radioactive materials unless otherwise excluded from the requirements of 10 CFR 835. Specific areas within scope include the following (10 CFR 835.101[c][d]):

- Infrastructure and site maintenance
- Nuclear Operations
- Facility upgrades, decommissioning, stabilization, decontamination, and demolition
- Waste management
- Environmental restoration and remediation
- OSWDF
- Emergency Response
- Balance of Plant Operations

3.1.3 The upper level requirements described in this plan are implemented through a variety of mechanisms including written administrative and technical procedures and plans, instructions, work authorizations (Radiological Work Permits [RWPs]), and employee training and qualifications.

3.1.4 This plan is intended to address all of the requirements of 10 CFR 835 that are applicable to the site. Appendix B provides a cross-reference between 10 CFR 835 requirements and the provisions of this plan including the bases for any 10 CFR 835 requirements that have been excluded from this plan (e.g., planned special exposures or Very High Radiation Areas [VHRAs]).

3.1.5 It is not intended to address activities that are licensed by the U.S. Nuclear Regulatory Commission (NRC) or by the state of Ohio. Radiation Protection may impose additional requirements upon any such activities taking place within areas controlled by FBP to ensure the radiological safety of FBP employees and contracted labor resources personnel.

3.1.6 No actions will be taken that are inconsistent with the requirements of this plan or any other program, plan, schedule, or process that implements the requirements of 10 CFR 835. FBP management is responsible for compliance with this plan as well as for compliance with activities associated with shipments to the Nevada National Security Site as specified in FBP-RP-PRO-00036, *Radiological Surveys for the Receipt, Transport, and Movement of Radioactive Materials*. Nothing in this plan is to be construed as limiting actions that may be necessary to preserve health and safety (10 CFR 835.3[a][b][d]).

3.1.7 This document implements applicable regulatory requirements. They are listed in Appendix A, *Regulatory Requirements Flow Down*.

3.2 PLANS, SCHEDULES, AND OTHER MEASURES FOR ACHIEVING COMPLIANCE

This plan governs authorized activities that are regulated by DOE. FBP is in full compliance with the requirements of this plan as of the date of its submittal to DOE (10 CFR 835.101[f]).

3.3 PLAN APPROVAL AND CHANGES

3.3.1 This plan has been approved by cognizant FBP management and by the Portsmouth/Paducah Project Office (PPPO) Field Element Manager or other properly designated DOE authority.

3.3.2 Subsequent changes to this plan may be instituted as necessary to reflect changes in the scope of the covered activities, changes in the radiological controls instituted for those activities, or changes to 10 CFR 835. Any change that does not reduce the effectiveness of the plan and that continues to meet the requirements of 10 CFR 835 will become effective upon FBP management approval without prior DOE approval. FBP will provide a copy of the plan revision to DOE for information within 60 days of FBP management approval. Any proposed change that may reduce the effectiveness of the plan will be submitted to and be approved by DOE prior to implementation. Plan updates required due to 10 CFR 835 amendments will be submitted to DOE within 180 days of the effective date of the regulatory amendment (10 CFR 835.101[b][g]–[i]).

3.4 INTERNAL ASSESSMENTS

FBP has implemented an internal assessment program that examines the content and implementation of all functional elements of this plan at least once every 36 months (10 CFR 835.102). This time interval may be extended by a period not to exceed 30 days to accommodate scheduling needs (10 CFR 835.3[e]). The functional elements of the program and assessment criteria are established in the assessment program, procedures, or other documents. Assessments are conducted by FBP and/or external personnel. Appendix D, *Radiological Assessment Functional Elements,* shows the functional elements, regulatory provision, and associated guidance documents.

3.5 EDUCATION, TRAINING, AND SKILLS

FBP has implemented processes to ensure that all individuals who bear responsibility for developing and implementing measures necessary for ensuring compliance with 10 CFR 835 have the appropriate education, training, and skills to discharge those responsibilities [835.103]. Affected personnel include members of the Radiation Protection organization and specified managers and supervisors who oversee personnel who work in controlled areas.

3.6 WRITTEN PROCEDURES AND OTHER DOCUMENTATION

3.6.1 The plan is not intended to be a working-level document. The provisions of this plan are implemented through lower level administrative controls including written procedures (see cross-reference in Appendix B) and work authorizations. FBP develops and implements written procedures, work authorizations, and other documents as needed to ensure compliance with the requirements of 10 CFR 835. All employees and contracted labor resource personnel are obligated to comply with the applicable procedures and other documents that implement this plan.

3.6.2 Written authorizations are developed and implemented to control entry into and work within all radiological areas. The work authorizations may be in the form of written procedures or, where no written procedure exists, in the form of a radiological work permit (RWP) or technical work document authorized by the RPM or designee. The need for written procedures for any specified activity is determined per FBP-BS-PRO-00024, *Developing and Maintaining Performance Documents*, based on an assessment of various factors including the (10 CFR 835.104):

- Level and extent of radiological hazards.
- Complexity of the measures required to achieve compliance.
- Education, training, and skills of affected individuals.
- The work authorization whether in the form of a written procedure, an RWP, a project-specific plan or approach, or other properly authorized document specifies radiation protection measures commensurate with the existing and potential radiological hazards associated with the work to be performed. Methods for assessing radiological hazards and specifying appropriate controls are established in Radiation Protection procedures.

3.6.3 Primary goals include dispositioning the inventory of legacy waste, managing the uranium materials under FBP control, and providing for demolition of inactive facilities. For radiological areas, FBP is working to safely complete activities that present radiological risks to personnel and the environment. The radiological risks associated with these activities include internal and external exposure to ionizing radiation and the spread of radiological contamination. To help reduce exposures, FBP actively addresses risks in its work processes through the use of job hazard analyses (JHAs) and as low as reasonably achievable (ALARA) reviews. FBP recognizes that higher risk items may arise and take precedence over the current schedule and maintains flexibility to expedite completion of those higher risk items when needed.

3.7 ALARA POLICY AND PROGRAM

3.7.1 The ALARA Program has been developed and implemented using a combination of physical design features, engineered controls, and administrative controls. During all non-emergency operations, these controls ensure that the radiation doses to employees and the environment do not exceed the regulatory limits.

3.7.2 The FBP ALARA Policy is as follows:

- "*It is the policy of FBP to conduct its operations in a manner that ensures the health and safety of all its employees, subcontractors, and the general public. FBP shall ensure that radiation exposures to its workers and the public, and releases of radioactivity to the environment, are maintained below regulatory limits. Deliberate efforts are taken to further reduce exposures and releases to as low as reasonably achievable (ALARA).*"

3.7.3 This plan consistently reflects this policy. This plan also defines the operational planning process whereby specific tasks are evaluated to ensure worker exposures are minimized during the work evolutions.

3.7.4 The ALARA Program incorporates a graded approach commensurate with the nature of the activities performed. The method of implementing the ALARA program depends on the complexity and magnitude of potential radiological hazards. Complex activities with greater potential for exposure are expected to involve more engineering and administrative control measures to control worker exposures.

3.7.5 Line Management in concert with Radiation Protection is responsible for implementing the radiological protection requirements necessary to maintain radiation exposures ALARA during work activities including major maintenance, decontamination and decommissioning, and environmental remediation. The degree of formality and the level of detail contained in work documents are commensurate with the magnitude of the radiological hazards. Work documents for activities with higher collective dose and/or potential for significant individual dose have more detailed references to ALARA considerations than work documents developed for lower risk activities thereby implementing a graded approach.

4.0 ALARA COMMITTEE

The ALARA Committee is an independent advisory group to higher management and management review committees on Radiation Protection issues including the ALARA Program. It functions to monitor selected operational Radiation Protection issues, advise plant management on Radiation Protection concerns, and review proposed designs, work practices, selected suggestions, and selected projects with regard to contamination control and/or ALARA. The committee meets at least semi-annually.

4.1 MEMBERSHIP AND STRUCTURE

The ALARA Committee is composed of an appropriate mix of line and functional area management, Radiation Protection organization technical staff, and representatives from the collective bargaining unit. ESH&Q management determines the initial makeup of the Committee and will adjust membership based upon the skill mix needed for projected near-term work. The committee chair or designee is responsible for requesting appropriate functional representation from senior management. Committee members may designate an alternate to attend committee meetings in their absence.

4.2 AUTHORITIES

Committee authority is limited to reviews and recommendations. The Committee has no approval, or start work authority. However, each employee has Stop Work authority per FBP-RP-PRO-00054, *Conduct of Radiological Operations*. Ad hoc subcommittees may be established for special studies or reviews pertinent to committee-related issues.

4.3 RESPONSIBILITIES

4.3.1 The committee chair ensures that the functions and the assigned tasks of the Committee are properly executed. Tasks may be assigned by, but are not limited to, senior management and the FBP Executive Safety Council (ESC). Special reports are prepared for senior management or the ESC upon request or when the committee chair determines issues warrant attention.

4.3.2 The Committee reviews matters that have or may have an impact on contamination control and/or ALARA. These include but are not limited to the following:

- Technologies for selected buildings and/or job tasks
- Current work practices and completed tasks that have/had contamination control or ALARA concerns
- Radiation Protection violations
- Lessons learned
- Trends and resulting impacts on contamination control and/or ALARA
- Annual contamination control and exposure goals
- Baseline effluent quantities (BEQs) (the BEQ is the effluent expected under normal operating conditions)

4.4 MINUTES AND RECORDS

Minutes are issued that identify committee members and/or alternates in attendance, agenda items, a summary of decisions made, and action items. Copies are made available to senior management, the ESC, the committee members, and the bargaining units.

5.0 RADIATION DOSE LIMITS AND EXPOSURE CONTROL

5.1 RADIATION DOSE LIMITS

5.1.1 Individual doses resulting from radiation exposures associated with the project are controlled within the following limits (10 CFR 835.202[a], 206[a], 207, and 208). See also the administrative limits in Section 13.2:

Category	Type of Dose	Dose Limit[1]
Radiological worker[2] Check all terms	Total effective dose (TED)	5 rem per year
	Total organ equivalent dose (ED)[3]	50 rem per year
	Lens of the eye ED	15 rem per year
	TED to the skin or extremity[4]	50 rem per year
Declared pregnant worker	Embryo/fetus	0.5 rem during gestation period
Occupationally exposed minors	TED	0.1 rem per year
	All other doses	10 percent of limits for general employees
Member of the public in controlled area	TED	0.1 rem per year

[1] Occupational dose limits do not include doses from background, therapeutic, and diagnostic medical radiation or radiation doses resulting from voluntary participation in medical research programs (10 CFR 835.202[c]).

[2] Does not include doses resulting from planned special exposures or authorized emergency exposures.

[3] Equals the sum of the ED to the whole body for external exposure and the committed equivalent dose (CEqD) to any organ or tissue other than the skin or the lens of the eye.

[4] Equals the sum of the ED to the skin or to any extremity for external exposures and the CEqD to the skin or any extremity.

5.1.2 FBP determines each individual's TED by summing the ED from external exposures and the CEqD from intakes during the year (10 CFR 835.203[a]). The ED to the whole body may be used as effective dose for external exposure expressed in units of rem. FBP determines the ED using the radiation and tissue weighting factors provided in 10 CFR 835.2, *Definitions*. For non-uniform exposures to the skin, FBP determines the ED using the procedures provided in 10 CFR 835.205, *Determination of Compliance for Non-Uniform Exposure of the Skin*. The equivalent dose to tissue is multiplied by the appropriate tissue weighting factor in 10 CFR 835.2, *Definitions,* to obtain the effective dose contribution from that tissue (10 CFR 835.203[b]).

5.1.3 In demonstrating compliance with the occupational dose limits, FBP includes all occupational doses received during the year (except for planned special exposures and authorized emergency exposures) and attempts to obtain documentation of all occupational doses received by the individual during the current year. If these records cannot be obtained, FBP may accept a written estimate signed by the affected individual (10 CFR 835.202[b]).

5.2 PLANNED SPECIAL EXPOSURES

FBP does not intend to use planned special exposures during the course of the project (10 CFR 835.204).

5.3 LIMITS FOR THE EMBRYO/FETUS

Substantial variation above a uniform exposure rate that would satisfy the limits provided in Section 5.1 is avoided. If the equivalent dose to the embryo/fetus is determined to have already exceeded 0.5 rem by the time a worker declares her pregnancy, the declared pregnant worker is not assigned to tasks where additional occupational exposure is likely during the remaining gestation period (10 CFR 835.206[b]–[c]).

5.4 OCCUPATIONAL DOSE LIMITS FOR MINORS

In addition to the dose limit in Section 5.1, minors are also limited to 10 percent of the limits specified for the lens of the eye, skin, and extremities of general employees (10 CFR 835.207).

5.5 CONCENTRATIONS OF RADIOACTIVE MATERIAL IN AIR

5.5.1 In establishing controls on occupational exposures to airborne radioactive material, FBP uses the derived air concentration (DAC) values provided in Appendix A, *Derived Air Concentrations (DAC) for Controlling Radiation Exposure to Workers at DOE Facilities,* of 10 CFR 835 (10 CFR 835.209[a]).

5.5.2 For purposes of estimating individual internal doses, radiobioassay data are generally preferable to air monitoring data. FBP will estimate each individual's internal dose based on radio bioassay data rather than air monitoring data unless the radiobioassay data are unavailable or inadequate or estimates based on air monitoring data can be demonstrated to be as or more accurate (10 CFR 835.209[b]).

6.0 RADIOLOGICAL MONITORING

6.1 GENERAL REQUIREMENTS

6.1.1 Radiation Protection procedures implement the requirements of 10 CFR 835 for monitoring of work areas and individuals including external and internal exposures, contamination control, and radiological accident monitoring. Radiation Protection is responsible for providing the radiological monitoring necessary to comply with 10 CFR 835 in accordance with this plan. The FBP internal and external dosimetry programs will maintain Department of Energy Laboratory Accreditation Program **(**DOELAP) accreditation. Dosimetry accreditation will be provided as either a secondary accreditation from a DOELAP accredited provider or FBP will provide dosimetry services under its own DOELAP accreditation using DOELAP qualified providers. Monitoring results are available to the Program Directors and subcontractors to assist in activity hazard analysis and job planning.

6.1.2 Workplace monitoring is a mechanism to detect and quantify airborne radioactivity, external radiation, and radioactive contamination levels; enables measures to be taken to prevent unanticipated and unplanned exposures, and contributes to maintaining actual exposures ALARA.

6.2 EXTERNAL DOSIMETRY

6.2.1 FBP has maintained DOELAP accreditation for External Dosimetry since January 1, 2020. DOELAP External Dosimetry services are subcontracted to Landauer, Inc. as of January 2023 (10 CFR 835.402[b][1]). FBP historically had subcontracted external dosimetry services to the UT-Battelle in Oak Ridge, TN. FBP currently uses the services of a subcontractor to furnish and process dosimeters suitable for monitoring personnel exposures. Radiological workers who are likely to receive an equivalent dose to the whole body of 100 mrem or more in a year require monitoring for external radiation exposure (10 CFR 835.402[a][1][i]).

6.2.2 Individuals who enter radiological areas are typically, but not always included in the external dosimetry program. Exceptions are made where it can be demonstrated that radiation dose will be negligible based on reliable external dose evaluations. Monitoring of personnel for external radiation exposure to determine occupational dose has historically been performed using thermoluminescent dosimeters (TLDs), although other devices having similar sensitivity and accuracy may also be used, such as Optically Stimulated Luminescent (OSL) dosimeters. Any reference to TLD in any site document, posting, software program, or other element is synonymous with the personnel dosimetry used to implement the requirements of 10 CFR 835, regardless of the type of technology. It is the individual's responsibility to wear dosimeters in accordance with requirements established by Radiation Protection.

6.2.3 Personnel entering work areas are also required to be monitored for external radiation exposure if they meet one of the following criteria:

- Individuals who are likely to receive an equivalent dose to the skin or to any extremity of 5 rem or more in a year (10 CFR 835.402[a][1][ii])
- Individuals who are likely to receive a lens of the eye equivalent dose of 1.5 rem or more in a year (10 CFR 835.402[a][1][iii])
- Declared pregnant workers who are likely to receive from external sources an equivalent dose in excess of 50 mrem to the embryo/fetus (10 CFR 835.402[a][2])

- Occupationally exposed minors likely to receive an equivalent dose to the whole body of 50 mrem or more in a year, a lens of the eye equivalent dose of 750 mrem or more in a year, or an equivalent dose to the skin or to any extremity of 2,500 mrem or more in a year (10 CFR 835.402[a][3])
- Members of the public entering a controlled area who are likely to receive a dose in excess of 50 mrem in a year from external sources (10 CFR 835.402[a][4])
- Any individual entering a high or very high radiation area (10 CFR 835.402[a][5])
- As directed by the RPM or RWP.

6.3 INTERNAL DOSIMETRY

6.3.1 FBP subcontracts internal dosimetry services to UT-Battelle in Oak Ridge TN. UT-Battelle is DOELAP-accredited. FBP's Piketon facility is listed under UT-Battelle's extended accreditation (10 CFR 835.402[d][1]). The internal dosimetry program is developed in a manner consistent with the requirements of UT-Battelle's approved program. The committed effective dose (CED) per unit of intake by inhalation from International Commission on Radiological Protection (ICRP) Publication 68, *Dose Coefficients for Intakes of Radionuclides by Workers,* is used to calculate internal dose. In vivo lung counting may also be employed as determined by the RPM. If the potential to exceed an intake of 10 mg/week of soluble uranium exists, then appropriate measures are employed to assess exposure. The routine bioassay program considers the exposure potential to personnel by work location and work activity. The internal dosimetry technical basis document provides the technical and philosophical bases of the bioassay monitoring and internal dose assessment aspects of the internal dosimetry programs at PORTS.

6.3.2 Radiological workers who are likely to receive intakes that could result in a CED of 100 mrem or more or who are at risk for such intakes are evaluated for participation in a routine individual monitoring program that includes bioassay and/or personal air sampling (10 CFR 835.402[c][1]). This evaluation is done when work authorizations are prepared for the specific work to be performed. Bioassay requirements are stated on the RWP or other work authorization. Worker bioassay samples may be collected based on either a routine schedule, Breathing Zone (BZ) sampling results, or work authorization log-in entries. The internal dosimetry program includes all individuals who work in areas where exposure to removable surface contamination or airborne radioactive material could result in a CED of 100 mrem.

6.3.3 Personnel entering work areas are also required to be monitored for internal radiation exposure if they meet one of the following criteria (10 CFR 835.402[c][2]–[4]):

- Declared pregnant workers who are likely to receive an intake or intakes resulting in an equivalent dose to the embryo/fetus in excess of 50 mrem
- Occupationally exposed minors who are likely to receive a dose in excess of 50 mrem from all radionuclide intakes in a year
- Members of the public entering a controlled area likely to receive a dose in excess of 50 mrem from all radionuclide intakes in a year
- As directed by the RPM or RWP

7.0 WORKPLACE RADIOLOGICAL MONITORING

7.1 INTRODUCTION

Workplace radiation, contamination, and air monitoring programs are used to verify the integrity of radioactive material containment and to detect inadvertent releases of those materials into the workplace. Workplace monitoring provides a control mechanism to detect and quantify external radiation and radioactive contamination levels, enables measures to be taken to prevent unanticipated and unplanned exposures, and contributes to maintaining actual exposures ALARA. Procedures require that radiological monitoring be performed where an individual is likely to receive an exposure of 40 or more DAC-hours in a year or as necessary to characterize the airborne radioactivity hazard where respiratory protective devices for protection against airborne radionuclides have been prescribed. Real-time air monitoring is performed as necessary to detect and provide warning of airborne radioactivity concentrations that warrant immediate action to terminate inhalation of airborne radioactive material (10 CFR 835.403).

7.2 GENERAL MONITORING

Monitoring involves radiation surveys as well as monitoring for surface and airborne contamination. Contamination surveys are conducted both on a routine and non-routine basis. More effort is required for monitoring transferable radioactive contamination since radiation levels in excess of 5 mrem/hour tend to exist only in a small fraction of the site. Potentially radioactive materials in contamination areas, high contamination areas, or airborne radioactivity areas are surveyed prior to release. Contamination surveys on materials, equipment, and portable facilities for release of material from contamination areas, high contamination areas, or airborne radioactivity areas are conducted as specified in procedures. Monitoring of individuals and areas is performed to (10 CFR 835.401[a]):

- Demonstrate compliance with 10 CFR 835.
- Document and detect changes in radiological conditions.
- Detect the gradual buildup of radioactive material.
- Verify the effectiveness of engineered and administrative controls in containing radioactive material and reducing radiation exposure.
- Identify and control potential sources of individual exposure to radiation and/or radioactive material.

7.3 WORK AREA SURVEYS

7.3.1 The radiological survey program consists of routine surveys, work support surveys, and material release activities. Surveys are conducted to support facility activities in a manner that ensures that radiological hazards associated with each activity are properly identified and that relative radiation levels and concentrations of radioactive material are determined. Radiological surveys for the purposes of establishing personal protective equipment (PPE) or for posting requirements are performed by qualified Radiation Protection personnel.

7.3.2 The routine survey program is implemented in site procedures and involves area monitoring to determine workplace radiological conditions, effectiveness of contamination control measures, and proper identification of radiological hazards. Specific areas are categorized and scheduled for survey commensurate with their relative radiological hazard and contamination potential as well as process knowledge. Monitoring frequencies are established based on the stability of operation as demonstrated by the consistency of survey results and are consistent with DOE G 441.1-1C guidance (based on potential/actual radiological hazards, the probability of change, potential for contamination spread, and area occupancy factors). Schedules should be adjusted to reflect changes in conditions, activities and previous results.

7.3.3 Due to the large physical size of each process building (as much as 60 acres under each roof) and the facility design (control rooms and locker rooms are located inside the controlled area), the primary focus of the routine survey program is to quickly identify any breakdown in contamination control. Areas having the highest survey frequency are those that serve as the access, egress, or boundaries between areas of different radiological conditions where the spread of radioactive material is most likely to occur as shown in the following table.

