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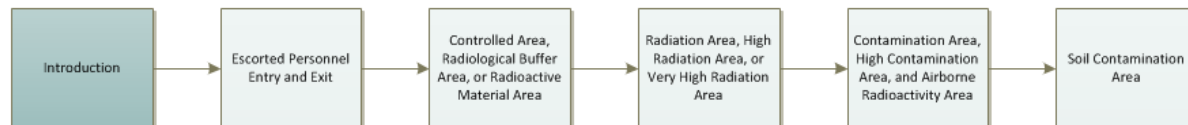
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Entry and Egress for Areas Controlled for Radiological Purposes Subject Area

Effective Date: Jul 12, 2017 ([Rev 1.3](#))

Periodic Review Due: **Apr 28, 2020**



[What you may need](#)



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Introduction

The purpose of this subject area is to provide the entrance and exit requirements for all areas controlled for radiological purposes. This subject area contains the minimum requirements for entry into posted areas. There may be additional facility-specific requirements. Consult with the [Facility Support Representative](#) for facility-specific radiological requirements.

To verify training sessions attended, check the training schedule on the [Training and Qualifications](#) Web site.

This subject area contains the following sections:

1. [Escorted Personnel Entry and Exit](#)
2. [Controlled Area, Radiological Buffer Area, or Radioactive Material Area Entry and Exit](#)
3. [Radiation Area, High Radiation Area, or Very High Radiation Area Entry and Exit](#)
4. [Contamination Area, High Contamination Area and Airborne Radioactivity Area Entry and Exit](#)
5. [Soil Contamination Area Entry and Exit](#)

Standards of Performance

All staff and guests shall ensure that personnel radiation exposure is maintained As Low As Reasonably Achievable (ALARA).

All staff and guests shall comply with applicable Laboratory policies, standards, and procedures, unless a formal variance is obtained.

All staff and users shall identify, evaluate, and control hazards in order to ensure that work is conducted safely and in a manner that protects employees, the environment and the public.

All staff and users shall ensure that they are trained and qualified to carry out their assigned responsibilities, and shall inform their supervisor if they are assigned to perform work for which they are not properly trained or qualified.

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Questions/Comments

Contacts ▾
SME: [Dennis Ryan](#), x5528
SBMS: x7267

Requirements



Training



Changes



Definitions



Forms/Exhibits



Add Keywords



Lessons Learned



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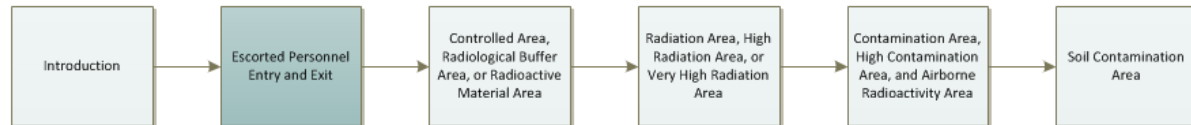
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What you may need



This information applies to BNL staff and non-BNL staff trained in General Employee Radiation Training (TQ-GERT) or Radiological Worker (RWT-001), who observes a significant deviation from Laboratory radiological work requirements.

Escorted Personnel Entry and Exit

[1.1 Person Under Escort Will Not Perform Work](#)

[1.2 Person Under Escort Will Perform Work](#)

1.1 Person Under Escort Will Not Perform Work

An escort can be used to allow unqualified individuals access into areas controlled for radiological purposes under the following conditions:

- Escort has all of the training required for the specific area;
- The escort obtains a written exemption, approved by the Radiological Control Division (RCD) Manager, for escort entry into a High Radiation Area;
- The person under escort will not perform work that has the potential to degrade radiological conditions in the area;
- Each person under escort (maximum of 5 individuals per escort) has received a documented waiver of training requirements for entry into the area; and
- The area is **NOT** a Very High Radiation Area, High Contamination Area, or Airborne Radioactivity Area.

Required Procedure:

1. The escort provides a briefing to the person(s) under escort regarding the hazards and controls for the area.
2. The person(s) under escort follows the instructions of the escort for entering and exiting the area.