Area Surveyed	Survey Frequency
Active UF_6 Feed/withdrawal stations	Monthly [1]
Contamination Areas (CA), and High Contamination Areas (HCA)	Annually [2, 5]
Radiological buffer areas (RBA)	Weekly/Quarterly [6]
Lunch rooms/breakrooms within Controlled Areas	Weekly [3]
Active step-off pads (SOPs)	Daily [4]
Boundary control stations (including boundaries and any designated travel paths)	Weekly
Locker Rooms/Change rooms within Controlled Areas	Monthly
UF_6 sample handling laboratories	Monthly [1]

1 Or following any indication of UF_6 release.

2 Due to the size of process areas, major access paths and frequently traversed portions of the area are surveyed quarterly. Additionally, associated localized area surveys are taken following an indication of UF_6 release and during activities with a relatively high potential for contamination spread.

3 Survey lunchrooms/breakrooms adjacent to CAs or HCAs, daily.

4 Surveys of active step off pads are performed daily Monday through Thursday. Site holidays and other non-working days are excluded.

5 In lieu of annual surveys, CAs, or HCAs identified as “inactive” are only surveyed upon entry.

6 Weekly, in routinely occupied RBAs, and quarterly, in normally unoccupied RBAs.

7.3.4 Work support surveys are a fundamental element of the RWP process. In-process surveys are conducted as necessary to verify radiological conditions at various points in the work activity and to ensure that exposure potentials are maintained in accordance with the ALARA principle. When required by work activities, surveys are conducted to support decontamination efforts and the release of tools, equipment, and waste material from the work area. Boundary verification surveys are performed to monitor for potential boundary limit exceedances.

7.3.5 In the event that radiological surveys indicate radiation or radioactive contamination levels above the limits for the area, the area is reposted and the cause of the increased radiation or radioactive contamination is investigated.

7.4 RADIOLOGICAL PROTECTION INSTRUMENTATION

7.4.1 Properly selected, operated, maintained, and calibrated radiological instruments are employed to implement an effective radiological control program. Radiological instruments are divided into several broad categories such as portable radiation dose rate survey instrumentation, contamination monitoring instrumentation, air monitoring instrumentation, and non-portable instrumentation.

7.4.2 The standards used for calibrating instrument functions are directly or indirectly traceable to a National Institute of Standards and Technology (NIST) standard. Portable instruments are calibrated before initial use, after maintenance or adjustment that may affect the calibration, following any modification or alteration that may affect instrument response, and at intervals not to exceed one year (10 CFR 835.401[b][1]).

7.4.3 The instrument to be used for any particular application is selected by Radiation Protection personnel based on the type(s), levels, and energies of the radiation field and the environmental conditions in the affected area. Operability checks are performed to verify that the instruments respond properly to radiation. Instruments suspected of providing incorrect in-service measurements are removed from service pending a satisfactory source check or calibration. Radiological survey data collected with a suspect instrument are evaluated prior to final written acceptance of the data (10 CFR 835.401[b][2]-[4]).

7.5 WORK AREA AIR SAMPLING

7.5.1 To the extent practicable, radioactive materials are contained and/or confined during processing, transfer, and storage as necessary to minimize intakes of such materials by personnel in accordance with the ALARA principle. As appropriate, operations involving readily dispersible forms of radioactive materials are accomplished within enclosures (process equipment, glove boxes, glove-port hoods, laboratory-type hoods, etc.). Portable ventilation units are used in work areas where large portions of process system surfaces are exposed for maintenance.

7.5.2 The air monitoring program has been established in facilities or areas where production, maintenance, and support activities involve process equipment or hook-ups and disconnects of UF_6 handling equipment. The program includes portable air sampling equipment such as continuous air monitors (CAMs), portable low and high volume air samplers, and battery-powered lapel samplers.

7.5.3 CAMs are typically installed in process and process support facilities where equipment is operated or maintained. Other methods of air monitoring which provide equivalent levels of characterization and which will alert personnel of discrete releases may be used in lieu of CAMs when conditions dictate.

7.5.4 Alarming CAMs, low volume, and/or high volume air samplers are used to provide job coverage of work evolutions where the airborne radioactivity could exceed either work or outdoor activity concentration thresholds.

7.5.5 The frequency of exchanging and analyzing sample media for work area samplers is based on historical data and professional evaluation, and is described in work plans or related procedures. Due to radon and thoron daughters, air samples are routinely allowed to decay for three days to allow naturally occurring radioactive material to decay. Job coverage samples are normally exchanged every shift. Air samples with elevated results are sent to a laboratory for isotopic analysis.

7.5.6 Grab samples for expedited analysis may be collected using annular kinetic impactors (AKIs) or low volume air samplers. Grab samples are taken when evaluating specific job evolutions with the potential for creating airborne radioactivity and when determining whether an airborne radioactivity area exists. Grab samples collected with an AKI permit use of portable contamination survey instruments to perform expedited analysis of air samples.

7.5.7 Flow rates through low volume and high volume air samplers, as measured by in-line flow rate instrumentation, are checked at the beginning and end of each sampling period. Air sample flow measurement devices are calibrated under standard laboratory conditions at least annually. The NIST-traceable standards that are used have accuracy and precision of 20 percent or better. Lapel samplers are calibrated as described by procedure.

7.5.8 A review of historical data indicates that personnel are not routinely exposed to high levels of airborne uranium, except where work activities involve cascade component removal, maintenance, decontamination, disassembly, and some hook-ups and disconnects of UF_6 handling equipment. Concentrations of airborne radioactivity are normally less than one percent DAC.

7.5.9 The administrative control levels for BZ air samples DAC and DAC-hour/sample take into account respirator Assigned Protection Factor (APF) when BZ samples indicate exposure to > 4 DAC hours. Special bioassay sampling is required when BZ air samples exceed 1.6 DAC-hours, allowing for adjustment for respirator APF.

7.5.10 In the event of unexpected or abnormally high airborne radioactivity results, investigations are undertaken to verify the validity of the result, identify the source of the condition, assess the associated impact, and perform bioassay sampling as appropriate to determine personnel dose and, if practicable, prevent recurrence.

7.5.11 Filter media samples have collection efficiencies applied for alpha and beta particles as specified in the associated technical basis document. Factors which may adversely affect these efficiencies, such as sample duration and environmental conditions, are administratively controlled to prevent significant deviations which would impact the air monitoring result.

7.6 ENVIRONMENTAL RADIATION PROTECTION

Environmental radiation protection procedures and practices are conducted through the Environmental Protection and Environmental Restoration organizations and are not addressed in this plan.

7.7 MONITORING VEHICLES TRANSPORTING WASTES ON THE HAUL ROAD

The U.S. DOE's plan for the decontamination and decommissioning operations at Portsmouth includes placing waste (structural materials, components, impacted soils, etc.) into the OSWDF from the following activities:

- Demolition of site structures and foundations
- Soil excavation related to environmental remediation of various locations (also serves to provide sources of engineered fill for OSWDF)
- Other miscellaneous efforts

Radiological controls including area and materials/equipment monitoring, are in accordance with 10 Code of Federal Regulations (CFR) 835 and equivalent in safety to 49 CFR 173, *Shippers – General Requirements for Shipments and Packagings.* The haul routes will be controlled per these regulatory standards.

7.8 MONITORING OF PACKAGES RECEIVED FROM TRANSPORTATION

Due to the potential for damage during transport and exposure of individuals who do not routinely work with radioactive materials, special precautions are warranted for handling arriving packages of radioactive material.

Arriving shipments of radioactive materials are surveyed by qualified personnel in accordance with procedures. The required monitoring is performed as soon as is practicable following receipt of the package, but not later than eight hours following the beginning of the working day following receipt of the package (10 CFR 835.405[d]).

7.9 TYPE A QUANTITIES

If packages containing quantities of radioactive material in excess of a Type A quantity (as defined at 10 CFR 71.4, *Packaging and Transportation of Radioactive Material, General Provisions, Definitions*) are expected to be received from radioactive material transportation, arrangements are made to either (10 CFR 835.405[a]):

- Take possession of the package when the carrier offers it for delivery; or
- 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.

7.10 RADIOACTIVE WHITE AND YELLOW LABEL MATERIAL

7.10.1 Upon receipt from radioactive material transportation, external surfaces of packages known to contain radioactive material are monitored if the package (10 CFR 835.405[b]):

- Is labeled with a Radioactive White I, Yellow II, or Yellow III label (as specified at 49 CFR 172.403, *Class 7 (Radioactive) Material,* and 172.436–440, *Radioactive White-I Label, Radioactive Yellow-II Label,* and *Radioactive Yellow-III Label*)

  OR

- 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); or
- Has evidence of degradation such as packages that are crushed, wet, or damaged.

7.10.2 This monitoring is not required for packages transported onsite that remain under the continuous observation and control of a qualified radiological worker who is knowledgeable of and implements required exposure control measures (10 CFR 835.405[e]).

7.11 MONITORING CRITERIA

7.11.1 The monitoring described in Section 7.10 includes (10 CFR 835.405[c]):

- Measurements of removable contamination levels, unless the package contains only special form (as defined at 10 CFR 71.4) or gaseous radioactive material
- Measurements of the radiation levels, if the package contains a Type B quantity (as defined at 10 CFR 71.4) of radioactive material.

8.0 RADIOLOGICAL AREA ENTRY CONTROL

8.1 CONTROLS FOR ALL RADIOLOGICAL AREAS

8.1.1 FBP implements measures to maintain personnel entry control for each radiological area, commensurate with existing and potential radiological hazards within the area (10 CFR 835.501[a]–[b]). There may be site-specific situations where the use of boundary identifiers (ropes, chains, fence, etc.) may not be appropriate. These might include large areas with minimal radiological hazards. For these types of situations, the time and expense of erecting and maintaining boundary identifiers may not be warranted. Site-specific controls such as a gate and posting on the access road, supplemented by postings at suitable intervals around the area, may be adequate to provide appropriate warning and minimize inadvertent intrusions.

8.1.2 One or more of the following methods are used, depending on the hazards in the area and the planned activities (10 CFR 835.501[c]):

- Signs and barricades
- Control devices on entrances
- Conspicuous visual and/or audible alarms
- Locked entrance ways
- Administrative controls

8.1.3 FBP implements written authorizations that are approved by the RPM or designee to control entry into and work within radiological areas. The written authorization specifies radiation protection measures commensurate with the existing and potential hazards. The RWP (or other work authorization) is the primary administrative mechanism used to establish radiological entry controls and protective measures for intended work activities. The RWP informs workers of area radiological conditions and entry requirements, limiting conditions and provides a mechanism to relate worker exposure to specific work activities. Written RWPs (either task or risk based) are used to control entry into radiological areas. All individuals must comply with controls prescribed in the controlling work authorization (10 CFR 835.501[d]).

8.1.4 An RWP to cover planned work may require the development of a pre-job ALARA review. Radiation Protection develops the pre-job ALARA review based on project team input and supporting work control documents.

8.1.5 Radiation Protection establishes and maintains radiological barriers, barricades, warning devices, or locks as needed to safely control the work site in accordance with the determinations made regarding radiological entry control, posting, and labeling requirements. Permanent barricades are used to augment administrative controls whenever necessary.

8.1.6 No control(s) are installed at any radiological area exit that would prevent rapid evacuation of personnel (10 CFR 835.501[e]).

8.2 HIGH RADIATION AREA ENTRY CONTROL

8.2.1 For entry into High Radiation Areas (HRAs), Radiation Protection provides additional monitoring as needed to determine the exposure rates to which individuals are exposed. This may include monitoring before the entry (such that Radiation Protection personnel can be assured of the actual radiation levels in the area) and/or monitoring during the entry. In addition, Radiation Protection provides supplemental dosimeters such as pocket or electronic dosimeters that are capable of providing an immediate indication of the individual's integrated deep dose equivalent during the entry. RWP stay time controls are also implemented as appropriate (10 CFR 835.502[a]).

8.2.2 Radiation Protection provides physical controls to control access to an HRA where radiation levels exist such that an individual could exceed a deep dose equivalent to the whole body of one rem in any one hour at 30 cm from the source or from any surface that the radiation penetrates. The controls for HRAs include one or more of the following (10 CFR 835.502[b]):

- 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 an HRA
- A device that functions automatically to prevent use or operation of the radiation source or field while individuals are in the area
- A control device that energizes a conspicuous visible or audible alarm signal so that the individual entering the HRA and the supervisor of the activity are made aware of the entry
- Continuous direct or electronic surveillance that is capable of preventing unauthorized entry
- 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
- Entryways that are locked (during periods when access to the area is required, positive control over each entry is maintained)

8.3 VERY HIGH RADIATION AREAS

Very High Radiation Areas (VHRAs) are areas where radiation levels exceed 500 rads/hr at one meter from the radiation source or 1 meter from any surface that the radiation penetrates. There is no onsite facility managed by FBP where a VHRA is present.

9.0 RADIOLOGICAL HAZARD POSTING AND LABELING

9.1 GENERAL POSTING AND LABELING REQUIREMENTS

9.1.1 Except for radioactive material labels applied to sealed radioactive sources (10 CFR 835.606[b]), all radiological hazard postings and labels bear the standard radiation warning trefoil in black or magenta on a yellow background. (10 CFR 835.601[a]).

9.1.2 All signs and labels are clearly and conspicuously posted. Additional radiological protection instructions beyond those required by 10 CFR 835 such as protective clothing and dosimetry requirements may be included on the signs and labels as directed by Radiation Protection procedures or personnel. If more than one radiological condition exists in an area and requires posting each condition is identified by posting radiological conditions on one or more signs (for example user-changeable signs using inserts) (10 CFR 835.601[b]).

9.1.3 Other areas not designated in this plan may be posted based on Radiation Protection procedures or instructions from Radiation Protection supervision. These areas may be posted as needed to establish buffer areas around the designated areas or to identify other conditions such as underground hazards or areas requiring special controls.

9.1.4 The boundaries of posted areas are established based on the results of area monitoring activities. The posted boundaries may be expanded beyond the physical limits indicated by monitoring activities to provide a buffer area and as necessary to facilitate area access and control.

9.1.5 Appropriate postings and labels are established as soon as practicable following identification of the radiological conditions requiring posting and/or labeling.

9.2 POSTINGS

Each access point to radiological areas and radioactive material areas are posted with conspicuous signs bearing the wording provided in Section 9.4 through Section 9.12 (835.603). The posting and labeling requirements in 835 subpart G may be modified to reflect the special considerations of DOE activities conducted at private residences or businesses. Such modifications shall provide the same level of protection to individuals as the existing provisions in subpart G
10 CFR 835.601(c).

9.3 CONTROLLED AREAS

Each access point to a Controlled Area is posted “Caution Controlled Area” whenever radiological areas or radioactive material areas exist in the area. Individuals who enter only controlled areas without entering radiological areas or radioactive material areas are not expected to receive a total effective dose of more than 100 mrem in a year. Therefore, individual monitoring for external dose may not be required for these individuals. Signs used for this purpose are selected to avoid conflict with security requirements (10 CFR 835.602).

9.4 RADIATION AREAS

The words “Caution, Radiation Area” are posted at any area accessible to individuals in which radiation levels could result in an individual receiving an equivalent dose in excess of 5 mrem in one hour at 30 cm from the radiation source or from any surface that the radiation penetrates.

9.5 HIGH RADIATION AREAS

The words “Caution, High Radiation Area” are posted at any area accessible to individuals in which radiation levels could result in an individual receiving an equivalent dose in excess of 100

mrem in one hour at 30 cm from the radiation source or from any surface that the radiation penetrates.

9.6 VERY HIGH RADIATION AREAS

There are no areas managed by FBP onsite that require posting as Very High Radiation Areas. The words "Grave Danger, Very High Radiation Area" are posted at any area accessible to individuals in which radiation levels could result in an individual receiving an absorbed dose in excess of 500 rads in one hour at one meter from a radiation source or from any surface that the radiation penetrates.

9.7 AIRBORNE RADIOACTIVITY AREA

9.7.1 The words "Caution, Airborne Radioactivity Area" are posted for:

A. Any area accessible to individuals in which airborne radioactivity levels exceed, or are likely to exceed, the DAC values listed in Appendix A, *Derived Air Concentrations (DAC) for Controlling Radiation Exposure to Workers at DOE Facilities*, of 10 CFR 835, or

B. Any area where an individual present in the area without respiratory protection could exceed an intake exceeding 12 DAC-hours in a week

9.8 CONTAMINATION AREA

The words "Caution, Contamination Area" are posted in areas accessible to individuals where removable surface contamination levels exceed values listed in Appendix D, *Surface Contamination Values,* of 10 CFR 835, but are less than or equal to 100 times those values.

9.9 CONTAMINATION AREA DESIGNATED INACTIVE

9.9.1 The words "Caution, Contamination Area, Inactive" are posted in areas accessible to individuals where removable surface contamination levels exceed values listed in Appendix D, *Surface Contamination Values*, of 10 CFR 835, but are less than or equal to 100 times those values.

9.9.2 Contamination Areas designated as "inactive" are not surveyed on any frequency. The area has been determined to be either abandoned or infrequently entered, and thus is not in use and there are no known plans for future use/entry. Limited access (within one shift) may be approved using procedural controls for entry and surveying. Unlimited access (access lasting longer than one shift, or access for future dates) requires reposting as an active area and a radiological characterization of the area. Accessible boundaries of contamination areas posted "inactive" are documented in the routine radiological survey program and surveyed once a year.

9.10 HIGH CONTAMINATION AREA

The words "Caution, High Contamination Area" are posted in areas accessible to individuals where removable surface contamination levels are greater than 100 times the values listed in Appendix D of 10 CFR 835.

9.11 HIGH CONTAMINATION AREA DESIGNATED INACTIVE

9.11.1 The words "Caution, High Contamination Area, Inactive" are posted in areas accessible to individuals where removable surface contamination levels exceed values listed in Appendix D, *Surface Contamination Values*, of 10 CFR 835, but are less than or equal to 100 times those values.

9.11.2 High Contamination Areas designated as "inactive" are not surveyed on any frequency. The area has been determined to be either abandoned or infrequently entered, and thus is not in use and there are no known plans for future use/entry. Limited access (within one shift) may be approved using procedural controls for entry and surveying. Unlimited access (access lasting longer than one shift, or access for future dates) requires reposting as an active area and a radiological characterization of the area. Accessible boundaries of high contamination areas posted "inactive" are documented in the routine radiological survey program and surveyed quarterly (annually as part of the routine program for any surrounding active Contaminated Area).

9.12 RADIOACTIVE MATERIAL AREA

The words "Caution, Radioactive Material" are posted at any area accessible to individuals in which items or containers of radioactive material exist and the total activity of the radioactive material exceeds the applicable values in Appendix E, *Values for Establishing Sealed Radioactive Source Accountability and Radioactive Material Posting and Labeling Requirements,* of 10 CFR 835.

9.13 EXCEPTIONS TO POSTING REQUIREMENTS

9.13.1 In lieu of radiological hazard postings, radiological areas and radioactive material areas may be placed under the continuous observation and control of an individual who is knowledgeable of and empowered to implement the required access and exposure control measures. These provisions may be used for no more than eight continuous hours. After eight hours, appropriate radiological hazard postings will be established (10 CFR 835.604[a]).

9.13.2 The following areas need not be posted as radioactive material areas (10 CFR 835.604[b]):

- Areas that are posted as radiological areas
- Areas in which each item or container of radioactive material is labeled in accordance with 10 CFR 835 Subpart G, *Posting and Labeling,* such that individuals entering the area are made aware of the hazard
- Areas in which the radioactive material of concern consists solely of structures or installed components that have been activated (i.e., such as by being exposed to neutron radiation or particles produced by an accelerator).

9.13.3 It is preferable that radioactive material packages in transport be delivered directly into a properly posted area. However, an area that contains only packages received from radioactive material transportation that are properly labeled and in a non-degraded condition need not be posted as radiological area and radioactive material area until completion of the package receipt monitoring required by Section 7.7 above (10 CFR 835.604[c]).

9.14 RADIOACTIVE MATERIAL LABELING

9.14.1 Except as provided below, each item or container of radioactive material bears a durable and clearly visible label bearing the standard radiation warning trefoil and the words "Caution, Radioactive Material." The label provides 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. Radiation Protection procedures establish specific requirements for the information to be included on radioactive material labels. The design of acceptable radioactive material labels is authorized by the RPM consistent with the requirements of 10 CFR 835 (835.605).

9.14.2 Items and containers may be excepted from the radioactive material labeling requirements of Section 9.14 when (10 CFR 835.606[a]):

- Used, handled, or stored in areas posted and controlled as specified in this plan, and sufficient information is provided to permit individuals to take precautions to avoid or control exposures, or
- The quantity of radioactive material is less than one tenth of the values specified in Appendix E of 10 CFR 835 and less than 0.1 Ci; or
- Packaged, labeled, and marked in accordance with the regulations of DOT or DOE orders governing radioactive material transportation; or
- Inaccessible, or accessible only to individuals authorized to handle or use them or to work in the vicinity; or
- Installed in manufacturing, process, or other equipment, such as reactor components, piping, and tanks; or
- The radioactive material consists solely of nuclear weapons or their components

9.14.3 Radioactive material labels applied to sources may be excepted from the color specifications in 10 CFR 835.601(a).

9.14.4 Piles of rubble, soil, or similar materials are not normally considered to be "items or containers" and are therefore excepted from the labeling requirements.

10.0 RADIOLOGICAL PROTECTION RECORD KEEPING

10.1 CONTENT OF RADIATION PROTECTION PLAN RECORDS

10.1.1 The records of Radiation Protection program related activities are prepared, maintained, and dispositioned in accordance with contract requirements and applicable procedures. Records are maintained sufficient to document and evaluate compliance with 10 CFR 835 and with this plan. The records that are identified with a specific individual are readily available to that individual. All records required by this section will be retained until final disposition is authorized by DOE or transferred to DOE upon cessation of activities at the site that could cause exposure to individuals. Radiation Protection program records are sufficient to provide dose information necessary to complete the reports required by Section 11.0 of this plan, and include the following at a minimum (10 CFR 835.701, 702[c][1]–[2], 702[f], 702[h]):

- Records of doses received by all individuals for whom monitoring is conducted and doses received during planned special exposures, unplanned doses exceeding the monitoring thresholds of 10 CFR 835.402, *Individual Monitoring*, and authorized emergency exposures (10 CFR 835.702[a]–[b])
- Recording of the non-uniform equivalent dose to the skin is not required if the dose is less than one rem.
- Recording of internal dose (committed effective dose or committed equivalent dose) is not required for any monitoring result estimated to correspond to an individual receiving less than 10 mrem committed effective dose, provided that the bioassay or air monitoring result used to make the estimate is documented and maintained and that the unrecorded internal dose estimated for any individual in a year does not exceed the applicable internal dosimetry monitoring thresholds of 10 CFR 835.402(c).
- Results of monitoring used to assess the following quantities for external dose received during the year (10 CFR 835.702[c][3]):
  - The effective dose from external sources of radiation (equivalent dose to the whole body may be used as effective dose for external exposure)
  - The equivalent dose to the lens of the eye
  - The equivalent dose to the skin
  - The equivalent dose to the extremities
- The following information for internal dose resulting from intakes received during the year (10 CFR 835.702[c][4]):
  - Committed effective dose
  - Committed equivalent dose to any organ or tissue of concern
  - Identity of radionuclides

- The following quantities for the summation of the external and internal dose (10 CFR 835.702([c][5]):
  - Total effective dose in a year
  - For any organ or tissue assigned an internal dose during the year, the sum of the equivalent dose to the whole body from external exposures and the committed equivalent dose to that organ or tissue
  - Cumulative total effective dose
- The equivalent dose to the embryo/fetus of a declared pregnant worker (10 CFR 835.702[c][6])
- Documentation of all occupational doses received during the current year, except for doses resulting from planned special exposures and emergency exposures to demonstrate compliance with the limits for general employees in Section 5.1 above. If complete records documenting previous occupational dose during the year cannot be obtained, a written estimate signed by the individual may be accepted to demonstrate compliance (10 CFR 835.702[d]).
- For radiological workers whose occupational dose is monitored in accordance with 835.402, *Individual Monitoring*, reasonable efforts are made to obtain complete records of prior years' occupational internal and external doses (10 CFR 835.702[e])
- Data necessary to allow future verification or reassessment of the recorded doses (10 CFR 835.702[g])
- Results of individual, area, and contamination control monitoring for radiation and radioactive material, except for surface contamination monitoring of individuals exiting contamination, high contamination, or airborne radioactivity areas (10 CFR 835.703[a])]
- Results of monitoring used to determine individual occupational dose from external and internal sources (10 CFR 835.703[b])
- Results of monitoring for the release and control of material and equipment (10 CFR 835.703[c])
- Results of maintenance and calibration performed on instruments and equipment (10 CFR 835.703[d])
- Training records to demonstrate compliance with 10 CFR 835.901, *Radiation Safety Training* (10 CFR 835.704[a])
- Documentation of actions taken to maintain occupational exposures ALARA, including the formal plans and measures for applying the ALARA process to occupational exposure as well as facility design and control actions (10 CFR 835.704[b])
- The results of internal audits and other reviews of program content and implementation (10 CFR 835.704[c])
- Written declarations of pregnancy including the estimated date of conception and revocations of declarations of pregnancy (10 CFR 835.704[d])]

- Documentation of changes in equipment, techniques, and procedures used for monitoring (10 CFR 835.704[e])
- Records of sealed radioactive source control, inventory, and leak tests. (10 CFR 835.704[f])

10.2 RADIOLOGICAL UNITS

10.2.1 Unless otherwise specified, the required records will use the special radiological units including curies, rads, roentgen, rem, and multiples and subdivisions of these units. Other radiological units that have been specified and are allowable for Radiation Protection program records include:

- Units of disintegrations per minute per 100 square centimeters (dpm/100 cm^2) for measurements of radioactive surface contamination; and
- Multiples and subdivisions of DACs and DAC-hours for measurements of airborne radioactivity and individual exposure to airborne radioactivity

10.2.2 The International System (SI) radiological units (e.g., Becquerel, gray, and Sievert) may be used for purposes of calculations and may be provided parenthetically in required records as an aid to unit conversion (10 CFR 835.4).

11.0 REPORTS

11.1 Radiation exposures received at the facilities are reported to each individual annually and upon request by the affected individual consistent with the provisions of the Privacy Act (5 U.S.C. 552a). Upon request, FBP provides a dose report to any individual terminating employment with the project. Termination dose reports are provided as soon as the required data are available but not later than 90 days following termination. If requested, FBP provides a written dose estimate at the time of termination based on available information. All reports are made in writing and include the name of the site or facility, the name of the individual, the individual's social security number, employee number, or other unique identification number. All individual dose reports include the applicable exposure information specified in Section 10.1 (10 CFR 835.801[a]–[d]).

11.2 In addition, on any occasion in which FBP is required to report an individual's exposure as a result of a reportable occurrence to DOE, FBP will provide to the affected individual a report of his or her exposure associated with the reportable occurrence. Such reports will be transmitted to the affected individual on or before the date of the submittal of the report to DOE (10 CFR 835.801[e]).

11.3 FBP also submits an annual report of personnel monitoring information to the DOE Radiological Exposure Monitoring System (REMS).

12.0 TRAINING PROGRAM

12.1 RADIATION SAFETY TRAINING PROGRAM CONTENT

12.1.1 FBP's program for provision of radiation safety training has been developed to be consistent with the guidance provided in DOE-STD-1174-2013, *Radiation Protection Functional Area Qualification Standard*. Radiation safety training (which is required for unescorted access to controlled areas and before receiving occupational dose during access to controlled areas) includes the following topics to the extent appropriate to each individual's prior training, work assignments, and degree of exposure to potential radiological hazards, and commensurate with the hazards in the area and the required controls (10 CFR 835.901[a]–[c]):

- Risks of exposure to radiation and radioactive materials including prenatal radiation exposure
- Basic radiological fundamentals and radiation protection concepts
- Physical design features, administrative controls, limits, policies, procedures, alarms, and other measures implemented to manage doses and maintain doses ALARA including both routine and emergency actions
- Individual rights and responsibilities as related to the Radiation Protection program
- Individual responsibilities for implementing ALARA measures
- Individual exposure reports that may be requested

12.1.2 Each individual must demonstrate knowledge of the radiation safety topics above commensurate with the hazards in the area and required controls by successful completion of an examination and performance demonstrations before being permitted unescorted access to radiological areas and before performing unescorted assignments as a radiological worker.

12.2 USE OF ESCORTS IN LIEU OF TRAINING

Under certain circumstances, it may be convenient to provide an escort to some individuals instead of granting unescorted access. Such circumstances are established in Radiation Protection procedures. When an escort is provided in lieu of radiation safety training, the escort must have current radiation safety training, examinations, and performance demonstrations required for entry into the affected area and performance of the work. The escort must also ensure that the escorted individuals comply with the requirements of the Radiation Protection program (10 CFR 835.901[d]).

12.3 RETRAINING

Retraining is provided when there is a significant change to Radiation Protection policies and procedures that may affect the individual and at intervals not to exceed 24 months. This includes successful completion of an examination (10 CFR 835.901[e]). This time interval may be extended by a period not to exceed 30 days to accommodate scheduling needs (10 CFR 835.3[e]).

12.4 RADIOLOGICAL CONTROL TECHNICIANS AND SUPERVISORS

RCT and RP supervisor training is also provided to establish and verify competence and to maintain proficiency using the DOE core training material.

13.0 DESIGN AND CONTROL

13.1 PHYSICAL DESIGN FEATURES/ENGINEERED CONTROLS

13.1.1 In addition to meeting the radiation dose limits established in Section 5.0, FBP has instituted measures to control individual and collective radiation doses in controlled areas at levels that are ALARA through engineered and administrative controls. The ALARA process is implemented primarily through the use of physical design features including material confinement, ventilation, remote handling, and shielding. Administrative controls are employed only as supplemental methods to control radiation exposure (10 CFR 835.1001[a]).

13.1.2 Because the scope of the project includes the elimination of previously-used facilities and their confinement and ventilation systems, many of the design features used during the project will include short-term engineered controls such as temporary shielding, confinement, and ventilation systems. The application of the specific engineered controls to be used is determined by Radiation Protection personnel working in concert with project planning personnel and project management.

13.1.3 The scope of project work primarily involves D&D and remediation of existing facilities. However, since several new facilities are to be constructed, the following objectives apply to the design of new facilities or modification of existing facilities (10 CFR 835.1002):

- Optimization methods will be used to assure that public and occupational exposure is maintained ALARA in developing and justifying facility design and physical controls.
- The design objective for the public is a dose to the maximally exposed individual (MEI) of less than 1 mrem/year and a collective dose of less than 10 rem per year.
- A value of $6,000 per man-rem will be used for ALARA cost optimization purposes.
- The design objective for controlling personnel exposure from external sources of radiation in areas of continuous occupational occupancy (2,000 hours per year) is to maintain exposure levels below an average of 0.5 mrem/ hour and as far 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 are ALARA and will not exceed 20 percent of the applicable standards in (10 CFR 835.202).
- Regarding the control of airborne radioactive material, the design objective is 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 will normally be used.
- The design or modification of a facility and the selection of materials will include features that facilitate operations, maintenance, decontamination, and decommissioning.

13.2 ADMINISTRATIVE CONTROLS

13.2.1 Administrative controls are used to maintain radiation exposures ALARA, for specific activities where engineered controls are demonstrated to be impractical (10 CFR 835.1001[b]).

13.2.2 Administrative controls used to implement the ALARA process may include as appropriate for the planned activities administrative control levels (ACLs), performance goals, written procedures, and work authorizations.

13.2.3 DOE has established a complex-wide administrative control level of two rem TED per year, and FBP has a project ACL equal to or less than the DOE ACL. If determined to be effective in controlling individual or collective doses, FBP may establish project or work group-specific ACLs. The actual ACLs will be established by FBP management. Any instances in which planned work will result in an individual exceeding the ACL will require management approval.

13.2.4 FBP has also established annual ALARA performance goals for the project. Performance tracking mechanisms are used to track progress toward achievement of the goals and corrective action implemented as appropriate to correct adverse trends and control individual and collective doses. The ALARA performance goals may be revised as necessary to accommodate changes in the scope, unanticipated tasks, or radiological conditions.

13.2.5 The ALARA process inherently includes formal or informal cost/benefit analyses. The level of formality associated with these analyses depends on a number of factors including the expected radiation doses, the complexity of the hazards and controls, and the types of work to be performed. As the project progresses, the types of physical design controls and administrative controls used to implement the ALARA process and the balance between design features and administrative controls may change due to changes in the types of work being performed and the radiological hazards associated with that work. In all cases, the combination of physical design features and administrative controls will be adequate to ensure that individual radiation doses are within the occupational dose limits established in Section 05.0, *RADIATION DOSE LIMITS AND EXPOSURE CONTROL*, above and that exposure levels are ALARA (10 CFR 835.1003**).**

14.0 CONTAMINATION CONTROL

14.1 PRECAUTIONS AND MEASURES

14.1.1 Personnel performing radiological work take precautions and measures to control the spread of contamination from radiological areas into unaffected areas. This is accomplished by implementing engineered and administrative controls, and compliance with Radiation Protection personnel direction and RWP or work authorization requirements for the area. Additional measures that are implemented, as appropriate, during site activities in a radiological area to prevent the spread of contamination include the following:

- Surveys of equipment and personnel
- Decontamination of equipment and personnel (if needed)
- Covering controls and equipment (to the extent practicable) with a barrier to protect from potentially contaminated media at the site
- Provision of clean work surfaces (i.e., gravel or mats)
- Use of rubber tire equipment instead of tracked equipment (as applicable)
- Selection of equipment with low ground pressures to help prevent marring
- Implementation of good housekeeping practices during all activities
- Ensuring that all personnel have the proper training to don, wear, and doff personal protective equipment (PPE)
- Assisting personnel to inspect their PPE for rips, tears, holes, etc.
- Notification of an RCT if PPE becomes ripped or torn while in a radiological area
- Use of dust suppression and fixatives
- Use of air monitoring equipment
- Use of respiratory protection (as required)

14.1.2 Protective clothing is required for entry into areas in which removable contamination exists at levels exceeding the values in 10 CFR 835, Appendix D, *Surface Contamination Values,* or DOE-approved Authorized Limits. The type of clothing required is dependent upon the type and level of contamination anticipated and the individual's work assignment. The protective clothing requirements for radiological control are specified in the applicable written work authorization. The protective clothing requirements of the work authorization may be supplemented, but not reduced, by Radiation Protection personnel.

14.2 ENGINEERED AND ADMINISTRATIVE CONTROLS

14.2.1 When engineered and administrative controls (including access restrictions and the use of specific work practices designed to minimize airborne contamination or loss of contamination control) are insufficient to ensure that ARA posting limits will not be exceeded, respiratory protection is prescribed. Ventilation systems are used as described below.

14.2.2 In addition to general building ventilation systems, portable ventilation units may be employed for short duration jobs when the unprotected worker could potentially exceed 0.8 DAC-hours of exposure per shift. These local ventilation units are equipped with high-efficiency particulate air (HEPA) filters and are designed to recirculate and discharge room air at low velocities. Activities where these units may be employed are also approved by safety analysis and Nuclear Criticality Safety (NCS).

14.2.3 All personnel who use respiratory equipment are formally trained and qualified in accordance with 29 CFR 1910.134. Respirators for radiological exposure control are controlled, issued, and inspected according to applicable procedures.

15.0 RELEASE OF MATERIALS, EQUIPMENT, AND FACILITIES

15.1 GENERAL INFORMATION

15.1.1 Materials and equipment in contamination areas, high contamination areas, and airborne radioactivity areas are not released to a controlled area if the removable surface contamination on accessible surfaces exceed the values in 10 CFR 835 Appendix D or DOE-approved Authorized Limits or if prior use suggests that the removable surface contamination levels on inaccessible surfaces are likely to exceed the removable surface values in 10 CFR 835 Appendix D or DOE-approved Authorized Limits (10 CFR 835.1101[a]).

15.1.2 Material and equipment exceeding the removable surface contamination values specified in 10 CFR 835 Appendix D (or DOE-approved Authorized Limits) may be conditionally released for movement onsite from one radiological area for immediate placement in another radiological area only if appropriate monitoring is performed and appropriate controls for the movement are established and exercised (10 CFR 835.1101[b]).

15.1.3 Material and equipment with fixed contamination levels that exceed the total contamination values specified in 10 CFR 835 Appendix D (or DOE-approved Authorized Limits) may be released for use in controlled areas outside of radiological areas under the following conditions (10 CFR 835.1101[c]):

- Removable surface contamination levels are below the removable surface contamination values specified in 10 CFR 835 Appendix D (or DOE-approved Authorized Limits); and
- The material or equipment is routinely monitored and clearly marked or labeled to alert personnel of the contaminated status.

15.2 CONTROL OF AREAS

15.2.1 Appropriate controls are maintained and verified that prevent the inadvertent transfer of removable contamination to locations outside of radiological areas under normal operating conditions. Any area in which contamination levels exceed the values specified in 10 CFR 835 Appendix D (or DOE-approved Authorized Limits) is controlled in a manner commensurate with the physical and chemical characteristics of the contaminant, the radionuclides present, and the fixed and removable surface contamination levels (10 CFR 835.1102[a]–[b]).

- 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 10 CFR 835 Appendix D (or DOE-approved Authorized Limits) are controlled as follows when located outside of radiological areas (10 CFR 835.1102[c]):
    - The area is routinely monitored to ensure that the removable surface contamination level remains below the removable surface contamination values specified in 10 CFR 835 Appendix D (or DOE-approved Authorized Limits); and
    - The area is conspicuously marked to warn individuals of the contaminated status.

15.2.2 Protective clothing is required for entry to areas in which removable contamination exists at levels exceeding the removable surface contamination values specified in 10 CFR 835 Appendix D (or DOE-approved Authorized Limits). Individuals exiting contamination, high contamination, or airborne radioactivity areas are monitored (as appropriate) for the presence of surface contamination (10 CFR 835.1102[d]-[e]).

16.0 SEALED RADIOACTIVE SOURCE CONTROL

16.1 GENERAL INFORMATION

16.1.1 Sealed radioactive sources (including sources authorized for use in industrial radiography devices, moisture density devices, and instrument calibration sources) are subject to specific requirements and are procured, used, handled, and stored in accordance with Radiation Protection procedures in a manner commensurate with the hazards associated with the operations associated with the source (10 CFR 835.1201).

16.1.2 Any sealed radioactive source with an activity exceeding the applicable value specified in 10 CFR 835 Appendix E is considered to be an accountable sealed radioactive source. Each accountable sealed radioactive source is inventoried at intervals not to exceed six months. This time interval may be extended by a period not to exceed 30 days to accommodate scheduling needs (10 CFR 835.3[e]). The inventory is sufficient to establish the physical location of each accountable sealed radioactive source, verify the presence and adequacy of the associated postings and labels, and establish the adequacy of storage locations, containers, and devices (10 CFR 835.1202[a]).

16.1.3 Except for sealed radioactive sources consisting solely of gaseous radioactive material or tritium, each accountable sealed radioactive source is subject to a source leak test upon receipt, when damage is suspected, and at intervals not to exceed six months. This time interval may be extended by a period not to exceed 30 days to accommodate scheduling needs (10 CFR 835.3[e]). The leak test is performed using methods and equipment capable of detecting radioactive material leakage equal to or exceeding 0.005 μCi. If any source is found to be leaking, it will be controlled in a manner that minimizes the spread of radioactive contamination (e.g., disposal, repair, or containment) (10 CFR 835.1202[b], [e]).

16.1.4 The requirements for leak testing of accountable sealed radioactive sources do not apply to sources that have been removed from service. Such sources are stored in a controlled location, subject to periodic inventory as above, and are subject to source leak testing prior to being returned to service, transferred to another site, or disposed of as radioactive waste (10 CFR 835.1202[c]).

16.1.5 The requirements for accountable sealed radioactive source inventory and leak testing are not applicable if the source is located in an area that is unsafe for human entry or otherwise inaccessible (10 CFR 835.1202[d]).

17.0 RADIATION EXPOSURE CONTROL UNDER EMERGENCY CONDITIONS

17.1 GENERAL INFORMATION

17.1.1 Under certain emergency conditions, it may be necessary to authorize individuals to receive radiation doses in excess of the routine dose limits established in 10 CFR 835.202, *Occupational Dose Limits for General Employees*. Such doses may be authorized by designated FBP Emergency Management personnel after receiving approval from the PPPO Manager (or designee) under the following conditions (10 CFR 835.1302):

- Measures will be implemented to minimize the risk of injury to those individuals involved in rescue and recovery operations. FBP management will weigh actual and potential risks against the benefits to be gained. No individual will be required to perform a rescue action that might involve substantial personal risk.
- For each individual authorized to perform emergency actions likely to result in occupational doses exceeding the regulatory limits, FBP will provide radiation safety training in accordance with Section 12.1 above and a briefing (before the exposure) on the known or anticipated hazards associated with the operation.

17.2 GENERAL PROVISIONS

17.2.1 Upon completion of the emergency exposure and restoration of routine operating conditions, it may be desirable to allow the individuals who received authorized emergency exposures to return to their routine duties involving occupational radiation exposure.

17.2.2 FBP may permit a general employee who received authorized emergency exposures exceeding the regulatory dose limits to return to work in radiological areas during the current year under the following conditions (10 CFR 835.1301[a]):

- Approval is first obtained from FBP management and the PPPO Manager.
- The individual receives counseling from Radiation Protection and medical personnel regarding the consequences of receiving additional occupational exposure during the year.
- The affected employee agrees to return to radiological work.

17.2.3 All doses exceeding the limits in 10 CFR 835.202, *Occupational Dose Limits for General Employees,* will be recorded in the affected individual's occupational dose record (10 CFR 835.1301[b]).

17.2.4 When the conditions under which a dose was received in excess of the regulatory limits have been eliminated, FBP management will notify the PPPO Manager (10 CFR 835.1301[c]).

17.2.5 Operations that were suspended as a result of a dose in excess of the regulatory limits except those received as part of a planned special exposure will only be resumed with the approval of the PPPO Manager (10 CFR 835.1301[d]).

17.3 NUCLEAR ACCIDENT DOSIMETRY

17.3.1 Nuclear accident dosimetry is required where sufficient quantities of fissile material exist to potentially constitute a critical mass and where significant exposure of personnel to radiation from a nuclear accident is possible. Nuclear accident dosimetry includes fixed nuclear accident dosimeters (FNADs) and personal nuclear accident dosimeters (PNADs), whole body beta-gamma dosimeters, and screening techniques and analysis methods using activation products in the blood, hair, and other biological materials (10 CFR 835.1304).

17.3.2 Fixed nuclear accident dosimeter locations are selected on the basis of shielding, potential use of data for dose reconstruction efforts, and the ease of recovery in the event of a nuclear accident. A network of FNADs is situated around the site facilities. In the event of a criticality, the FNADs are processed.

17.3.3 Radiation Protection personnel in conjunction with NCS have defined the process buildings, the X-340 complex, X-705, X-700, X-720, X-710, X-345, X-744G, and XT-847 as areas where FNADs are located and where PNADs are required.

17.3.4 Personnel who are monitored routinely for external exposure using an issued OSL dosimeter may wear the OSL dosimeter in lieu of a personal nuclear accident dosimeter. Personnel (including visitors), who enter areas that are posted or otherwise require personnel nuclear accident dosimetry, must wear a PNAD if an OSL is not issued.