1.2 Person Under Escort Will Perform Work

Persons who do not possess valid training qualifications for unescorted access to an area controlled for radiological purposes but who need to perform work that has the potential to degrade radiological conditions or provide the greater than 25 mrem Total Effective Dose (TED) in the area may perform this work if the following conditions are met:

- The [Facility Support Representative](#) has reviewed the work plan and authorized the performance of radiological work;
- The escort obtains a written exemption, approved by the Radiological Control Division (RCD) Manager, for escort entry into a High Radiation Area;
- The training of the unqualified person is no more than one level below the training required for unescorted access to the area
- Each person under escort (maximum of 5 individuals per escort) has received a waiver of training requirements by the [Facility Support Representative](#) for entry into the area;

Where to next



Contacts

SME: [Dennis Ryan](#), x5528

SBMS: x7267

Requirements



Training



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Definitions



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Add Keywords



Lessons Learned



- The work is performed under a task-specific Radiological Work Permit (RWP) and performed under continuous facility support coverage; and
- The area is **NOT** a Very High Radiation Area, High Contamination Area, or Airborne Radioactivity Area.

Required Procedure:

1. The [Facility Support Representative](#) provides a briefing to the untrained person(s) and the escort regarding the hazards and controls for the radiological work area.
2. The person under escort follows the instructions of the escort for entering and exiting the area.

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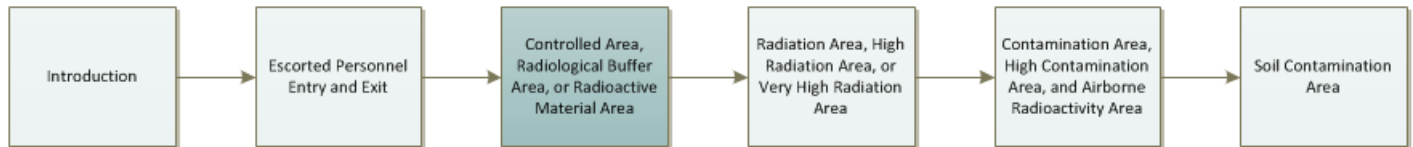
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SUBJECT AREA PROCEDURE CONTENT

Entry and Egress for Areas Controlled for Radiological Purposes

Subject Area
Effective Date: **Apr 28, 2015** ([Rev 1.2](#))
Periodic Review Due: **Apr 28, 2020**



This information applies to individuals requiring unescorted access to areas posted as a Controlled Area, Controlled Area - TLD Required, Radiological Buffer Area, or Radioactive Material Area.

Controlled Area, Radiological Buffer Area, or Radioactive Material Area Entry and Exit

1. For access to areas posted as Controlled Area, Controlled Area - TLD Required, or Radioactive Material Area where dispersible radioactive materials are **not in use**, radioactive materials are stored, or activation is possible, at a minimum, individuals must successfully complete [General Employee Radiological Training \(GERT\)](#). For access to an area posted as a Radioactive Material Area where dispersible radioactive materials are **in use**, individuals must meet the following requirements:

- [Radiological Worker 1 Training](#)
- Benchtop Dispersible Training/Contamination Worker Training (RWT-500)
- Sign in on the appropriate Radiological Work Permit (RWP)

For access to an area posted as a Radiological Buffer Area, at a minimum, the individual must successfully complete [Radiological Worker 1 Training](#), sign in on the appropriate RWP if one is required for access, and complete any one of the following training courses that demonstrate the use of a handheld contamination monitor (frisker):

- Radiological Buffer Area (RBA) Access training (RWT-002A)
- Contamination worker training (RWT-300)
- Benchtop dispersible training (RWT-500)

Individuals entering an area within an area controlled for radiological purposes must successfully complete the necessary training required for the radiological area being entered.

2. The individual must wear a Thermoluminescent Dosimeter (TLD) and any other personnel monitoring devices or Personnel Protective Equipment (PPE) as specified for the area by the radiological posting or in the RWP if one is required.
3. To exit a Controlled Area, Controlled Area - TLD Required, or Radioactive Material Area where dispersible radioactive materials are **not in use** and activation is not possible, follow the requirements of the radiological posting.
4. To exit a Radiological Buffer Area or a Radioactive Material Area where dispersible material are **in use**, individuals must perform the following:
 - Follow the requirements of the RWP if one is required
 - Remove PPE and perform contamination monitoring
 - Contact Facility Support for radiological surveys prior to removal of your tools from the area.