18.0 REFERENCES

A. 29 CFR 1910, *Occupational Safety and Health Standards*

B. 49 CFR 173, *Shippers – General Requirements for Shipments and Packagings*

C. DOE Contract # DE-AC30-10CC40017, *Portsmouth Remediation Services*

D. DOE-STD-1098-2017, *Radiological Control*

E. DOE-STD-1174-2013, *Radiation Protection Functional Area Qualification Standard*.

F. Title 10, *Code of Federal Regulations*, Part 835, *Occupational Radiation Protection*, U.S. Department of Energy, Washington, D.C.

Appendix A
REGULATORY REQUIREMENTS FLOW DOWN

Title 10, *Code of Federal Regulations*, Part 835, *Occupational Radiation Protection.*

Appendix B
CROSS-REFERENCE 10 CFR 835 TO PORTSMOUTH RADIATION PROTECTION PLAN
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10 CFR 835 Section	Plan Section	Implementing Procedures
835.2	5.1	FBP-RP-PRO-00025
835.3(a)–(b)	3.1	No implementing procedure needed (FBP-RP-PL-00002)
835.3(c)	N/A	FBP is the designated contractor
835.3(d)	3.1	FBP-RP-PRO-00025
835.3(e)	3.4, 12.3, 16.1	FBP-RP-PRO-00028 and FBP-QP-PRO-00009
835.4	10.2	Numerous implementing procedures
835.101(a)	3.1	No implementing procedure needed (FBP-RP-PL-00002)
835.101(b)	3.3	No implementing procedure needed (FBP-RP-PL-00002)
835.101(c)	3.1 & 3.7	No implementing procedure needed (FBP-RP-PL-00002)
835.101(d)	3.1	No implementing procedure needed (FBP-RP-PL-00002)
835.101(e)	3.1	No implementing procedure needed (FBP-RP-PL-00002)
835.101(f)	3.2	No implementing procedure needed (FBP-RP-PL-00002)
835.101(g)-(i)	3.3	No implementing procedure needed (FBP-RP-PL-00002)
835.102	3.4	No implementing procedure needed; assessed according to FBP-QP-PRO-00009
835.103	3.5	FBP-RP-PDD-00001, FBP-RP-PDD-00004, FBP-RP-PRO-00054, and FBP-RP-PRO-00108
835.104	3.6	FBP-NSE-PRO-00090
835.202–203	5.1	FBP-RP-PRO-00025
835.204	5.2	No implementing procedure needed; FBP does not intend to use planned special exposures during the course of the project
835.205	5.1	FBP-RP-PRO-00010
835.206(a)	5.1	FBP-RP-PRO-00025 and FBP-RP-PRO-00031
835.206(b)–(c)	5.3	FBP-RP-PRO-00031
835.207	5.1 & 5.4	FBP-RP-PRO-00025
835.208	5.1	FBP-RP-PRO-00025
835.209	5.5	FBP-RP-PRO-00009
835.401(a)	7.2	FBP-RP-PRO-00008, FBP-RP-PRO-00009, FBP-RP-PRO-00035, FBP-RP-PRO-00108, FBP-RP-PRO-00142, FBP-RP-PRO-00176, and FBP-RP-PRO-00179
835.401(b)	7.4.3	FBP-RP-PRO-00176, FBP-RP-PRO-00180 and FBP-RP-PRD-00001
835.402(a)	6.2	FBP-RP-PRO-00015, FBP-RP-PRO-00031, FBP-RP-PRO-00054, FBP-RP-PRO-00179, and FBP-RP-PRO-00180
835.402(b)	6.2	FBP-RP-PRO-00031, FBP-RP-PRO-00179 and FBP-RP-PRO-00193
835.402(c)	6.3	FBP-RP-PRO-00031, FBP-RP-PRO-00035, FBP-RP-PRO-00054 and FBP-RP-PRO-00180
835.402(d)	6.3	FBP-RP-PRO-00035
835.403(a)	7.1	FBP-RP-PRO-00009
835.403(b)	7.1	FBP-RP-PRO-00009

Appendix B
CROSS-REFERENCE 10 CFR 835 TO PORTSMOUTH RADIATION PROTECTION PLAN

10 CFR 835 Section	Plan Section	Implementing Procedures
835.405(a)	7.9	FBP-RP-PRO-00036
835.405(b)	7.10	FBP-RP-PRO-00036
835.405(c)	7.11	FBP-RP-PRO-00036
835.405(d)	7.8	FBP-RP-PRO-00036
835.405(e)	7.10	FBP-RP-PRO-00036
835.501(a)	8.1	FBP-RP-PRO-00022, FBP-RP-PRO-00054 and FBP-RP-PRO-00166
835.501(b)	8.1	FBP-RP-PRO-00022, FBP-RP-PRO-00054 and FBP-RP-PRO-00166
835.501(c)	8.1	FBP-RP-PRO-00022, FBP-RP-PRO-00054 and FBP-RP-PRO-00166
835.501(d)	8.1	FBP-RP-PRO-00008
835.501(e)	8.1	FBP-RP-PRO-00022 and FBP-RP-PRO-00054
835.502(a)-(b)	8.2	FBP-RP-PRO-00166
835.502(c)	8.3	Not applicable (There are no FBP VHRAs onsite).
835.502(d)	8.2	FBP-RP-PRO-00166
835.601(a)	9.1	FBP-RP-PRO-00022
835.601(b)	9.1	FBP-RP-PRO-00022
835.601(c)	9.2	There are currently no private residences or businesses associated with the project.
835.602(a)	9.3	FBP-RP-PRO-00022
835.602(b)	9.3	FBP-RP-PRO-00022
835.603(a)	9.4	FBP-RP-PRO-00022
835.603(b)	9.5	FBP-RP-PRO-00022
835.603(c)	9.6	Not applicable (There are no FBP VHRAs onsite).
835.603(d)	9.7	FBP-RP-PRO-00022
835.603(e)	9.8	FBP-RP-PRO-00022
835.603(f)	9.10	FBP-RP-PRO-00022
835.603(g)	9.12	FBP-RP-PRO-00022
835.604(a)–(c)	9.13	FBP-RP-PRO-00022
835.605	9.14	FBP-RP-PRO-00022, FBP-RP-PRO-00028 and FBP-RP-PRO-00054
835.606(a)	9.14	FBP-RP-PRO-00022 and FBP-RP-PRO-00028
835.606(b)	9.1	FBP-RP-PRO-00022 and FBP-RP-PRO-00028
835.701(a)–(b)	10.1	FBP-RP-PRO-00023
835.702(a)–(h)	10.1	FBP-RP-PRO-00023, FBP-RP-PRO-00025 and FBP-RP-PRO-00177
835.703(a)	10.1	FBP-RP-PRO-00009, FBP-RP-PRO-00177 and FBP-RP-PRD-00001
835.703(b)	10.1	FBP-RP-PRO-00023 and FBP-RP-PRO-00177
835.703(c)	10.1	FBP-RP-PRO-00177
835.703(d)	10.1	FBP-RP-PRD-00001

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CROSS-REFERENCE 10 CFR 835 TO PORTSMOUTH RADIATION PROTECTION PLAN
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10 CFR 835 Section	Plan Section	Implementing Procedures
835.704(a)	10.1	FBP-RP-PRO-00023, FBP-RP-PRD-00001
835.704(b)–(d)	10.1	FBP-RP-PRO-00023
835.704(e)	10.1	FBP-RP-PRO-00023
835.704(f)	10.1	FBP-RP-PRO-00028
835.801(a)–(e)	11.0	FBP-RP-PRO-00015, FBP-RP-PRO-00023 and FBP-RP-PRO-00180
835.901(a)–(c)	12.1	FBP-RP-PDD-00001 and FBP-RP-PRO-00054
835.901(d)	12.2	FBP-RP-PDD-00001 and FBP-RP-PRO-00054
835.901(e)	12.3	FBP-RP-PDD-00001 and FBP-RP-PRO-00054
835.1001(a)	13.1	FBP-RP-PRO-00008, FBP-RP-PRO-00011, FBP-RP-PRO-00014, FP-RP-PRO-00040, FBP-RP-PRO-00054 and FBP-RP-PRO-00108
835.1001(b)	13.2	FBP-RP-PRO-00006, FBP-RP-PRO-00008, FBP-RP-PRO-00014, FBP-RP-PRO-00040, FBP-RP-PRO-00054 and FBP-RP-PRO-00108
835.1002(a)-(d)	13.1	FBP-RP-PRO-00014
835.1003(a)–(b)	13.2	FBP-RP-PRO-00006, FBP-RP-PRO-00008, FBP-RP-PRO-00011, FBP-RP-PRO-00014, FBP-RP-PRO-00025 and FBP-RP-PRO-00032
835.1101(a)–(c)	15.0	FBP-RP-PRO-00054, FBP-RP-PRO-00176 and FBP-RP-PRO-00187
835.1102(a)–(c)	15.2	FBP-RP-PRO-00054, FBP-RP-PRO-00142 and FBP-RP-PRO-00187
835.1102(d)	15.2	FBP-RP-PRO-00054 and FBP-RP-PRO-00187
835.1102(e)	15.2	FBP-RP-PRO-00032, FBP-RP-PRO-00054 and FBP-RP-PRO-00187
835.1201	16.0	FBP-RP-PRO-00028
835.1202(a)–(c)	16.0	FBP-RP-PRO-00028
835.1202(d)	16.0	FBP-RP-PRO-00028
835.1202(e)	16.0	FBP-RP-PRO-00028
835.1301(a)	17.2	FBP-RP-PRO-00025 and FBP-RP-PRO-00165
835.1301(b)–(d)	17.2	FBP-RP-PRO-00025 and FBP-RP-PRO-00165
835.1302(a)–(d)	17.0	FBP-RP-PRO-00025 and FBP-RP-PRO-00165
835.1304(a)–(b)	17.3	FBP-RP-PRO-00015, FBP-RP-PRO-00165 and FBP-RP-PRO-00179
Appendix A	9.7	FBP-RP-PRO-00022
Appendix C	N/A	Not applicable to PORTS
Appendix D	9.8, 9.9, 9.10, 9.11, 14.1, 15.1, 15.2	FBP-RP-PRO-00022
Appendix E	9.12, 9.14, 16.1	FBP-RP-PRO-00022 and FBP-RP-PRO-000028

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COMPLIANCE STATUS
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10 CFR 835.1AA.4.01 STATUS: Full Compliance

REQUIREMENT STATEMENT:

To allow for an actual measured equilibrium concentration or a demonstrated equilibrium concentration, the values given in this table SHOULD be multiplied by the ratio (100% / actual %) or (100% / demonstrated %), respectively.

DESCRIPTION OF COMPLIANCE STATUS:

FBP administers a program that permits adjustment of an actual measured or demonstrated equilibrium concentration to be multiplied by the ratio (100% / actual %) or (100% / demonstrated %), respectively.

10 CFR 835.1AA.4.02 STATUS: Full Compliance

REQUIREMENT STATEMENT:

Alternatively, the DAC values for Rn-220 and Rn-222 MAY be replaced by 1 WL and 1/3 WL, respectively, for appropriate limiting of daughter concentrations.

DESCRIPTION OF COMPLIANCE STATUS:

FBP administers a program that permits the DAC values for Rn-220 and Rn-222 to be replaced by 1 WL and 1/3 WL respectively to limit their daughter concentrations.

10 CFR 835.1AC(e) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The DAC values are given for individual radionuclides. For known mixtures of radionuclides, determine the sum of the ratio of the observed concentration of a particular radionuclide and its corresponding DAC for all radionuclides in the mixture. If this sum exceeds unity (1), then the DAC has been exceeded. For unknown radionuclides, the most restrictive DAC (lowest value) for those isotopes not known to be absent SHALL be used.

DESCRIPTION OF COMPLIANCE STATUS:

FBP administers a program based on the DAC values given for individual radionuclides. For known mixtures of radionuclides, determine the sum of the ratio of the observed concentration of a particular radionuclide and its corresponding DAC for all radionuclides in the mixture. If this sum exceeds unity (1), then the DAC has been exceeded. For unknown radionuclides, the most restrictive DAC (lowest value) for those isotopes not known to be absent is used.

Appendix C
COMPLIANCE STATUS

10 CFR 835.1AD.1 STATUS: Full Compliance

REQUIREMENT STATEMENT:

Where surface contamination by both alpha- and beta-gamma-emitting nuclides exists, the limits established for alpha- and beta-gamma-emitting nuclides apply independently.

DESCRIPTION OF COMPLIANCE STATUS:

FBP applies the surface contamination limits independently for both alpha and beta gamma-emitting nuclides when they exist together.

10 CFR 835.1AD.3.01 STATUS: Full Compliance

REQUIREMENT STATEMENT:

The (surface radioactivity) levels MAY be averaged over one square meter provided the maximum surface activity in any area of 100 cm^2 is less than three times the value specified. For purposes of averaging, any square meter of surface SHALL be considered to be above the surface contamination value if:

(1) From measurements of a representative number of sections it is determined that the average contamination level exceeds the applicable value; or

(2) It is determined that the sum of the activity of all isolated spots or particles in any 100 cm^2 area exceeds three times the applicable value.

DESCRIPTION OF COMPLIANCE STATUS:

FBP operates the workplace monitoring program by averaging the surface radioactivity levels over one square meter provided the maximum surface activity in any area of 100 cm^2 is less than three times the value specified. For purposes of averaging, any square meter of surface is considered to be above the surface contamination guide if:

(1) From the measurements of a representative number of sections, it is determined that the average contamination level exceeds the applicable value; or

(2) It is determined that the sum of the activity of all isolated spots or particles in any 100 cm^2 area exceeds three times the applicable value.

10 CFR 835.1AD.3.02 STATUS: Full Compliance

REQUIREMENT STATEMENT:

The (surface radioactivity) levels MAY be averaged over one square meter provided the maximum surface activity in any area of 100 cm^2 is less than three times the value specified.

DESCRIPTION OF COMPLIANCE STATUS:

FBP averages surface radioactivity levels over one square meter provided the maximum surface activity in any area of 100 cm^2 is less than three times the value specified.

10 CFR 835.1AD.4.01 STATUS: Full Compliance

REQUIREMENT STATEMENT:

The amount of removable radioactive material per 100 cm^2 of surface area SHOULD be determined by swiping the area with dry filter or soft absorbent paper, applying moderate pressure, and then assessing the amount of radioactive material on the swipe with an appropriate instrument of known efficiency. (The use of dry material MAY not be appropriate for tritium.)

DESCRIPTION OF COMPLIANCE STATUS:

FBP determines the amount of removable radioactive material per 100 cm^2 of surface area by swiping the area with dry filter or soft absorbent paper, applying moderate pressure, and then assessing the amount of radioactive material on the swipe with an appropriate instrument of known efficiency. (The use of dry material MAY not be appropriate for tritium.)

10 CFR 835.1AD.4.02 STATUS: Full Compliance

REQUIREMENT STATEMENT:

When removable contamination on objects of surface area less than 100 cm^2 is determined, the activity per unit area SHALL be based on the actual area and the entire surface SHALL be wiped.

DESCRIPTION OF COMPLIANCE STATUS:

FBP determines removable contamination on objects of surface area less than 100 cm^2 by estimating the actual area and wiping the entire surface.

10 CFR 835.1AD.6 STATUS: Full Compliance

REQUIREMENT STATEMENT:

Tritium contamination may diffuse into the volume or matrix of materials. Evaluation of surface contamination SHALL consider the extent to which such contamination may migrate to the surface to ensure that the surface contamination value provided in this appendix is not exceeded. Once this contamination migrates to the surface, it may be removable, not fixed; therefore, a "Total" value does not apply.

DESCRIPTION OF COMPLIANCE:

FBP recognizes that tritium contamination may diffuse into the volume or matrix of materials. Evaluation of surface contamination considers the extent to which such contamination may migrate to the surface to ensure that the surface contamination value provided in this appendix is not exceeded. Once this contamination migrates to the surface, it may be removable, not fixed; therefore, a "Total" value does not apply.

10 CFR 835.3(a) STATUS: Full Compliance

REQUIREMENT STATEMENT:

No person or DOE personnel SHALL take or cause to be taken any action inconsistent with the requirements of:

(1) This part; or

(2) Any program, plan, schedule, or other process established by this part

DESCRIPTION OF COMPLIANCE STATUS:

FBP requires that all personnel may only take actions or cause actions to be taken that are consistent with the requirements of 10 CFR 835, or any program, plan, schedule, or other process established by 10 CFR 835.

10 CFR 835.3(b) STATUS: Full Compliance

REQUIREMENT STATEMENT:

With respect to a particular DOE activity, contractor management SHALL be responsible for compliance with the requirements of this part.

DESCRIPTION OF COMPLIANCE STATUS:

With respect to all DOE activities conducted under the Management and Integration Contract, FBP management is responsible for compliance with the requirements of 10 CFR 835.

10 CFR 835.3(c) STATUS: Not Applicable

REQUIREMENT STATEMENT:

Where there is no contractor for a DOE activity, DOE SHALL ensure implementation of and compliance with the requirements of this part.

DESCRIPTION OF COMPLIANCE STATUS:

This requirement is not applicable to FBP; it is directly applicable to DOE.

10 CFR 835.3(d) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Nothing in this part SHALL be construed as limiting actions that may be necessary to protect health and safety.

DESCRIPTION OF COMPLIANCE STATUS:

FBP does not construe the requirements in 10 CFR 835 as limiting any actions that are necessary to protect health and safety.

10 CFR 835.3(e) STATUS: Full Compliance

REQUIREMENT STATEMENT:

For those activities that are required by 835.102, 835.901(e), 835.1202(a), and 835.1202(b), the time interval to conduct these activities may be extended by a period not to exceed 30 days to accommodate scheduling needs.

DESCRIPTION OF COMPLIANCE STATUS:

FBP may extend the time interval to conduct the activities required by 835.102, 835.901(e), 835.1202(a), and 835.1202(b) by a period not to exceed 30 days to accommodate scheduling needs.

10 CFR 835.4 STATUS: Full Compliance

REQUIREMENT STATEMENT:

Unless otherwise specified, the quantities used in the records required by this part SHALL be clearly indicated in special units of curie, rad, roentgen, or rem, including multiples and subdivisions of these units, or other conventional units, such as dpm, dpm/100 cm^2, or mass units. The SI units, Becquerel (Bq), gray (Gy), and Sievert (Sv) may be provided parenthetically in this part for reference with scientific standards.

DESCRIPTION OF COMPLIANCE STATUS:

FBP records required by 10 CFR 835 will be maintained in the special units of curie, rad, roentgen, rem, or dpm including multiples and subdivisions of these units. The SI units, Becquerel (Bq), gray (Gy), and Sievert (Sv) may be provided parenthetically for reference with scientific standards.

10 CFR 835.101(a) STATUS: Full Compliance

REQUIREMENT STATEMENT:

A DOE activity SHALL be conducted in compliance with a documented Radiation Protection plan as approved by the DOE.

DESCRIPTION OF COMPLIANCE STATUS:

All FBP activities performed under contract to DOE are conducted in compliance with this radiation protection program (RPP), approved by DOE.

10 CFR 835.101(b) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The DOE MAY direct or make modifications to a Radiation Protection plan.

DESCRIPTION OF COMPLIANCE STATUS:

FBP has incorporated any changes made by DOE.

10 CFR 835.101(c) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The content of each Radiation Protection Program SHALL be commensurate with the nature of the activities performed and SHALL include formal plans and measures for applying the as low as reasonably achievable (ALARA) process to occupational exposure.

DESCRIPTION OF COMPLIANCE STATUS:

The FBP Radiation Protection Plan is commensurate with the activities performed under the contract and includes formal plans and measures for applying the as low as reasonably achievable (ALARA) process to occupational exposure.

10 CFR 835.101(d).01 STATUS: Full Compliance

REQUIREMENT STATEMENT:

The Radiation Protection plan SHALL specify the existing and/or anticipated operational tasks that are intended to be within the scope of the Radiation Protection plan.

DESCRIPTION OF COMPLIANCE STATUS:

The FBP Radiation Protection plan specifies the existing and/or anticipated operational tasks that are intended to be within the scope of the Radiation Protection plan.

10 CFR 835.101(d).02 STATUS: Full Compliance

REQUIREMENT STATEMENT:

Except as provided in §835.101(h), any task outside the scope of a Radiation Protection plan SHALL not be initiated until an update of the Radiation Protection plan is approved by DOE.

DESCRIPTION OF COMPLIANCE STATUS:

FBP performs no tasks outside the scope of the Radiation Protection plan until an update of the Radiation Protection plan is approved by DOE, except under conditions defined in 10 CFR 835.101(h).

10 CFR 835.101(e) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The content of the Radiation Protection plan SHALL address, but SHALL not necessarily be limited to, each requirement in this part.

DESCRIPTION OF COMPLIANCE STATUS:

The FBP Radiation Protection plan addresses all applicable requirements in 10 CFR 835.

10 CFR 835.101(f).01 STATUS: Full Compliance

REQUIREMENT STATEMENT:

The Radiation Protection plan SHALL include plans, schedules, and other measures for achieving compliance with regulations of this part.

DESCRIPTION OF COMPLIANCE STATUS:

The Radiation Protection plan is in compliance with the regulations of 10 CFR 835.

10 CFR 835.101 (f).02 STATUS: Full Compliance

REQUIREMENT STATEMENT:

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.

DESCRIPTION OF COMPLIANCE STATUS:

With the exception of postings as discussed in section 5, FBP is in compliance with the amendments to 10 CFR 835 published on June 8, 2007. Reposting will be completed by November 15, 2012, at which time a separate letter of completion/compliance and a request to remove the existing exemption will be submitted to DOE.

10 CFR 835.101(g)(1) STATUS: Full Compliance

REQUIREMENT STATEMENT:

An update of the Radiation Protection plan SHALL be submitted to DOE whenever a change or an addition to the Radiation Protection plan is made.

DESCRIPTION OF COMPLIANCE STATUS:

FBP will submit an update of the Radiation Protection plan to DOE whenever a change or an addition to the Radiation Protection plan is made.