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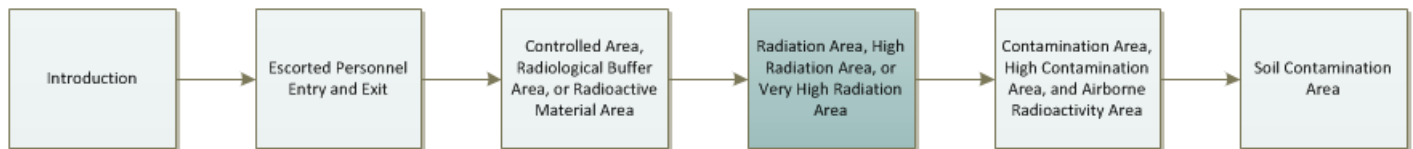
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Entry and Egress for Areas Controlled for Radiological Purposes

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This information applies to individuals requiring unescorted access to an area posted as a Radiation Area, High Radiation Area, or Very High Radiation Area.

Radiation Area, High Radiation Area, or Very High Radiation Area Entry and Exit

1. An individual requiring entry into a Radiation Area, High Radiation Area, or Very High Radiation Area, at a minimum, must successfully complete [Radiological Worker I Training](#).
2. For access to a High Radiation Area or Very High Radiation Area, the individual and their immediate supervisor must ensure that the individual's prior radiation dose plus the anticipated dose from the proposed job will not exceed the worker's administrative control level.
3. The [Facility Support Representative](#), Radiological Control Technician (RCT), or individual specifically qualified to perform radiation surveys must verify that the radiation field that produced a Very High Radiation Area was terminated prior to allowing anyone to enter the area.
4. All posted areas require a Radiological Work Permit (RWP) for entry. Contact the [Facility Support Representative](#) to obtain the RWP and follow all requirements of the RWP including all instructions provided at any required pre-job briefing. Your signature on the RWP identifies that you understand and will follow the requirements of the RWP.
5. For access to a High Radiation Area without an RCT or Facility Support Representative and the RWP identifies continuous coverage to verify dose rates, the individual must:
 - be trained in the use of a survey meter (e.g., RO-20); and
 - have the meter/dose rate indicating device with them inside the posted area.Consult with the [Facility Support Representative](#) for additional guidance.
6. When leaving any of these areas, sign out of the RWP, record the final EPD dose reading if used, and return any additional dosimetry used to the [Facility Support Representative](#) or RCT. Return the TLD to the proper badge board or appropriate storage location at the end of each workday.

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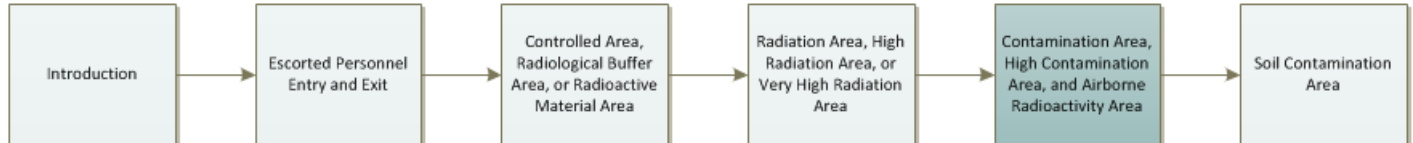
SUBJECT AREA PROCEDURE CONTENT

Entry and Egress for Areas Controlled for Radiological

Purposes Subject Area

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This information applies to individuals requiring unescorted access to an area posted as a Contamination Area, High Contamination Area, or Airborne Radioactivity Area.