10 CFR 835.101(g)(2) STATUS: Full Compliance

REQUIREMENT STATEMENT:

An update of the Radiation Protection plan SHALL be submitted to DOE:

Prior to the initiation of a task not within the scope of the RPP; or

DESCRIPTION OF COMPLIANCE STATUS:

FBP will submit an update of the Radiation Protection plan to DOE prior to the initiation of any task outside the scope of the approved Radiation Protection plan.

10 CFR 835.101(g)(3) STATUS: Full Compliance

REQUIREMENT STATEMENT:

An update of the Radiation Protection plan SHALL be submitted to DOE:

Within 180 days of the effective date of any modifications to 10 CFR 835.

DESCRIPTION OF COMPLIANCE STATUS:

FBP will submit an update of the Radiation Protection plan to DOE within 180 days of the effective date of any modifications to 10 CFR 835.

10 CFR 835.101(h).01 STATUS: Full Compliance

REQUIREMENT STATEMENT:

Changes, additions, or updates to the Radiation Protection plan MAY become effective without prior Department approval only if the changes do not decrease the effectiveness of the Radiation Protection plan and the Radiation Protection plan, as changed, continues to meet the requirements of this part.

DESCRIPTION OF COMPLIANCE STATUS:

FBP will implement changes, additions, or updates to the Radiation Protection plan without prior Department approval only if the changes do not decrease the effectiveness of the Radiation Protection plan and the Radiation Protection plan, as changed, continues to meet the requirements of 10 CFR 835.

10 CFR 835.101(h).02 STATUS: Full Compliance

REQUIREMENT STATEMENT:

Proposed changes that decrease the effectiveness of the Radiation Protection plan SHALL not be implemented without submittal to and approval by the Department.

DESCRIPTION OF COMPLIANCE STATUS:

FBP will not implement proposed changes to the Radiation Protection plan that decrease the effectiveness of the Radiation Protection plan without submittal to and approval by the Department.

10 CFR 835.101(i) STATUS: Full Compliance

REQUIREMENT STATEMENT:

An initial Radiation Protection plan or an update SHALL be considered approved 180 days after its submission unless rejected by DOE at an earlier date.

DESCRIPTION OF COMPLIANCE STATUS:

FBP considers the Radiation Protection plan as approved 180 days following submission to DOE unless rejected by DOE at an earlier date.

10 CFR 835.102 STATUS: Full Compliance

REQUIREMENT STATEMENT:

Internal audits of the Radiation Protection plan, including examination of program content and implementation, shall be conducted through a process that ensures that all functional elements are reviewed no less frequently than every 36 months.

DESCRIPTION OF COMPLIANCE STATUS:

FBP conducts internal audits of all functional elements of the Radiation Protection plan every 36 months, including reviews of program content and implementation.

10 CFR 835.103 STATUS: Full Compliance

REQUIREMENT STATEMENT:

Individuals responsible for developing and implementing measures necessary for ensuring compliance with the requirements of this part SHALL have the appropriate education, training, and skills to discharge these responsibilities.

DESCRIPTION OF COMPLIANCE STATUS:

FBP ensures that those individuals responsible for developing and implementing measures necessary for ensuring compliance have the appropriate education, training, and skills.

10 CFR 835.104 STATUS: Full Compliance

REQUIREMENT STATEMENT:

Written procedures SHALL be developed and implemented as necessary to ensure compliance with this part, commensurate with the radiological hazards created by the activity and consistent with the education, training, and skills of the individuals exposed to those hazards.

DESCRIPTION OF COMPLIANCE STATUS:

FBP has developed and implemented written procedures as necessary to ensure compliance with 10 CFR 835, commensurate with the radiological hazards created by the activity and consistent with the education, training, and skills of the individuals exposed to the hazards.

10 CFR 835.202(a)(1) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Except for planned special exposures conducted consistent with §835.204 and emergency exposures authorized in accordance with §835.1302, the occupational dose received by general employees shall be controlled such that the following limits are not exceeded in a year:

A total effective dose of 5 rem (0.05 Sievert)

DESCRIPTION OF COMPLIANCE STATUS:

FBP conducts DOE activities so that the total effective dose of 5 rem to general employees is not exceeded, unless emergency exposure situations under §835.1302 are invoked.

10 CFR 835.202(a)(2) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Except for planned special exposures conducted consistent with §835.204 and emergency exposures authorized in accordance with §835.1302, the occupational dose received by general employees shall be controlled such that the following limits are not exceeded in a year:

The sum of the dose to the whole body for external exposures and the committed equivalent dose to any organ or tissue other than the skin or the lens of the eye of 50 rem (0.5 Sievert).

DESCRIPTION OF COMPLIANCE STATUS:

FBP controls the occupational exposure to general employees resulting from DOE activities (other than emergency exposure situations under §835.1302) such that the sum of the dose to the whole body for external exposures and the committed equivalent dose to any organ or tissue other than the skin or the lens of the eye is less than 50 rem.

10 CFR 835.202(a)(3) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Except for planned special exposures conducted consistent with §835.204 and emergency exposures authorized in accordance with §835.1302, the occupational dose received by general employees shall be controlled such that the following limits are not exceeded in a year:

An equivalent dose to the lens of the eye of 15 rem (0.15 Sievert); and

DESCRIPTION OF COMPLIANCE STATUS:

FBP controls the occupational dose to general employees resulting from DOE activities (other than emergency exposure situations under §835.1302) such that the equivalent dose to the lens of the eye of 15 rem is not exceeded.

10 CFR 835.202(a)(4) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Except for planned special exposures conducted consistent with §835.204 and emergency exposures authorized in accordance with §835.1302, the occupational dose received by general employees shall be controlled such that the following limits are not exceeded in a year:

The sum of the equivalent dose to the skin or to any extremity for external exposures and the committed equivalent dose to the skin or to any extremity of 50 rem (0.5 Sv).

DESCRIPTION OF COMPLIANCE STATUS:

FBP controls the occupational dose to general employees resulting from DOE activities (other than emergency exposure situations under 835.1302) such that the sum of the equivalent dose to the skin or to any extremity for external exposures and the committed equivalent dose to the skin or to any extremity of 50 rem is not exceeded.

10 CFR 835.202(b) STATUS: Full Compliance

REQUIREMENT STATEMENT:

All occupational doses received during the current year, except doses resulting from planned special exposures conducted in compliance with §835.204 and emergency exposures authorized in accordance with §835.1302, SHALL be included when demonstrating compliance with §835.202(a) and §835.207.

DESCRIPTION OF COMPLIANCE STATUS:

FBP includes all occupational doses received during the current year, except doses from emergency exposures authorized in accordance with §835.1302, when demonstrating compliance with §§835.202(a) and 835.207.

10 CFR 835.202(c) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Doses from background, therapeutic and diagnostic medical radiation, and participation as a subject in medical research programs SHALL not be included in dose records or in the assessment of compliance with the occupational exposure limits.

DESCRIPTION OF COMPLIANCE STATUS:

FBP does not include doses from background, therapeutic and diagnostic medical radiation, and participation as a subject in medical research programs in dose records or in the assessment of compliance with the occupational exposure limits.

10 CFR 835.203(a) STATUS: Full Compliance

REQUIREMENT STATEMENT:

(a)The total effective dose during a year SHALL be determined by summing the effective dose from external exposures and the committed effective dose from intakes during the year.

DESCRIPTION OF COMPLIANCE STATUS:

FBP determines the total effective dose during a year by summing the effective dose from external exposures and the committed effective dose from intakes during the year.

10 CFR 835.203(b) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Determinations of the effective dose SHALL be made using the radiation and tissue weighting factor values provided in §835.2.

DESCRIPTION OF COMPLIANCE STATUS:

FBP determines the effective dose using the radiation and tissue weighting factor values provided in §835.2.

10 CFR 835.204 STATUS: Not Applicable

REQUIREMENT STATEMENT:

A planned special exposure MAY 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). . . .

DESCRIPTION OF COMPLIANCE STATUS:

FBP does not intend to use planned special exposures during the course of the project.

10 CFR 835.205(a) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Non-uniform exposures of the skin from x-rays, beta radiation, and/or radioactive material on the skin ARE TO BE assessed as specified in this section.

DESCRIPTION OF COMPLIANCE STATUS:

FBP assesses non-uniform exposures of the skin from x rays, beta radiation, and/or radioactive material on the skin as specified in 10 CFR 835.205.

10 CFR 835.205(b)(1) STATUS: Full Compliance

REQUIREMENT STATEMENT:

For purposes of demonstrating compliance with §835.202 (a)(4), assessments SHALL be conducted as follows:

Area of skin irradiated is 100 cm^2 or more. The non-uniform equivalent dose received during the year SHALL be averaged over the 100 cm^2 of the skin receiving the maximum dose, added to any uniform equivalent dose also received by the skin, and recorded as the equivalent dose to any extremity or skin for the year.

DESCRIPTION OF COMPLIANCE STATUS:

For purposes of demonstrating compliance with §835.202(a)(4), FBP assessments are conducted as follows:

If the area of skin irradiated is 100 cm^2 or more, then the non-uniform equivalent dose received during the year is averaged over the 100 cm^2 of the skin receiving the maximum dose, added to any uniform equivalent dose also received by the skin, and recorded as the equivalent dose to any extremity or skin for the year.

10 CFR 835.205(b)(2) STATUS: Full Compliance

REQUIREMENT STATEMENT:

For purposes of demonstrating compliance with §835.202 (a)(4), assessments SHALL be conducted as follows:

Area of skin irradiated is 10 cm^2 or more, but is less than 100 cm^2. The non-uniform equivalent dose (H) to the irradiated area received during the year SHALL be added to any uniform equivalent dose also received by the skin and recorded as the equivalent dose to any extremity or skin for the year. H is the equivalent dose averaged over the 1 cm^2 of skin receiving the maximum absorbed dose, D, reduced by the fraction f, which is the irradiated area in cm^2 divided by 100 cm^2 (i.e., H=fD). In no case SHALL a value of f less than 0.1 be used.

DESCRIPTION OF COMPLIANCE STATUS:

For demonstrating compliance with §835.202(a)(4), FBP dose assessments are conducted as follows:

If the area of skin irradiated is 10 cm^2 or more, but is less than 100 cm^2, then the non-uniform equivalent dose (H) to the irradiated area received during the year is added to any uniform equivalent dose also received by the skin and recorded as the equivalent dose to any extremity or skin for the year. H is the equivalent dose averaged over the 1 cm^2 of skin receiving the maximum absorbed dose, D, reduced by the fraction f, which is the irradiated area in cm^2 divided by 100 cm^2 (i.e., H=fD). The minimum value of f used will be 0.1.

10 CFR 835.205(b)(3) STATUS: Full Compliance

REQUIREMENT STATEMENT:

For purposes of demonstrating compliance with 835.202(a)(4), assessments SHALL be conducted as follows:

Area of skin irradiated is less than 10 cm^2. The non-uniform equivalent dose SHALL be averaged over the 1 cm^2 of skin receiving the maximum dose. This equivalent dose SHALL:

Be recorded in the individual's occupational exposure history as a special entry; and

Not be added to any other equivalent dose to any extremity or skin for the year.

DESCRIPTION OF COMPLIANCE STATUS:

For purposes of demonstrating compliance with 835.202(a)(4), FBP dose assessments are conducted as follows:

If the area of skin irradiated is less than 10 cm^2, then the non-uniform equivalent dose is averaged over the 1 cm^2 of skin receiving the maximum dose. This equivalent dose is recorded in the individual's occupational exposure history as a special entry and will not be added to any other equivalent dose to any extremity or skin for the year.

10 CFR 835.206(a) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The equivalent dose limit for the embryo/fetus from the period of conception to birth, as a result of occupational exposure of a declared pregnant worker, is 0.5 rem (0.005 Sievert).

DESCRIPTION OF COMPLIANCE STATUS:

The FBP equivalent dose limit for the embryo/fetus from the period of conception to birth, as a result of occupational exposure of a declared pregnant worker, is 500 mrem.

10 CFR 835.206(b) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Substantial variation above a uniform exposure rate that would satisfy the limits provided in §835.206(a) SHALL be avoided.

DESCRIPTION OF COMPLIANCE STATUS:

FBP avoids substantial variations to the exposure rate to satisfy the limits provided in §835.206(a).

10 CFR 835.206(c) STATUS: Full Compliance

REQUIREMENT STATEMENT:

If the equivalent dose to the embryo/fetus is determined to have already exceeded 0.5 rem (0.005 Sievert) by the time a worker declares her pregnancy, the declared pregnant worker SHALL not be assigned to tasks where additional occupational exposure is likely during the remaining gestation period.

DESCRIPTION OF COMPLIANCE STATUS:

If the equivalent dose to the embryo/fetus is determined to have already exceeded 0.5 rem by the time a worker declares her pregnancy, the declared pregnant worker is not assigned to tasks where additional occupational exposure is likely during the remaining gestation period.

10 CFR 835.207 STATUS: Full Compliance

REQUIREMENT STATEMENT:

The dose limits for minors occupationally exposed to radiation and/or radioactive materials at a DOE activity are 0.1 rem (0.001 Sievert) total effective dose in a year and 10 percent of the occupational dose limits specified at §835.202(a)(3) and (a)(4).

DESCRIPTION OF COMPLIANCE STATUS:

FBP does not occupationally expose any minor to radiation and/or radioactive material at an FBP-operated site or facility such that the minor exceeds a total effective dose of 0.1 rem in a year or 10 percent of the occupational dose limits specified at §835.202(a)(3) and (a)(4).

10 CFR 835.208 STATUS: Full Compliance

REQUIREMENT STATEMENT:

The total effective dose limit for members of the public exposed to radiation and/or radioactive materials during access to a controlled area is 0.1 rem (0.001 Sievert) in a year.

DESCRIPTION OF COMPLIANCE STATUS:

FBP does not expose any member of the public to radiation and/or radioactive material during access to a controlled area at an FBP-operated site or facility such that the total effective dose exceeds 0.1 rem in a year.

10 CFR 835.209(a) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The derived air concentration (DAC) values given in appendices A and C of this part SHALL be used in the control of occupational exposures to airborne radioactive material.

DESCRIPTION OF COMPLIANCE STATUS:

The derived air concentration (DAC) values given in Appendix A of 10 CFR 835 are used in the control of occupational exposures to airborne radioactive material.

10 CFR 835.209(b) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The estimation of internal dose SHALL 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.

DESCRIPTION OF COMPLIANCE STATUS:

FBP bases its estimation of internal dose on bioassay data, rather than air concentration values, unless bioassay data are unavailable or inadequate, or internal dose estimates based on air concentration values are demonstrated to be as or more accurate.

10 CFR 835.401(a)(1) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Monitoring of individuals and areas SHALL be performed to:

Demonstrate compliance with the regulations in this part.

DESCRIPTION OF COMPLIANCE STATUS:

FBP monitors individuals and areas to demonstrate compliance with the regulations in 10 CFR 835.

10 CFR 835.401(a)(2) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Monitoring of individuals and areas SHALL be performed to:

Document radiological conditions

DESCRIPTION OF COMPLIANCE STATUS:

FBP monitors individuals and areas to document radiological conditions.

10 CFR 835.401(a)(3) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Monitoring of individuals and areas SHALL be performed to:

Detect changes in radiological conditions.

DESCRIPTION OF COMPLIANCE STATUS:

FBP monitors individuals and areas to detect changes in radiological conditions.

10 CFR 835.401(a)(4) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Monitoring of individuals and area SHALL be performed to:

Detect the gradual buildup of radioactive material.

DESCRIPTION OF COMPLIANCE STATUS:

FBP monitors individuals and areas to detect the gradual buildup of radioactive material.

10 CFR 835.401(a)(5) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Monitoring of individuals and areas SHALL be performed to:

Verify the effectiveness of engineered and administrative controls in containing radioactive material and reducing radiation exposure.

DESCRIPTION OF COMPLIANCE STATUS:

FBP monitors individuals and areas to verify the effectiveness of engineered and administrative controls in containing radioactive material and reducing radiation exposure.

10 CFR 835.401(a)(6) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Monitoring of individuals and areas SHALL be performed to:

Identify and control potential sources of individual exposure to radiation and/or radioactive material.

DESCRIPTION OF COMPLIANCE STATUS:

FBP performs monitoring of individuals and areas, as necessary, to identify and control potential sources of individual exposure to radiation and/or radioactive material.

10 CFR 835.401(b)(1) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Instruments and equipment used for monitoring SHALL be:

Periodically maintained and calibrated on an established frequency

DESCRIPTION OF COMPLIANCE STATUS:

FBP maintains and calibrates instruments and equipment used for monitoring on an established frequency.

10 CFR 835.401(b)(2) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Instruments and equipment used for monitoring SHALL be:

Appropriate for the type(s), levels, and energies of the radiation(s) encountered.

DESCRIPTION OF COMPLIANCE STATUS:

FBP uses instruments and equipment for monitoring that are appropriate for the types, levels, and energies of the radiation encountered.

10 CFR 835.401(b)(3) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Instruments and equipment used for monitoring SHALL be:

Appropriate for existing environmental conditions.

DESCRIPTION OF COMPLIANCE STATUS:

FBP uses instruments and equipment for monitoring that are appropriate for existing environmental conditions.

10 CFR 835.401(b)(4) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Instruments and equipment used for monitoring SHALL be:

Routinely tested for operability.

DESCRIPTION OF COMPLIANCE STATUS:

FBP uses instruments and equipment for monitoring that are routinely tested for operability.

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10 CFR 835.402(a)(1)(i) STATUS: Full Compliance

REQUIREMENT STATEMENT:

For the purpose of monitoring individual exposures to external radiation, personnel dosimeters SHALL be provided to and used by:

Radiological workers who, under typical conditions, are likely to receive one or more of the following:

An effective dose of 0.1 rem (0.001 Sievert) or more in one year.

DESCRIPTION OF COMPLIANCE STATUS:

For the purpose of monitoring individual exposures to external radiation, FBP provides and requires the use of personnel dosimeters by radiological workers who, under typical conditions, are likely to receive an effective dose of 100 mrem or more in one year.

10 CFR 835.402(a)(1)(ii) STATUS: Full Compliance

REQUIREMENT STATEMENT:

For the purpose of monitoring individual exposures to external radiation, personnel dosimeters SHALL be provided to and used by:

Radiological workers who, under typical conditions, are likely to receive one or more of the following:

An equivalent dose to the skin or to any extremity of 5 rems (0.05 Sievert) or more in a year.

DESCRIPTION OF COMPLIANCE STATUS:

For the purpose of monitoring individual exposures to external radiation, FBP provides and requires the use of personnel dosimeters by radiological workers who, under typical conditions, are likely to receive an equivalent dose to the skin or to any extremity of 5 rem or more in a year.

10 CFR 835.402(a)(1)(iii) STATUS: Full Compliance

REQUIREMENT STATEMENT:

For the purpose of monitoring individual exposures to external radiation, personnel dosimeters SHALL be provided to and used by:

Radiological workers who, under typical conditions, are likely to receive one or more of the following:

An equivalent dose to the lens of the eye of 1.5 rems (0.015 Sievert) or more in a year.

DESCRIPTION OF COMPLIANCE STATUS:

For the purpose of monitoring individual exposures to external radiation, FBP provides and requires the use of personnel dosimeters by radiological workers who, under typical conditions, are likely to receive an equivalent dose to the lens of the eye of 1.5 rem or more in a year.

10 CFR 835.402(a)(2) STATUS: Full Compliance

REQUIREMENT STATEMENT:

For the purpose of monitoring individual exposures to external radiation, personnel dosimeters SHALL 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 percent of the applicable limit in §835.206(a).

DESCRIPTION OF COMPLIANCE STATUS:

For the purpose of monitoring individual exposures to external radiation, FBP provides and requires the use of personnel dosimeters by declared pregnant workers who are likely to receive from external sources an equivalent dose to the embryo/fetus in excess of 10 percent of the applicable limit in §835.206(a) (500 mrem).

10 CFR 835.402(a)(3) STATUS: Full Compliance

REQUIREMENT STATEMENT:

For the purpose of monitoring individual exposures to external radiation, personnel dosimeters SHALL be provided to and used by:

Occupationally exposed minors likely to receive a dose in excess of 50 percent of the applicable limits at §835.207 in a year from external sources.

DESCRIPTION OF COMPLIANCE STATUS:

For the purpose of monitoring individual exposures to external radiation, FBP provides and requires the use of personnel dosimeters by occupationally exposed minors likely to receive, in 1 year, from external sources, a dose in excess of 50 percent of the applicable limits in §835.207.

10 CFR 835.402(a)(4) STATUS: Full Compliance

REQUIREMENT STATEMENT:

For the purpose of monitoring individual exposures to external radiation, personnel dosimeters SHALL 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.

DESCRIPTION OF COMPLIANCE STATUS:

For the purpose of monitoring individual exposures to external radiation, FBP provides and requires the use of personnel dosimeters 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.

10 CFR 835.402(a)(5) STATUS: Full Compliance

REQUIREMENT STATEMENT:

For the purpose of monitoring individual exposures to external radiation, personnel dosimeters SHALL be provided to and used by:

Individuals entering a high or very high radiation area.

DESCRIPTION OF COMPLIANCE STATUS:

For the purpose of monitoring individual exposures to external radiation, FBP provides and requires the use of personnel dosimeters by individuals entering any high or very high radiation area.

10 CFR 835.402(b)(1) STATUS: Full Compliance

REQUIREMENT STATEMENT:

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 and shall be:

Accredited, or excepted from accreditation, in accordance with the DOE Laboratory Accreditation Program for Personnel Dosimetry.

DESCRIPTION OF COMPLIANCE STATUS:

The FBP personnel external dosimetry program is adequate to demonstrate compliance with §835.402(a). FBP gained DOELAP accreditation for external dosimetry which is subcontracted to Landauer. FBP historically subcontracted external dosimetry services to the UT-Battelle in Oak Ridge TN.

10 CFR 835.402(b)(2) STATUS: Not Applicable

REQUIREMENT STATEMENT:

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 and shall be:

Determined by the Secretarial Officer responsible for environment, safety and health matters to have performance substantially equivalent to that of programs accredited under the DOE Laboratory Accreditation Program for Personnel Dosimetry

DESCRIPTION OF COMPLIANCE STATUS:

The FBP personnel external dosimetry program is adequate to demonstrate compliance with §835.402 (a) and the program conforms to the requirements of the DOE Laboratory Accreditation Program for Personnel Dosimetry.

10 CFR 835.402(c)(1) STATUS: Full Compliance

REQUIREMENT STATEMENT:

For the purpose of monitoring individual exposures to internal radiation, internal dosimetry programs (including routine bioassay programs) SHALL 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

DESCRIPTION OF COMPLIANCE STATUS:

For the purpose of monitoring individual exposures to internal radiation, FBP uses an internal dosimetry program (including routine bioassays) for radiological workers who, under typical conditions, are likely to receive 100 mrem or more committed effective dose from all occupational radionuclide intakes in a year.

10 CFR 835.402(c)(2) STATUS: Full Compliance

REQUIREMENT STATEMENT:

For the purpose of monitoring individual exposures to internal radiation, internal dosimetry programs (including routine bioassay programs) SHALL be conducted for:

Declared pregnant workers likely to receive an intake or intakes resulting in an equivalent dose to the embryo/fetus in excess of 10 percent of the limit stated in §835.206(a).

DESCRIPTION OF COMPLIANCE STATUS:

For the purpose of monitoring individual exposures to internal radiation, FBP provides an internal dosimetry program (including routine bioassay program) for declared pregnant workers likely to receive an intake or intakes resulting in an equivalent dose to the embryo/fetus in excess of 10 percent of the limit stated in §835.206(a) (500 mrem).

10 CFR 835.402(c)(3) STATUS: Full Compliance

REQUIREMENT STATEMENT:

For the purpose of monitoring individual exposures to internal radiation, internal dosimetry programs (including routine bioassay programs) SHALL be conducted for:

Occupationally exposed minors who are likely to receive a dose in excess of 50 percent of the applicable limit stated at §835.207 from all radionuclide intakes in a year; or

DESCRIPTION OF COMPLIANCE STATUS:

For the purpose of monitoring individual exposures to internal radiation, FBP conducts an internal dosimetry program (including routine bioassay program) for minors who are likely to receive, in 1 year, an intake or intakes resulting in a committed effective dose in excess of 50 percent of the limits stated in §835.207.

10 CFR 835.402(c)(4) STATUS: Full Compliance

REQUIREMENT STATEMENT:

For the purpose of monitoring individual exposures to internal radiation, internal dosimetry programs (including routine bioassay programs) SHALL be conducted for:

Members of the public entering a controlled area likely to receive a dose in excess of 50 percent of the limit stated at §835.208 from all radionuclide intakes in a year.

DESCRIPTION OF COMPLIANCE STATUS:

For the purpose of monitoring individual exposures to internal radiation, FBP conducts an internal dosimetry program (including routine bioassay program) for members of the public entering a controlled area likely to receive a dose in excess of 50 percent of the limit stated at §835.208 from all radionuclide intakes in a year.

10 CFR 835.402(d)(1) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Internal dose monitoring programs implemented to demonstrate compliance with §835.402(c) SHALL be adequate to demonstrate compliance with the dose limits established in subpart C of this part and SHALL be:

Accredited, or excepted from accreditation, in accordance with the DOE Laboratory Accreditation Program for Radiobioassay.

DESCRIPTION OF COMPLIANCE STATUS:

The FBP internal dose monitoring program is adequate to demonstrate compliance with the dose limits established in subpart C of 10 CFR 835 and is accredited under DOELAP.

10 CFR 835.402(d)(2) STATUS: Not Applicable

REQUIREMENT STATEMENT:

Internal dose monitoring programs implemented to demonstrate compliance with §835.402(c) SHALL be adequate to demonstrate compliance with the dose limits established in subpart C of this part and SHALL be:

Determined by the Secretarial Officer responsible for environment, safety and health matters to have performance substantially equivalent to that of programs accredited under the DOE Laboratory Accreditation Program for Radiobioassay

DESCRIPTION OF COMPLIANCE STATUS:

The FBP internal dose monitoring program is adequate to demonstrate compliance with the dose limits established in Subpart C of 10 CFR 835 and is accredited under DOELAP.

10 CFR 835.403(a)(1) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Monitoring of airborne radioactivity SHALL be performed:

Where an individual is likely to receive an exposure of 40 or more DAC-hours in a year; or

DESCRIPTION OF COMPLIANCE STATUS:

FBP performs monitoring of airborne radioactivity concentrations where an individual is likely to receive an exposure of 40 DAC-hours or more in a year.

10 CFR 835.403(a)(2) STATUS: Full Compliance

REQUIREMENT STATEMENT:

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.

DESCRIPTION OF COMPLIANCE STATUS:

FBP performs monitoring of airborne radioactivity as necessary to characterize the airborne radioactivity hazard where respiratory protective devices for protection against airborne radionuclides have been prescribed.

10 CFR 835.403(b) STATUS: Full Compliance

REQUIREMENT STATEMENT:

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.

DESCRIPTION OF COMPLIANCE STATUS:

FBP performs real-time air monitoring, as necessary, to detect and provide warning of airborne radioactivity concentrations that warrant immediate action to terminate inhalation of airborne radioactive material.

10 CFR 835.405(a) STATUS: Full Compliance

REQUIREMENT STATEMENT:

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 either:

(1)Take possession of the package when the carrier offers it for delivery; or

(2)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.

DESCRIPTION OF COMPLIANCE STATUS:

When 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, FBP either:

(1)Takes possession of the package when the carrier offers it for delivery; or

(2)Receives 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.

10 CFR 835.405(b) STATUS: Full Compliance

REQUIREMENT STATEMENT:

(a)Upon receipt from radioactive material transportation, external surfaces of packages known to contain radioactive material SHALL be monitored if the package:

(1)Is labeled with a Radioactive White I, Yellow II, or Yellow III label (as specified at 49 CFR 172.403 and 172,436-440): or

(2)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); or

(3)Has evidence of degradation, such as packages that are crushed, wet, or damaged.

DESCRIPTION OF COMPLIANCE STATUS:

Upon receipt from radioactive material transportation, FBP monitors the external surfaces of packages known to contain radioactive material if the package:

(1)Is labeled with a Radioactive White I, Yellow II, or Yellow III label (as specified at 49 CFR 172.403 and 172,436-440): or

(2)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); or

(3) Has evidence of degradation, such as packages that are crushed, wet, or damaged.

10 CFR 835.405(c)(1) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The monitoring required by paragraph (b) of this section SHALL include:

Measurements of removable contamination levels, unless the package contains only special form (as defined at 10 CFR 71.4) or gaseous radioactive material; and

DESCRIPTION OF COMPLIANCE STATUS:

In reference to the monitoring required by §835.405(b), FBP includes measurements of removable contamination levels, unless the package contains only special form (as defined at 10 CFR 71.4) or gaseous radioactive material.

10 CFR 835.405(c)(2) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The monitoring required by paragraph (b) of this section SHALL include:

Measurements of the radiation levels, if the package contains a Type B quantity (as defined at 10 CFR 71.4) of radioactive material.

DESCRIPTION OF COMPLIANCE STATUS:

In reference to the monitoring required by §835.405(b), FBP includes measurements of the radiation levels, if the package contains a Type B quantity (as defined at 10 CFR 71.4) of radioactive material.

10 CFR 835.405(d) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The monitoring required by paragraph (b) of this section SHALL be completed as soon as practicable following receipt of the package, but not later than 8 hours after the beginning of the working day following receipt of the package.

DESCRIPTION OF COMPLIANCE STATUS:

FBP completes the monitoring required by §835.405(b) as soon as practicable following receipt of the package, but not later than eight hours after the beginning of the working day following receipt of the package.

10 CFR 835.405(e) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Monitoring pursuant to §835.405(b) is not required for packages transported on a DOE site which have remained under the continuous observation and control of a DOE employee or DOE contractor employee who is knowledgeable of and implements required exposure control measures.

DESCRIPTION OF COMPLIANCE STATUS:

FBP maintains required exposure control measures for those packages transported on a DOE site that have remained under the continuous observation and control of DOE contractor employees.

10 CFR 835.501(a) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Personnel entry control SHALL be maintained for each radiological area.

DESCRIPTION OF COMPLIANCE STATUS:

FBP maintains control of personnel entering each radiological area.

10 CFR 835.501(b) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The degree of (personnel entry) control SHALL be commensurate with existing and potential radiological hazards within the area.

DESCRIPTION OF COMPLIANCE STATUS:

FBP maintains the degree of personnel entry control (either administrative or engineered) so that it is commensurate with the existing and potential radiological hazards within the area.

10 CFR 835.501(c) STATUS: Full Compliance

REQUIREMENT STATEMENT:

One or more of the following methods SHALL be used to ensure (personnel entry) control:

(1) Signs and barricades;

(2) Control devices on entrances;

(3) Conspicuous visual and/or audible alarms;

(4) Locked entrance ways; or

(5) Administrative controls.

DESCRIPTION OF COMPLIANCE STATUS:

The FBP entry control program consists of one or more of the following methods:

(1) Signs and barricades;

(2) Control devices on entrances;

(3) Conspicuous visual and/or audible alarms;

(4) Locked entrance ways; or

(5) Administrative controls.

10 CFR 835.501(d).01 STATUS: Full Compliance

REQUIREMENT STATEMENT:

Written authorizations SHALL be required to control entry into and perform work within radiological areas.

DESCRIPTION OF COMPLIANCE STATUS:

The FBP requires written authorizations to control entry into and perform work within radiological areas.

10 CFR 835.501(d).02 STATUS: Full Compliance

REQUIREMENT STATEMENT:

These authorizations SHALL specify radiation protection measures commensurate with the existing and potential hazards.

DESCRIPTION OF COMPLIANCE STATUS:

The FBP written authorizations specify radiation protection measures commensurate with the existing and potential hazards.

10 CFR 835.501(e) STATUS: Full Compliance

REQUIREMENT STATEMENT:

No control(s) SHALL be installed at any radiological area exit that would prevent rapid evacuation of personnel under emergency conditions.

DESCRIPTION OF COMPLIANCE STATUS:

FBP does not install any controls at any radiological area exit that would prevent rapid evacuation of personnel under emergency conditions.

10 CFR 835.502(a)(1) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The following measures SHALL be implemented for each entry into a high radiation area:

The area SHALL be monitored as necessary during access to determine the exposure rates to which the individuals are exposed; and

DESCRIPTION OF COMPLIANCE STATUS:

For each entry into a high radiation area, FBP monitors the area as necessary during access to determine the exposure rates to which the individuals are exposed.

10 CFR 835.502(a)(2) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The following measures SHALL be implemented for each entry into a high radiation area:

Each individual SHALL be monitored by a supplemental dosimetry device or other means capable of providing an immediate estimate of the individual's integrated equivalent dose to the whole body during the entry.

DESCRIPTION OF COMPLIANCE STATUS:

For each entry into a high radiation area, FBP monitors each individual using a supplemental dosimetry device or other means capable of providing an immediate estimate of the individual's integrated equivalent dose to the whole body during the entry.

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10 CFR 835.502(b) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Physical controls. One or more of the following 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 one hour at 30 centimeters from the source or from any surface that the radiation penetrates:

(1)A control device that prevents entry to the area when high radiation levels exist or that, upon entry, causes the radiation level to be reduced below the level that defines 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.

DESCRIPTION OF COMPLIANCE STATUS:

FBP uses one or more of the following features at each entrance or access point to a high radiation area:

(1)A control device that prevents entry to the area when high radiation levels exist or that, upon entry, causes the radiation level to be reduced below the level that defines 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)During periods when access to the area is required, positive control over each entry is maintained (i.e., entryways that are locked).

(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.

10 CFR 835.502(c) STATUS: N/A

REQUIREMENT STATEMENT:

Very high radiation areas: In addition to the above requirements [835.502(b)], additional measures SHALL be implemented to ensure individuals are not able to gain unauthorized or inadvertent access to very high radiation areas.

DESCRIPTION OF COMPLIANCE STATUS:

In addition to the above requirements [835.502(b)], FBP implements additional measures to ensure individuals are not able to gain unauthorized or inadvertent access to very high radiation areas.

There are no VHRAs in FBP PORTS facilities.

10 CFR 835.502(d) STATUS: Full Compliance

REQUIREMENT STATEMENT:

No control(s) SHALL be established in a high or very high radiation area that would prevent rapid evacuation of personnel.

DESCRIPTION OF COMPLIANCE STATUS:

FBP implements no controls in a high or very high radiation area that would prevent rapid evacuation of personnel.

10 CFR 835.601(a) STATUS: Full Compliance

REQUIREMENT STATEMENT:

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.

DESCRIPTION OF COMPLIANCE STATUS:

FBP uses signs and labels with a yellow background. The radiation warning symbol is either black or magenta.

10 CFR 835.601(b) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Signs required by this subpart SHALL be clearly and conspicuously posted and may include radiological protection instructions.

DESCRIPTION OF COMPLIANCE STATUS:

FBP posts signs that are clear and conspicuous and may include radiological protection instructions.

10 CFR 835.601(c) STATUS: Not Applicable

REQUIREMENT STATEMENT:

The posting and labeling requirements in this subpart MAY be modified to reflect the special considerations of DOE activities conducted at private residences or businesses.

DESCRIPTION OF COMPLIANCE STATUS:

There are no private residences or businesses associated with the project. If private residences or businesses become affected by DOE activities, then procedures will be revised as necessary.

10 CFR 835.602(a) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Each access point to a controlled area (as defined in §835.2) SHALL be posted whenever radiological areas or radioactive material areas exist in the area. Individuals who enter only controlled areas without entering radiological areas or radioactive materials areas are not expected to receive a total effective dose of more than 0.1rem (0.001 Sievert) in a year.

DESCRIPTION OF COMPLIANCE STATUS:

FBP posts each access point to a controlled area (as defined in §835.2), identifying it as a controlled area, whenever radiological areas or radioactive material areas exist in the area. Individuals who enter only controlled areas without entering radiological areas or radioactive materials areas are not expected to receive a total effective dose of more than 100 mrem in a year.

10 CFR 835.602(b) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Signs used for this purpose MAY be selected by the contractor to avoid conflict with local security requirements.

DESCRIPTION OF COMPLIANCE STATUS:

FBP may select signs to avoid conflict with local security requirements.

10 CFR 835.603 STATUS: Full Compliance

REQUIREMENT STATEMENT:

Each access point to radiological areas and radioactive material areas (as defined in §835.2) SHALL be posted with conspicuous signs bearing the wording provided in this section.

DESCRIPTION OF COMPLIANCE STATUS:

FBP posts conspicuous signs at each access point to radiological areas and radioactive material areas (as defined in §835.2), bearing the wording provided in 10 CFR 835.603.

10 CFR 835.603(a) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Radiation Area: The words “Caution, Radiation Area” SHALL be posted at each radiation area.

DESCRIPTION OF COMPLIANCE STATUS:

The words “Caution, Radiation Area” are posted at each radiation area.

10 CFR 835.603(b) STATUS: Full Compliance

REQUIREMENT STATEMENT:

High Radiation Area: The words “Caution, High Radiation Area” or “Danger, High Radiation Area” SHALL be posted at each high radiation area.

DESCRIPTION OF COMPLIANCE STATUS:

The words “Caution, High Radiation Area” are posted at each high radiation area.

10 CFR 835.603(c) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Very High Radiation Area: The words "Grave Danger, Very High Radiation Area" SHALL be posted at each very high radiation area.

DESCRIPTION OF COMPLIANCE STATUS:

There are no VHRAs in current FBP managed facilities. The words "Grave Danger, Very High Radiation Area" are posted at each very high radiation area.

10 CFR 835.603(d) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Airborne Radioactivity Area: The words "Caution, Airborne Radioactivity Area" or "Danger, Airborne Radioactivity Area" SHALL be posted at each airborne radioactivity area.

DESCRIPTION OF COMPLIANCE STATUS:

The words "Caution, Airborne Radioactivity Area" are posted at each airborne radioactivity area.

10 CFR 835.603(e) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Contamination Area: The words "Caution, Contamination Area" SHALL be posted at each contamination area.

DESCRIPTION OF COMPLIANCE STATUS:

The words "Caution, Contamination Area" are posted at each contamination area.

10 CFR 835.603(f) STATUS: Full Compliance

REQUIREMENT STATEMENT:

High Contamination Area: The words "Caution, High Contamination Area" or "Danger, High Contamination Area" SHALL be posted at each high contamination area.

DESCRIPTION OF COMPLIANCE STATUS:

The words "Caution, High Contamination Area" are posted at each high contamination area.

10 CFR 835.603(g) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Radioactive Material Area: The words "Caution, Radioactive Material(s) SHALL be posted at each radioactive material area.

DESCRIPTION OF COMPLIANCE STATUS:

The words "Caution, Radioactive Material(s) are posted at each radioactive material area.

10 CFR 835.604(a) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Areas MAY be excepted from the posting requirements of §835.603 for periods of less than 8 continuous hours when placed under continuous observation and control of an individual knowledgeable of, and empowered to implement, required access and exposure control measures.

DESCRIPTION OF COMPLIANCE STATUS:

FBP may except areas from the posting requirements of §835.603 for periods of less than eight continuous hours when placed under continuous observation and control of an individual knowledgeable of, and empowered to implement, required access and exposure control measures.

10 CFR 835.604(b) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Areas MAY be excepted from the radioactive material area posting requirements of §835.603(g) when:

(1)Posted in accordance with §835.603(a) through (f); or

(2)Each item or container of radioactive material is labeled in accordance with this subpart such that individuals entering the area are made aware of the hazard; or

(3)The radioactive material of concern consists solely of structures or installed components, which have been activated (i.e., such as by being exposed to neutron radiation or particles produced in an accelerator).

DESCRIPTION OF COMPLIANCE STATUS:

FBP may except areas from the radioactive material area posting requirements of §835.603(g) when:

(1)Posted in accordance with §835.603(a) through (f); or

(2)Each item or container of radioactive material is labeled in accordance with this subpart such that individuals entering the area are made aware of the hazard; or

(3)The radioactive material of concern consists solely of structures or installed components, which have been activated (i.e., such as by being exposed to neutron radiation or particles produced in an accelerator).

10 CFR 835.604(c) STATUS: Full Compliance

REQUIREMENT STATEMENT:

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.

DESCRIPTION OF COMPLIANCE STATUS:

For areas containing only packages received from radioactive material transportation labeled and in non-degraded condition, FBP need not post these areas in accordance with §835.603 until the packages are monitored in accordance with §835.405.

10 CFR 835.605.01 STATUS: Full Compliance

REQUIREMENT STATEMENT:

Except as provided in §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

DESCRIPTION OF COMPLIANCE STATUS:

Except as provided in §835.606, each item or container of radioactive material bears a durable, clearly visible label bearing the standard radiation warning trefoil and the words "Caution, Radioactive Material."

10 CFR 835.605.02 STATUS: Full Compliance

REQUIREMENT STATEMENT:

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.

DESCRIPTION OF COMPLIANCE STATUS:

Labels

Applied as described in §835.605 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.

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10 CFR 835.606(a) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Items and containers MAY be excepted from the radioactive material labeling requirements of §835.605 when:

(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 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.

(6)The radioactive material consists solely of nuclear weapons or their components.

DESCRIPTION OF COMPLIANCE STATUS:

FBP may except items and containers from the radioactive material labeling requirements of §835.605 when:

(1)Used, handled, or stored in areas posted and controlled in accordance with 10 CFR 835 Subpart G 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 10 CFR 835 Appendix E and less than 0.l Ci; or

(3)Packaged, labeled, and marked in accordance with the regulations of the 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.

(6)The radioactive material consists solely of nuclear weapons or their components.

10 CFR 835.606(b) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Radioactive material labels applied to sealed radioactive sources MAY be excepted from the color specifications of §835.601(a).

DESCRIPTION OF COMPLIANCE STATUS:

FBP may except the radioactive material labels applied to sealed radioactive sources from the color specifications of §835.601(a).

10 CFR 835.701(a) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Records SHALL be maintained to document compliance with this part and with radiation protection programs required by §835.101.

DESCRIPTION OF COMPLIANCE STATUS:

FBP maintains records to document compliance with 10 CFR 835 and with radiation protection programs required by §835.101.

10 CFR 835.701(b) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Unless otherwise specified in this subpart, records SHALL be retained until final disposition is authorized by DOE.

DESCRIPTION OF COMPLIANCE STATUS:

Unless otherwise specified in 10 CFR 835 Subpart H, FBP maintains required records until final disposition is authorized by DOE.

10 CFR 835.702(a) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Except as authorized by §835.702(b), records SHALL be maintained to document doses received by all individuals for whom monitoring was conducted and to document doses received during planned special exposures, unplanned doses exceeding the monitoring thresholds of §835.402, and authorized emergency exposures.

DESCRIPTION OF COMPLIANCE STATUS:

Except as authorized by §835.702(b), FBP maintains records to document doses received by all individuals for whom monitoring was conducted and to document unplanned doses exceeding the monitoring thresholds of §835.402 and authorized emergency exposures.

10 CFR 835.702(b) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Recording of the non-uniform equivalent dose to the skin is not required if the dose is less than 2 percent of the limit specified for the skin in §835.202(a)(4). Recording of internal dose (committed effective dose or committed equivalent dose) is not required for any monitoring result estimated to correspond to an individual receiving less than 0.01 rem (0.1 mSv) committed effective dose. The bioassay or air monitoring result used to make the estimate shall be maintained in accordance with §835.703(b) and the unrecorded internal dose estimated for any individual in a year shall not exceed the applicable monitoring threshold at §835.402(c).

DESCRIPTION OF COMPLIANCE STATUS:

FBP may not record non-uniform equivalent dose to the skin if the dose is less than two percent of the limit specified for the skin in §835.202(a)(4).

FBP may not record the internal dose (committed effective dose or committed equivalent dose) for any monitoring result estimated to correspond to an individual receiving less than 100 mrem committed effective dose.