Contamination Area, High Contamination Area and Airborne Radioactivity Area

1. An unescorted individual entering a Contamination Area, High Contamination Area, or Airborne Radioactivity Area, at a minimum, must successfully complete [Radiological Worker 1 Training](#) and [Contamination/High Contamination/Airborne Radioactivity Training](#) (RWT-300).
2. All of these posted areas require a Radiological Work Permit (RWP) for entry. Contact the Facility Support Group to obtain the RWP. Follow all requirements of the RWP including all instructions provided at any required pre-job briefing. Your signature on the RWP identifies that you understand and will follow the requirements of the RWP.
3. When exiting any of these areas:
 - Monitor yourself for contamination as specified by the RWP or [Facility Support Representative](#)/Radiological Control Technician (RCT) instructions; and
 - Coordinate with the RCT or [Facility Support Representative](#) to monitor tools, equipment, personal items (e.g., pens, clipboards, etc.) or other items to be removed from the area controlled for radiological purposes.Consult with the [Facility Support Representative](#) or RCT for additional guidance.
4. Sign out of the RWP and return any additional dosimetry used to the [Facility Support Representative](#) or RCT. Submit a post-job bioassay (if required) by the RWP. Return the TLD to the proper badge board or appropriate storage location at the end of each workday.

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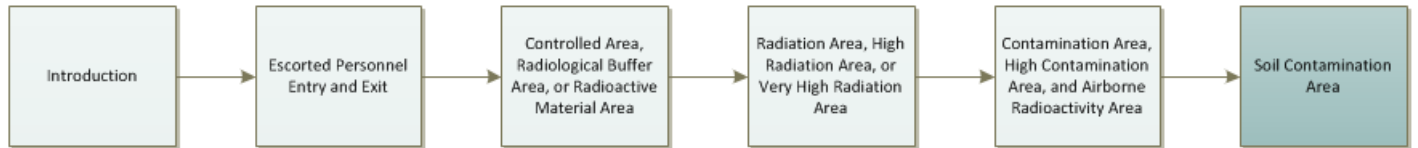
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Entry and Egress for Areas Controlled for Radiological

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This information applies to individuals requiring unescorted access to an area posted as a Soil Contamination Area.

Soil Contamination Area Entry and Exit

1. If the area posted as a Soil Contamination Area has contamination levels **lower** than those required to make the area a Contamination Area, an unescorted individual entering the area must have a need to be in the area and at a minimum, must successfully complete [General Employee Radiological Training \(GERT\)](#).

Or

If the area has contamination levels **higher** than those required to make the area a Contamination Area, an individual entering the area must have a need to be in the area and must successfully complete [Radiological Worker 1 Training](#) and [Contamination/High Contamination/Airborne Radioactivity Training](#).

2. Contact the [Facility Support Representative](#) and/or Radiological Control Technician for specific entry and exit requirements.

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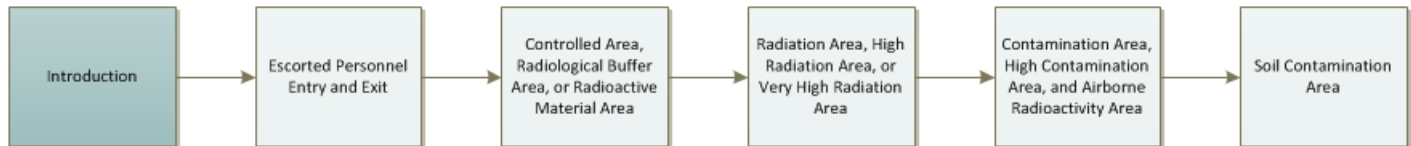
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REQUIREMENTS CONTENT

Entry and Egress for Areas Controlled for Radiological Purposes

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Reporting Obligations

This subject area contains the following reporting obligations:

- Personnel immediately report any exposure, or suspected exposure exceeding the regulatory dose limits to their supervisor, Facility Support Representative, and Radiological Control Division Managers.