FBP maintains the bioassay or air monitoring result used to make the estimate in accordance with §835.703(b).

The unrecorded internal dose estimated for any individual in a year will not exceed the applicable monitoring threshold at §835.402(c).

10 CFR 835.702(c)(1) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The (individual monitoring) records required by this section SHALL:

Be sufficient to evaluate compliance with subpart C of this part.

DESCRIPTION OF COMPLIANCE STATUS:

FBP individual monitoring records are sufficient to evaluate compliance with 10 CFR 835 Subpart C.

10 CFR 835.702(c)(2) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The (individual monitoring) records required by this section SHALL:

Be sufficient to provide dose information necessary to complete reports required by subpart I of this part.

DESCRIPTION OF COMPLIANCE STATUS:

The individual monitoring records required by §835.702 are sufficient to provide the dose information necessary to complete reports required by 10 CFR 835 Subpart I.

10 CFR 835.702(c)(3)(i) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The (individual monitoring) records required by this section SHALL:

Include the results of monitoring used to assess the following quantities for external dose received during the year:

The effective dose from external sources of radiation (equivalent dose to the whole body MAY be used as effective dose for external exposure).

DESCRIPTION OF COMPLIANCE STATUS:

FBP includes in the individual monitoring records required by §835.702, the effective dose from external sources of radiation (equivalent dose to the whole body may be used as effective dose for external exposure) received during the year.

10 CFR 835.702(c)(3)(ii) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The (individual monitoring) records required by this section SHALL:

Include the results of monitoring used to assess the following quantities for external dose received during the year:

The equivalent dose to the lens of the eye.

DESCRIPTION OF COMPLIANCE STATUS:

FBP includes in the individual monitoring records required by §835.702, the equivalent dose to the lens of the eye received during the year, when monitoring is required.

10 CFR 835.702(c)(3)(iii) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The (individual monitoring) records required by this section SHALL:

Include the following results of monitoring used to assess the quantities for external dose received during the year:

The equivalent dose to the skin.

DESCRIPTION OF COMPLIANCE STATUS:

FBP includes the equivalent dose to the skin received during the year, in the individual monitoring records required by §835.702.

10 CFR 835.702(c)(3)(iv) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The (individual monitoring) records required by this section SHALL:

Include the results of monitoring used to assess the following quantities for external dose received during the year:

The equivalent dose equivalent to the extremities.

DESCRIPTION OF COMPLIANCE STATUS:

FBP includes the equivalent dose to the extremities received during the year, in the individual monitoring records required by §835.702, when extremity monitoring is required.

10 CFR 835.702(c)(4)(i) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The (individual monitoring) records required by this section SHALL:

Include the following information for internal dose resulting from intakes received during the year:

Committed effective dose

DESCRIPTION OF COMPLIANCE STATUS:

FBP includes the committed effective dose for intakes that occur during the year, in the individual monitoring records required by §835.702.

10 CFR 835.702(c)(4)(ii) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The (individual monitoring) records required by this section SHALL:

Include the following information for internal dose resulting from intakes received during the year:

Committed equivalent dose to any organ or tissue of concern.

DESCRIPTION OF COMPLIANCE STATUS:

FBP includes in the individual monitoring records required by §835.702 the committed equivalent dose to any organ or tissue of concern for any intakes that occur during the year.

10 CFR 835.702(c)(4)(iii) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The (individual monitoring) records required by this section SHALL:

Include the following information for internal dose resulting from intakes received during the year:

Identity of radionuclides

DESCRIPTION OF COMPLIANCE STATUS:

FBP includes the identity of radionuclides from an intake that occurs during the year, in the individual monitoring records required by §835.702.

10 CFR 835.702(c)(5)(i) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The (individual monitoring) records required by this section SHALL:

Include the following quantities for the summation of the external and internal dose:

Total effective dose in a year.

DESCRIPTION OF COMPLIANCE STATUS:

FBP includes in the individual monitoring records required by §835.702, the total effective dose in a year, which is the sum of the external and internal dose for that year.

10 CFR 835.702(c)(5)(ii) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The (individual monitoring) records required by this section SHALL:

Include the following quantities for the summation of the external and internal dose:

For any organ or tissue assigned an internal dose during the year, the sum of the deep dose equivalent from external exposures and the committed dose equivalent to that organ or tissue.

DESCRIPTION OF COMPLIANCE STATUS:

FBP includes in the individual monitoring records required by §835.702, for any organ or tissue assigned an internal dose during the year, the sum of the equivalent dose to the whole body from external exposures and the committed equivalent dose to that organ or tissue.

10 CFR 835.702(c)(5)(iii) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The (individual monitoring) records required by this section SHALL:

Include the following quantities for the summation of the external and internal dose:

Cumulative total effective dose.

DESCRIPTION OF COMPLIANCE STATUS:

FBP includes in the individual monitoring records required by §835.702, the cumulative total effective dose received from external and internal sources.

10 CFR 835.702(c)(6) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The (individual monitoring) records required by this section SHALL:

Include the equivalent dose to the embryo/fetus of a declared pregnant worker.

DESCRIPTION OF COMPLIANCE STATUS:

FBP includes in the individual monitoring records required by §835.702, the estimated equivalent dose to the embryo/fetus of a declared pregnant worker.

10 CFR 835.702(d).01 STATUS: Full Compliance

REQUIREMENT STATEMENT:

Documentation of all occupational dose received during the current year, except for doses resulting from planned special exposures conducted in compliance with §835.204 and emergency exposures authorized in accordance with §835.1302(d), SHALL be obtained to demonstrate compliance with §835.202 (a).

DESCRIPTION OF COMPLIANCE STATUS:

To demonstrate compliance with §835.202(a), FBP obtains all occupational exposures received during the current year, except for doses resulting from emergency exposures authorized in accordance with §835.1302(d).

10 CFR 835.702(d).02 STATUS: Full Compliance

REQUIREMENT STATEMENT:

If complete records documenting previous occupational dose during the year cannot be obtained, a written estimate signed by the individual MAY be accepted to demonstrate compliance.

DESCRIPTION OF COMPLIANCE STATUS:

If complete records documenting previous occupational dose during the year cannot be obtained, FBP may accept a written estimate signed by the individual to demonstrate compliance.

10 CFR 835.702(e) STATUS: Full Compliance

REQUIREMENT STATEMENT:

For radiological workers whose occupational dose is monitored in accordance with §835.402, reasonable efforts SHALL be made to obtain complete records of prior years' occupational internal and external doses.

DESCRIPTION OF COMPLIANCE STATUS:

For radiological workers whose occupational dose is monitored in accordance with §835.402, FBP makes reasonable efforts to obtain complete records of prior years' occupational internal and external doses.

10 CFR 835.702(f) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The records specified in this section that are identified with a specific individual SHALL be readily available to that individual.

DESCRIPTION OF COMPLIANCE STATUS:

FBP makes the records specified in §835.702(f) that are identified with a specific individual, readily available to that individual.

10 CFR 835.702(g) STATUS: Full Compliance

REQUIREMENT STATEMENT:

All records required by this section SHALL be transferred to the DOE upon cessation of activities at the site that could cause exposure to individuals.

DESCRIPTION OF COMPLIANCE STATUS:

FBP will transfer all records required by §835.702(h) to the DOE upon cessation of activities at sites that could cause exposure to individuals.

10 CFR 835.702(h) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Data necessary for future verification or reassessment of the recorded doses SHALL be recorded.

DESCRIPTION OF COMPLIANCE STATUS:

FBP records data necessary to allow for future verification or reassessment of the recorded doses.

10 CFR 835.703(a) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The following information SHALL be documented and maintained:

Results of monitoring for radiation and radioactive material as required by subparts E and L of this part, except for monitoring required by §835.1102(d).

DESCRIPTION OF COMPLIANCE STATUS:

FBP documents and maintains the results of monitoring for radiation and radioactive material as required by subparts E and L of 10 CFR 835, except for monitoring required by §835.1102(d).

10 CFR 835.703(b) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The following information SHALL be documented and maintained:

Results of monitoring used to determine individual occupational dose from external and internal sources.

DESCRIPTION OF COMPLIANCE STATUS:

FBP documents and maintains the results of monitoring used to determine individual occupational dose from external and internal sources.

10 CFR 835.703(c) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The following information SHALL be documented and maintained:

Results of monitoring for the release and control of material and equipment as required by §835.1101.

DESCRIPTION OF COMPLIANCE STATUS:

FBP documents and maintains the results of monitoring for the release and control of material and equipment as required by §835.1101.

10 CFR 835.703(d) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The following information SHALL be documented and maintained:

Results of maintenance and calibration performed on instruments and equipment as required by §835.401(b).

DESCRIPTION OF COMPLIANCE STATUS:

FBP documents and maintains the results of maintenance and calibration performed on instruments and equipment as required by §835.401(b).

10 CFR 835.704(a) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Training records SHALL be maintained, as necessary, to demonstrate compliance with §835.901.

DESCRIPTION OF COMPLIANCE STATUS:

FBP maintains training records that demonstrate compliance with section §835.901.

10 CFR 835.704(b) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Actions taken to maintain occupational exposures as low as reasonably achievable, including the actions required for this purpose by §835.101, as well as facility design and control actions required by §835.1001, §835.1002, and §835.1003, SHALL be documented.

DESCRIPTION OF COMPLIANCE STATUS:

FBP documents actions taken to maintain occupational exposures as low as reasonably achievable, including the actions required for this purpose by §835.101, as well as, facility design and control actions required by §§835.1001, 835.1002, and 835.1003.

10 CFR 835.704(c) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Records SHALL be maintained to document the results of internal audits and other reviews of program content and implementation.

DESCRIPTION OF COMPLIANCE STATUS:

FBP documents and maintains records of the results of internal audits and other reviews of program content and implementation.

10 CFR 835.704(d) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Written declarations of pregnancy, including the estimated date of conception, and revocations of declarations of pregnancy SHALL be maintained.

DESCRIPTION OF COMPLIANCE STATUS:

FBP maintains written declarations of pregnancy, including the estimated date of conception, and revocations of declarations of pregnancy.

10 CFR 835.704(e) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Changes in equipment, techniques, and procedures used for monitoring SHALL be documented.

DESCRIPTION OF COMPLIANCE STATUS:

FBP documents changes in equipment, techniques, and procedures used for monitoring.

10 CFR 835.704(f) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Records SHALL be maintained as necessary to demonstrate compliance with the requirements of 835.1201 and 835.1202 for sealed radioactive source control, inventory, and source leak tests.

DESCRIPTION OF COMPLIANCE STATUS:

FBP maintains records as necessary to demonstrate compliance with the requirements of 835.1201 and 835.1202 for sealed radioactive source control, inventory, and source leak tests.

10 CFR 835.801(a).01 STATUS: Full Compliance

REQUIREMENT STATEMENT:

Radiation exposure data for individuals monitored in accordance with 835.402 SHALL be reported as specified in this section.

DESCRIPTION OF COMPLIANCE STATUS:

FBP reports radiation exposure data for individuals monitored in accordance with 835.402, in accordance with the requirements of §835.801.

10 CFR 835.801(a).02 STATUS: Full Compliance

REQUIREMENT STATEMENT:

The information (radiation exposure data) SHALL include the data required under 835.702(c).

DESCRIPTION OF COMPLIANCE STATUS:

FBP includes the data required under §835.702(c) in the radiation exposure data information.

10 CFR 835.801(a).03 STATUS: Full Compliance

REQUIREMENT STATEMENT:

Each notification (radiation exposure data) and report SHALL be in writing and include: the DOE site or facility name, the name of the individual, and the individual's social security number, employee number, or other unique identification number.

DESCRIPTION OF COMPLIANCE STATUS:

FBP reports in writing each notification (radiation exposure data) and includes the FBP site or facility name, the name of the individual, and the individual's social security number, employee number, or other unique identification number.

10 CFR 835.801(b).01 STATUS: Full Compliance

REQUIREMENT STATEMENT:

Upon the request from an individual terminating employment, records of exposure SHALL be provided to that individual as soon as the data are available, but not later than 90 days after termination.

DESCRIPTION OF COMPLIANCE STATUS:

Upon the request from an individual terminating employment, FBP provides records of exposure to that individual as soon as the data are available, but not later than 90 days after termination.

10 CFR 835.801(b).02 STATUS: Full Compliance

REQUIREMENT STATEMENT:

A written estimate of the radiation dose received by that employee based on available information SHALL be provided at the time of termination, if requested.

DESCRIPTION OF COMPLIANCE STATUS:

If requested, FBP provides a written estimate of the radiation dose received by that employee based on available information at the time of termination.

10 CFR 835.801(c) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Each DOE- or DOE-contractor-operated site or facility SHALL, on an annual basis, provide a radiation dose report to each individual monitored during the year at that site or facility in accordance with 835.402.

DESCRIPTION OF COMPLIANCE STATUS:

FBP provides, on an annual basis, a radiation dose report to each individual monitored during the year at the site or facility in accordance with 835.402.

10 CFR 835.801(d) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Detailed information concerning any individual's exposure SHALL be made available to the individual upon request of that individual, consistent with the provisions of the Privacy Act (5 U.S.C. 552a).

DESCRIPTION OF COMPLIANCE STATUS:

FBP makes available detailed information concerning any individual's exposure to that individual upon request of that individual, consistent with the provisions of the Privacy Act (5 U.S.C. 552a).

10 CFR 835.801(e).01 STATUS: Full Compliance

REQUIREMENT STATEMENT:

When a DOE contractor is required to report to the Department, pursuant to Departmental requirements for occurrence reporting and processing, any exposure of an individual to radiation and/or radioactive material, or planned special exposure in accordance with 835.204(e), the contractor SHALL also provide that individual with a report on his or her exposure data included therein.

DESCRIPTION OF COMPLIANCE STATUS:

When FBP is required to report to the Department, pursuant to Departmental requirements for occurrence reporting and processing, any exposure of an individual to radiation and/or radioactive material, FBP also provides that individual with a report on his or her exposure data included therein.

10 CFR 835.801(e).02 STATUS: Full Compliance

REQUIREMENT STATEMENT:

Such report (radiation exposure data report) SHALL be transmitted at a time not later than the transmittal to the Department.

DESCRIPTION OF COMPLIANCE STATUS:

FBP transmits the individual's dose report at a time not later than the transmittal to the Department.

10 CFR 835.901(a) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Each individual SHALL complete radiation safety training on the topics established at §835.901(c) commensurate with the hazards in the area and the required controls.

(1)Before being permitted unescorted access to controlled areas; and

(2)Before receiving occupational dose during access to controlled areas at a DOE site or facility.

DESCRIPTION OF COMPLIANCE STATUS:

FBP provides radiation safety training to each individual on the topics established at §835.901(c) commensurate with the hazards in the area and the required controls.

(1)Before being permitted unescorted access to controlled areas; and

(2)Before receiving occupational dose during access to controlled areas at an FBP-operated site or facility.

10 CFR 835.901(b) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Each individual SHALL demonstrate knowledge of the radiation safety training topics established in 835.901(c), commensurate with the hazards in the area and required controls, by successful completion of an examination and performance demonstrations:

(1)Before being permitted unescorted access to radiological areas; and

(2)Before performing unescorted assignments as a radiological worker.

DESCRIPTION OF COMPLIANCE STATUS:

FBP requires each individual to demonstrate knowledge of the radiation safety training topics established in 835.901(c), commensurate with the hazards in the area and required controls, by successful completion of an examination and performance demonstrations:

(1)Before being permitted unescorted access to radiological areas; and

(2)Before performing unescorted assignments as a radiological worker.

10 CFR 835.901(c)(1) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Radiation safety training SHALL include the following topics, to the extent appropriate to each individual's prior training, work assignments, and degree of exposure to potential radiological hazards:

Risks of exposure to radiation and radioactive materials, including prenatal radiation exposure

DESCRIPTION OF COMPLIANCE STATUS:

FBP radiation safety training includes risks of exposure to radiation and radioactive materials, including prenatal radiation exposure.

10 CFR 835.901(c).(2) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Radiation safety training SHALL include the following topics, to the extent appropriate to each individual's prior training, work assignments, and degree of exposure to potential radiological hazards:

Basic radiological fundamentals and radiation protection concepts.

DESCRIPTION OF COMPLIANCE STATUS:

FBP radiation safety training includes basic radiological fundamentals and radiation protection concepts.

10 CFR 835.901(c)(3) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Radiation safety training SHALL include the following topics, to the extent appropriate to each individual's prior training, work assignments, and degree of exposure to potential radiological hazards:

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.

DESCRIPTION OF COMPLIANCE STATUS:

FBP radiation safety training includes 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.

10 CFR 835.901(c)(4) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Radiation safety training SHALL include the following topics, to the extent appropriate to each individual's prior training, work assignments, and degree of exposure to potential radiological hazards:

Individual rights and responsibilities as related to implementation of the facility Radiation Protection plan.

DESCRIPTION OF COMPLIANCE STATUS:

FBP radiation safety training includes individual rights and responsibilities as related to implementation of the facility Radiation Protection plan.

10 CFR 835.901(c)(5) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Radiation safety training SHALL include the following topics, to the extent appropriate to each individual's prior training, work assignments, and degree of exposure to potential radiological hazards:

Individual responsibilities for implementing ALARA measures required by 835.101.

DESCRIPTION OF COMPLIANCE STATUS:

FBP radiation safety training includes individual responsibilities for implementing ALARA measures required by 835.101.

10 CFR 835.901(c)(6) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Radiation safety training SHALL include the following topics, to the extent appropriate to each individual's prior training, work assignments, and degree of exposure to potential radiological hazards:

Individual exposure reports that may be requested in accordance with 835.801.

DESCRIPTION OF COMPLIANCE STATUS:

FBP radiation safety training includes individual exposure reports that may be requested in accordance with 835.801.

10 CFR 835.901(d)(1) STATUS: Full Compliance

REQUIREMENT STATEMENT:

When an escort is used in lieu of training in accordance with paragraph (a) or (b) of this section, the escort SHALL:

Have completed radiation safety training, examinations, and performance demonstrations required for entry to the area and performance of the work.

DESCRIPTION OF COMPLIANCE STATUS:

When FBP uses an escort in lieu of training in accordance with 835.901(a) and 835.901(b), the escort has completed radiation safety training, examinations, and performance demonstrations required for entry to the area and performance of the work.

10 CFR 835.901(d)(2) STATUS: Full Compliance

REQUIREMENT STATEMENT:

When an escort is used in lieu of training in accordance with paragraph (a) or (b) of this section, the escort SHALL:

Ensure that all escorted individuals comply with the documented Radiation Protection plan.

DESCRIPTION OF COMPLIANCE STATUS:

When FBP uses an escort in lieu of training in accordance with 835.901(a) and §835.901(b), the escort ensures that all escorted individuals comply with the documented Radiation Protection plan.

10 CFR 835.901(e).01 STATUS: Full Compliance

REQUIREMENT STATEMENT:

Radiation safety training SHALL be provided to individuals when there is a significant change to radiation protection policies and procedures that may affect the individual and at intervals not to exceed 24 months.

DESCRIPTION OF COMPLIANCE STATUS:

FBP provides radiation safety training to individuals when there is a significant change to radiation protection policies and procedures that may affect the individual and at intervals not to exceed 24 months.

10 CFR 835.901(e).02 STATUS: Full Compliance

REQUIREMENT STATEMENT:

Such training provided for individuals subject to the requirements of 835.901(b)(1) and (b)(2) SHALL include successful completion of an examination.

DESCRIPTION OF COMPLIANCE STATUS:

The radiation safety training FBP provides for individuals subject to the requirements of §835.901(b)(1) and (b)(2) includes successful completion of an examination.

10 CFR 835.1001(a).01 STATUS: Full Compliance

REQUIREMENT STATEMENT:

Measures SHALL be taken to maintain radiation exposure in controlled areas ALARA through engineered and administrative controls.

DESCRIPTION OF COMPLIANCE STATUS:

FBP applies measures to maintain radiation exposure in controlled areas ALARA through engineered and administrative controls.

10 CFR 835.1001(a).02 STATUS: Full Compliance

REQUIREMENT STATEMENT:

The primary methods used SHALL be physical design features (e.g., confinement, ventilation, remote handling, and shielding).

DESCRIPTION OF COMPLIANCE STATUS:

FBP takes measures to maintain radiation exposure in controlled areas ALARA through physical design features and administrative control. The primary methods used are physical design features (e.g., confinement, ventilation, remote handling, and shielding).

10 CFR 835.1001(a).03 STATUS: Full Compliance

REQUIREMENT STATEMENT:

Administrative controls SHALL be employed only as supplemental methods to control radiation exposure.

DESCRIPTION OF COMPLIANCE STATUS:

FBP takes measures to maintain radiation exposure in controlled ALARA through physical design features and administrative control. Administrative controls are employed only as supplemental methods to control radiation exposure.

10 CFR 835.1001(b) STATUS: Full Compliance

REQUIREMENT STATEMENT:

For specific activities where use of engineered controls is demonstrated to be impractical, administrative controls SHALL be used to maintain radiation exposures ALARA.

DESCRIPTION OF COMPLIANCE STATUS:

For specific activities where use of engineered controls is demonstrated to be impractical, administrative controls are used to maintain radiation exposures ALARA.

10 CFR 835.1002(a) STATUS: Full Compliance

REQUIREMENT STATEMENT:

During the design of new facilities or modification of existing facilities, the following objectives shall be adopted:

Optimization methods SHALL be used to assure that occupational exposure is maintained ALARA in developing and justifying facility design and physical controls.

DESCRIPTION OF COMPLIANCE STATUS:

During the design of new facilities or modification of existing facilities, FBP uses optimization methods to assure that occupational exposure is maintained ALARA when developing and justifying facility design and physical controls.

10 CFR 835.1002(b).01 STATUS: Full Compliance

REQUIREMENT STATEMENT:

During the design of new facilities or modification of existing facilities, the following objectives shall be adopted:

(a)The design objective for controlling personnel exposure from external sources of radiation in areas of continuous occupational occupancy (2,000 hours per year) SHALL 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.

DESCRIPTION OF COMPLIANCE STATUS:

During the design of new facilities or modification of existing facilities, the FBP design objective for controlling personnel exposure from external sources of radiation in areas of continuous occupational occupancy (2,000 hours per year) will be to maintain exposure levels below an average of 0.5 mrem per hour and as far below this average as is reasonably achievable.

10 CFR 835.1002(b).02 STATUS: Full Compliance

REQUIREMENT STATEMENT:

During the design of new facilities or modification of existing facilities, the following objectives shall be adopted:

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 percent of the applicable standards in 835.202.

DESCRIPTION OF COMPLIANCE STATUS:

During the design of new facilities or modification of existing facilities, the FBP design objectives for exposure rates for potential exposure to a radiological worker, where occupancy is less than full-time (<2,000 hours per year), will be ALARA and will not exceed 20 percent of the applicable standards in 835.202.

10 CFR 835.1002(c).01 STATUS: Full Compliance

REQUIREMENT STATEMENT:

During the design of new facilities or modification of existing facilities, the following objectives shall be adopted:

Regarding the control of airborne radioactive material, the design objective SHALL 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.

DESCRIPTION OF COMPLIANCE STATUS:

During the design of new facilities or modification of existing facilities, regarding the control of airborne radioactive material, the FBP 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.

10 CFR 835.1002(c).02 STATUS: Full Compliance

REQUIREMENT STATEMENT:

During the design of new facilities or modification of existing facilities, the following objectives shall be adopted:

Regarding the control of airborne radioactive material, confinement and ventilation SHALL normally be used.

DESCRIPTION OF COMPLIANCE STATUS:

During the design of new facilities or modification of existing facilities, FBP adopts design objectives that normally call for confinement and ventilation of airborne radioactive material.

10 CFR 835.1002(d) STATUS: Full Compliance

REQUIREMENT STATEMENT:

During the design of new facilities or modification of existing facilities, the following objectives shall be adopted:

The design or modification of a facility and the selection of materials SHALL include features that facilitate operations, maintenance, decontamination, and decommissioning.

DESCRIPTION OF COMPLIANCE STATUS:

During the design of new facilities or modification of existing facilities, FBP selects materials that include features that facilitate operations, maintenance, decontamination, and decommissioning.

10 CFR 835.1003(a) STATUS: Full Compliance

REQUIREMENT STATEMENT:

During routine operations, the combination of engineered and administrative controls shall provide that:

The anticipated occupational dose to general employees SHALL not exceed the limits established at 835.202.

DESCRIPTION OF COMPLIANCE STATUS:

During routine operations, the combination of FBP engineered and administrative controls limits the occupational dose to general employees to less than the limits established at 835.202.

10 CFR 835.1003(b) STATUS: Full Compliance

REQUIREMENT STATEMENT:

During routine operations, the combination of engineered and administrative controls shall provide that:

The ALARA process is utilized for personnel exposures to ionizing radiation.

DESCRIPTION OF COMPLIANCE STATUS:

During routine operations, the combination of FBP engineered and administrative controls provides that the ALARA process is used for personnel exposures to ionizing radiation.

10 CFR 835.1101(a)(1) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Except as provided in paragraphs (b) and (c) of this section, material and equipment in contamination areas, high contamination areas, and airborne radioactivity areas, SHALL NOT be released to a controlled area if:

Removable surface contamination levels on accessible surfaces exceed the removable surface contamination values specified in Appendix D of this part; or

DESCRIPTION OF COMPLIANCE STATUS:

Except as provided in paragraphs (b) and (c) of §835.1101, FBP does not release the material and equipment in contamination areas, high contamination areas, and airborne radioactivity areas to controlled areas if removable surface contamination levels on accessible surfaces exceed the removable surface contamination values specified in Appendix D of 10 CFR 835.

10 CFR 835.1101(a)(2) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Except as provided in paragraphs (b) and (c) of this section, material and equipment in contamination areas, high contamination areas, and airborne radioactivity areas, SHALL NOT be released to a controlled area if:

Prior use suggests that the removable surface contamination levels on inaccessible surfaces are likely to exceed the removable surface contamination values specified in Appendix D to this part.

DESCRIPTION OF COMPLIANCE STATUS:

Except as provided in paragraphs (b) and (c) of §835.1101, FBP does not release material and equipment in contamination areas, high contamination areas, and airborne radioactivity areas to a controlled area if prior use suggests that the removable surface contamination levels on inaccessible surfaces are likely to exceed the removable surface contamination values specified in Appendix D of 10 CFR 835.

10 CFR 835.1101(b) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Material and equipment exceeding the removable surface contamination values specified in appendix D of this part MAY be conditionally released for movement on-site from one radiological area for immediate placement in another radiological area only if appropriate monitoring is performed and appropriate controls for the movement are established and exercised.

DESCRIPTION OF COMPLIANCE STATUS:

Material and equipment exceeding the removable surface contamination values specified in 10 CFR 835 Appendix D may be conditionally released for movement on-site from one radiological area for immediate placement in another radiological area, if appropriate monitoring is performed and appropriate controls for the movement are established and exercised.

10 CFR 835.1101(c)(1) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Material and equipment with fixed contamination levels that exceed the total surface contamination values specified in Appendix D of this part MAY be released for use in controlled areas outside of the radiological areas only under the following conditions:

Removable surface contamination levels are below the removable surface contamination values specified in Appendix D of this part.

DESCRIPTION OF COMPLIANCE STATUS:

Material and equipment with fixed contamination levels that exceed the total surface contamination values specified in 10 CFR 835 Appendix D may be released for use in controlled areas outside of the radiological areas if the removable surface contamination values are below the values specified in 10 CFR 835 Appendix D.

10 CFR 835.1101(c)(2) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Material and equipment with fixed contamination levels that exceed the total surface contamination values specified in Appendix D of this part MAY be released for use in controlled areas outside of the radiological areas only under the following conditions:

The material or equipment is routinely monitored and clearly marked or labeled to alert personnel of the contaminated status.

DESCRIPTION OF COMPLIANCE STATUS:

Material and equipment with fixed contamination levels that exceed the total surface contamination values specified in 10 CFR 835 Appendix D may be released for use in controlled areas outside of the radiological areas if the material or equipment is routinely monitored and clearly marked or labeled to alert personnel of the contaminated status.

10 CFR 835.1102(a) STATUS: Full Compliance

REQUIREMENT STATEMENT:

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.

DESCRIPTION OF COMPLIANCE STATUS:

FBP maintains and verifies appropriate controls that prevent the inadvertent transfer of removable contamination to locations outside of radiological areas under normal operating conditions.

10 CFR 835.1102(b) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Any area in which contamination levels exceed the values specified in appendix D of this part SHALL be controlled in a manner commensurate with the physical and chemical characteristics of the contaminant, the radionuclides present, and the fixed and removable contamination levels.

DESCRIPTION OF COMPLIANCE STATUS:

FBP controls any area in which contamination levels exceed the values specified in Appendix D of 10 CFR 835 in a manner commensurate with the physical and chemical characteristics of the contaminant, the radionuclides present, and the fixed and removable contamination levels.

10 CFR 835.1102(c)(1) STATUS: Full Compliance

REQUIREMENT STATEMENT:

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, SHALL be controlled as follows when located outside of radiological areas:

The area SHALL be routinely monitored to ensure the removable surface contamination level remains below the removable surface contamination values specified in Appendix D of this part.

DESCRIPTION OF COMPLIANCE STATUS:

For 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 10 CFR 835, FBP performs routine monitoring to ensure that the removable surface contamination level remains below the removable surface contamination values specified in 10 CFR 835 Appendix D.

10 CFR 835.1102(c)(2) STATUS: Full Compliance

REQUIREMENT STATEMENT:

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, SHALL be controlled as follows when located outside of radiological areas:

The area SHALL be conspicuously marked to warn individuals of the contaminated status.

DESCRIPTION OF COMPLIANCE STATUS:

FBP conspicuously marks 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 10 CFR 835, to warn individuals of the contaminated status.

10 CFR 835.1102(d) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Individuals exiting contamination, high contamination, or airborne radioactivity areas shall be monitored, as appropriate, for the presence of surface contamination.

DESCRIPTION OF COMPLIANCE STATUS:

FBP monitors for the presence of surface contamination, as appropriate, individuals exiting contamination, high contamination, or airborne radioactivity areas.

10 CFR 835.1102(e) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Protective clothing shall 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.

DESCRIPTION OF COMPLIANCE STATUS:

FBP requires protective clothing for entry into areas in which removable contamination exists at levels exceeding the removable surface contamination values specified in Appendix D of 10 CFR 835.

10 CFR 835.1201 STATUS: Full Compliance

REQUIREMENT STATEMENT:

Sealed radioactive sources SHALL be used, handled, and stored in a manner commensurate with the hazards associated with the operations involving the sources.

DESCRIPTION OF COMPLIANCE STATUS:

FBP uses, handles, and stores sealed radioactive sources in a manner commensurate with the hazards associated with the operations involving the sources.

10 CFR 835.1202(a) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Each accountable sealed radioactive source SHALL be inventoried at intervals not to exceed six months.

DESCRIPTION OF COMPLIANCE STATUS:

FBP inventories each accountable sealed radioactive source at intervals not to exceed six months.

10 CFR 835.1202(a)(1) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Each accountable sealed radioactive source shall be inventoried at intervals not to exceed six months. This inventory SHALL:

Establish the physical location of each accountable sealed radioactive source.

DESCRIPTION OF COMPLIANCE STATUS:

FBP inventories each accountable sealed radioactive source at intervals not to exceed six months. This inventory establishes the physical location of each accountable sealed radioactive source.

10 CFR 835.1202(a)(2) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Each accountable sealed radioactive source shall be inventoried at intervals not to exceed six months. This inventory SHALL:

Verify the presence and adequacy of associated postings and labels.

DESCRIPTION OF COMPLIANCE STATUS:

FBP inventories each accountable sealed radioactive source at intervals not to exceed six months. This inventory verifies the presence and adequacy of associated postings and labels.

10 CFR 835.1202(a)(3) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Each accountable sealed radioactive source shall be inventoried at intervals not to exceed six months. This inventory SHALL:

Establish the adequacy of storage locations, containers, and devices.

DESCRIPTION OF COMPLIANCE STATUS:

FBP inventories each accountable sealed radioactive source at intervals not to exceed six months. This inventory establishes the adequacy of storage locations, containers, and devices.

10 CFR 835.1202(b).01 STATUS: Full Compliance

REQUIREMENT STATEMENT:

Except for sealed radioactive sources consisting solely of gaseous radioactive material or tritium, each accountable sealed radioactive source SHALL be subject to a source leak test upon receipt, when damage is suspected, and at intervals not to exceed six months.

DESCRIPTION OF COMPLIANCE STATUS:

Except for sealed radioactive sources consisting solely of gaseous radioactive material or tritium, FBP performs a source leak test on each accountable sealed radioactive source upon receipt, when damage is suspected, and at intervals not to exceed six months.

10 CFR 835.1202(b).02 STATUS: Full Compliance

REQUIREMENT STATEMENT:

Source leak tests SHALL be capable of detecting radioactive material leakage equal to or exceeding 0.005 μCi.

DESCRIPTION OF COMPLIANCE STATUS:

The source leak tests performed by FBP are capable of detecting radioactive material leakage equal to or exceeding 0.005 μCi.

10 CFR 835.1202(c) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Notwithstanding the requirements of paragraph (b) of this section, an accountable sealed radioactive source is not subject to periodic source leak testing if that source has been removed from service. Such sources SHALL be stored in a controlled location, subject to periodic inventory as required by paragraph (a) of this section, and subject to source leak testing prior to being returned to service.

DESCRIPTION OF COMPLIANCE STATUS:

FBP stores sources that have been removed from service in a controlled location, subject to periodic inventory as required by paragraph (a) of §835.1202, and subject to source leak testing prior to being returned to service.

10 CFR 835.1202(d) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Notwithstanding the requirements of paragraphs (a) and (b) of this section, an accountable sealed radioactive source is not subject to periodic inventory and source leak testing if that source is located in an area that is unsafe for human entry or otherwise inaccessible.

DESCRIPTION OF COMPLIANCE STATUS:

Accountable sealed radioactive sources are not subject to periodic inventory and source leak testing if that source is located in an area that is unsafe for human entry or otherwise inaccessible.

10 CFR 835.1202(e) STATUS: Full Compliance

REQUIREMENT STATEMENT:

An accountable sealed radioactive source found to be leaking radioactive material SHALL be controlled in a manner that minimizes the spread of radioactive contamination.

DESCRIPTION OF COMPLIANCE STATUS:

FBP controls accountable sealed radioactive sources found to be leaking radioactive material in a manner that minimizes the spread of radioactive contamination.

10 CFR 835.1301(a)(1) STATUS: Full Compliance

REQUIREMENT STATEMENT:

A general employee whose occupational dose has exceeded the numerical value of any of the limits specified in 835.202 as a result of an authorized emergency exposure MAY be permitted to return to work in radiological areas during the current year providing that all of the following conditions are met.

Approval is first obtained from the contractor management and the Head of the responsible DOE field organization.

DESCRIPTION OF COMPLIANCE STATUS:

A general employee whose occupational dose has exceeded the numerical value of any of the limits specified in 835.202 as a result of an authorized emergency exposure MAY be permitted to return to work in radiological areas during the current year providing approval is obtained from FBP management and the PPPO Manager.

10 CFR 835.1301(a)(2) STATUS: Full Compliance

REQUIREMENT STATEMENT:

A general employee whose occupational dose has exceeded the numerical value of any of the limits specified in §835.202 as a result of an authorized emergency exposure MAY be permitted to return to work in radiological areas during the current year providing that all of the following conditions are met.

The individual receives counseling from radiological protection and medical personnel regarding the consequences of receiving additional occupational exposure during the year.

DESCRIPTION OF COMPLIANCE STATUS:

A general employee whose occupational dose has exceeded the numerical value of any of the limits specified in 835.202 as a result of an authorized emergency exposure may be permitted to return to work in radiological areas during the current year providing the individual receives counseling from radiological protection and medical personnel regarding the consequences of receiving additional occupational exposure during the year.

10 CFR 835.1301(a)(3) STATUS: Full Compliance

REQUIREMENT STATEMENT:

A general employee whose occupational dose has exceeded the numerical value of any of the limits specified in 835.202 as a result of an authorized emergency exposure MAY be permitted to return to work in radiological areas during the current year providing that all of the following conditions are met.

The affected employee agrees to return to radiological work.

DESCRIPTION OF COMPLIANCE STATUS:

A general employee whose occupational dose has exceeded the numerical value of any of the limits specified in 835.202 as a result of an authorized emergency exposure may be permitted to return to work in radiological areas during the current year providing the affected employee agrees to return to radiological work.

10 CFR 835.1301(b) STATUS: Full Compliance

REQUIREMENT STATEMENT:

All doses exceeding the limits specified in §835.202 SHALL be recorded in the affected individual's occupational dose record.

DESCRIPTION OF COMPLIANCE STATUS:

FBP will record all doses exceeding the limits specified in §835.202 in the affected individual's occupational dose record.

10 CFR 835.1301(c) STATUS: Full Compliance

REQUIREMENT STATEMENT:

When the conditions under which a dose was received in excess of the limits specified in 835.202 except those doses received in accordance with 835.204 have been eliminated, operating management SHALL notify the Head of the responsible DOE field organization.

DESCRIPTION OF COMPLIANCE STATUS:

When the conditions under which a dose was received in excess of the limits specified in §835.202 have been eliminated, FBP management will notify the PPPO Manager.

10 CFR 835.1301(d) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Operations which have been suspended as a result of a dose in excess of the limits specified in §835.202, except those doses received in accordance with §835.204, MAY be resumed only with the approval of DOE.

DESCRIPTION OF COMPLIANCE STATUS:

FBP may resume operations after a dose was received in excess of the limits specified in §835.202 only with the approval of DOE.

10 CFR 835.1302(a) STATUS: Full Compliance

REQUIREMENT STATEMENT:

The risk of injury to those individuals involved in rescue and recovery operations SHALL be minimized.

DESCRIPTION OF COMPLIANCE STATUS:

FBP will take steps to minimize the risk of injury to those individuals involved in rescue and recovery operations.

10 CFR 835.1302(b) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Operating management SHALL weigh actual and potential risks against the benefits to be gained.

DESCRIPTION OF COMPLIANCE STATUS:

FBP will weigh actual and potential risks against the benefits to be gained.

10 CFR 835.1302(c) STATUS: Full Compliance

REQUIREMENT STATEMENT:

No individual SHALL be required to perform rescue actions that might involve substantial personal risk.

DESCRIPTION OF COMPLIANCE STATUS:

FBP will only use volunteers to perform rescue actions that might involve substantial personal risk.

10 CFR 835.1302(d) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Each individual authorized to perform emergency actions likely to result in occupational doses exceeding the values of the limits provided at §835.202(a) SHALL be trained in accordance with §835.901(b) and briefed beforehand on the known or anticipated hazards to which the individual will be subjected.

DESCRIPTION OF COMPLIANCE STATUS:

FBP will train each individual authorized to perform emergency actions likely to result in occupational doses exceeding the values of the limits provided at §835.202(a), in accordance with §835.901(b), and will brief them beforehand on the known or anticipated hazards to which they will be exposed.

10 CFR 835.1304(a) STATUS: Full Compliance

REQUIREMENT STATEMENT:

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, SHALL provide nuclear accident dosimetry for those individuals.

DESCRIPTION OF COMPLIANCE STATUS:

FBP provides nuclear accident dosimetry for those individuals working in installations possessing sufficient quantities of fissile material to potentially constitute a critical mass, such that excessive exposure of individuals to radiation from a nuclear accident is possible.

10 CFR 835.1304(b)(1) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Nuclear accident dosimetry SHALL include the following:

A method to conduct initial screening of individuals involved in a nuclear accident to determine whether significant exposures to radiation occurred.

DESCRIPTION OF COMPLIANCE STATUS:

FBP nuclear accident dosimetry includes a method to conduct initial screening of individuals involved in a nuclear accident to determine whether significant exposures to radiation occurred.

10 CFR 835.1304(b)(2) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Nuclear accident dosimetry SHALL include the following:

Methods and equipment for analysis of biological materials

DESCRIPTION OF COMPLIANCE STATUS:

FBP nuclear accident dosimetry includes methods and equipment for analysis of biological materials.

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10 CFR 835.1304(b)(3) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Nuclear accident dosimetry SHALL include the following:

A system of fixed nuclear accident dosimeter units.

DESCRIPTION OF COMPLIANCE STATUS:

FBP nuclear accident dosimetry includes a system of fixed nuclear accident dosimeters.

10 CFR 835.1304(b)(4) STATUS: Full Compliance

REQUIREMENT STATEMENT:

Nuclear accident dosimetry SHALL include the following:

Personal nuclear accident dosimeters

DESCRIPTION OF COMPLIANCE STATUS:

FBP nuclear accident dosimetry includes personal nuclear accident dosimeters.

10 CFR 835 Appendices A, D, and E STATUS: Full Compliance

FBP complies with all parts of appendices A, D, and E that apply to the DOE activities performed within the scope of this Radiation Protection plan as printed in the June 8, 2007 version of 10 CFR 835.

Appendix D
RADIOLOGICAL ASSESSMENT FUNCTIONAL ELEMENTS

Functional Element	Regulatory Provision	Guidance Document
1. Organization and Administration	10 CFR 835 Subpart B	DOE G 441.1-1C §3.0
2. ALARA	10 CFR 835.101(c), Subpart K	DOE G 441.1-1C §4.0
3. External Dosimetry	10 CFR 835.401(a), 402(a), (b)	DOE G 441.1-1C §6.0
4. Internal Dosimetry	10 CFR 835.401(a), 402(c), (d)	DOE G 441.1-1C §5.0
5. Area Monitoring & Control a. Area Radiation Monitoring	10 CFR 835.401(a)	DOE G 441.1-1C §6.0
b. Airborne Radioactivity Monitoring	10 CFR 835.209, 401(a), 403	DOE G 441.1-1C §10.0
c. Contamination Monitoring & Control	10 CFR 835.401(a), Subpart L	DOE G 441.1-1C §11.0 DOE O 458.1
d. Instrument Calibration & Maintenance	10 CFR 835.401(b)	DOE G 441.1-1C §9.0
6. Radiological Control a. Radiological Work Planning	10 CFR 835.501(d), 1001(b), 1003	DOE-STD-1098-2017
b. Entry & Exit Controls	10 CFR 835 Subpart F	DOE G 441.1-1C §7.0
c. Radiological Work Controls	10 CFR 835 Subpart F, 1003	DOE G 441.1-1C §7.0
d. Posting and Labeling	10 CFR 835 Subpart G	DOE G 441.1-1C §12.0
e. Release of Materials & Equipment	10 CFR 835.1101	DOE G 441.1-1C 11.0
f. Sealed Radioactive Source Accountability & Control	10 CFR 835 Subpart M	DOE G 441.1-1C §15.0
g. Shipping & Receipt of Radioactive Materials	10 CFR 835.405	
7. Emergency Exposure Situations	10 CFR 835.1301, 1302	DOE O 151.1D
8. Nuclear Accident Dosimetry	10 CFR 835.1304	DOE G 441.1-1C §6.0
9. Records	10 CFR 835 Subpart H	DOE G 441.1-1C §13.0
10. Reports to Individuals	10 CFR 835 Subpart I	DOE G 441.1-1C §13.0
11. Radiation Safety Training	10 CFR 835 Subpart J	DOE G 441.1-1C §14.0
12. Radiation Exposure Limits	10 CFR 835 Subpart C	DOE G 441.1-1C §8.0
13. Radiation Generating Devices	10 CFR 835.1001(a), 1003	DOE G 441.1-1C §7.0
14. Respiratory Protection	10 CFR 835.403, 1001, 1003, App. A	DOE G 441.1-1C §10.0
15. Radioactive Waste Management	10 CFR 835.401(a), Subpart L	DOE O 435.1