External/Internal Requirements

BNL has to abide by all applicable Prime Contract clauses, DOE directives, industry standards, as well as Federal, state, and local laws. BNL develops its policies and procedures based on an evaluation of these external requirements. This Subject Area implements the following requirements:

Requirement Number	Requirement Title
10 CFR 830. Subpart A	Energy, Nuclear Safety Management, Quality Assurance Requirements
10 CFR 830.200 - Subpart B	Safety Basis Requirements
10 CFR 835	Energy/Occupational Radiation Protection
20 CFR Parts 1 and 30 (EEOICPA)	Interim Final Rule Implementing the Energy Employees Occupational Illness Compensation Program Act (EEOICPA)
42 CFR 82 Dept of Health and Human Services	Methods for Radiation Dose Reconstruction Under the Energy Employees Occupational Illness Compensation Program Act of 2000; Final Rule
BSA Contract No. DE-SC0012704 - Clause C.4	Statement Of Work
BSA Contract No. DE-SC0012704 - Clause I.131 (DEAR 970.5223-1)	INTEGRATION OF ENVIRONMENT, SAFETY, AND HEALTH INTO WORK PLANNING AND EXECUTION (DEC 2000)
DOE Secretary of Energy Memorandum (January 12, 2000): Contaminated Metals	Moratorium on the Department's Release of Volumetrically Contaminated Metals
DOE Secretary of Energy Memorandum (January 19, 2001):Scrap Materials	Managing the Release of Surplus and Scrap Materials
DOE Secretary of Energy Memorandum (July 13, 2000):Scrap Materials	Release of Surplus and Scrap Materials
O 231.1B Admin Change 1 (Nov 28 2012)	Environment, Safety and Health Reporting
O 410.2	Management of Nuclear Materials
O 414.1D Admin Chg 1 (May 8, 2013)	Quality Assurance

O 420.1C (Dec 12, 2012)	Facility Safety
O 420.2C(Jul 21, 2011)	Safety of Accelerator Facilities
O 433.1B (Apr 21, 2010)	Maintenance Management for DOE Nuclear Facilities
O 435.1 Change 1	CRD - Radioactive Waste Management
O 458.1 Change 2(Jun 6, 2011)	Radiation Protection of the Public and Environment
P 420.1 (February 8, 2011)	Department of Energy Nuclear Safety Policy
P 450.4A (Apr 25, 2011)	Integrated Safety Management Policy

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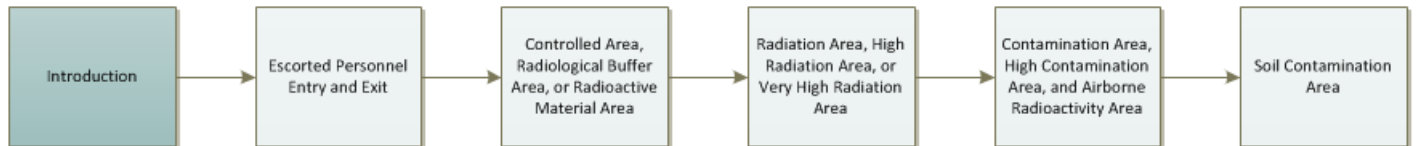
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TRAINING CONTENT

Entry and Egress for Areas Controlled for Radiological Purposes

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Training

This subject area contains the following training requirements (see the [BNL Training and Qualifications](#) website):

- Radiological Buffer Area (RBA) Access training (RWT-002A)
- Contamination worker training (RWT-300)
- Contamination worker Practical (RWT-300A)
- Benchtop dispersible training (RWT-500)
- General Employee Radiation Training (TQ-GERT)
- Radiological Worker (RWT-001).

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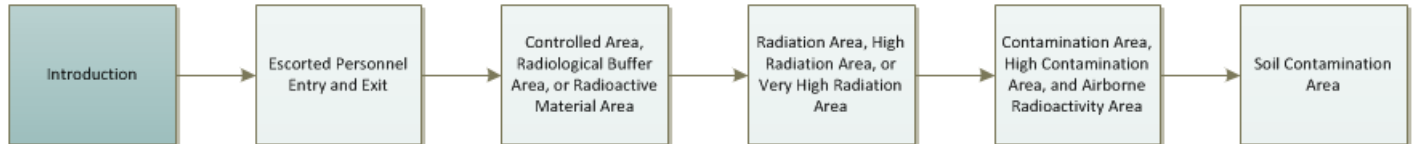
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CHANGES CONTENT

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Revision History

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Revision Number	Revision Type	Revision Date	Revision Description
1.2	Minor	04/28/2015	The subject area was completely reviewed and published in the new SBMS layout with minor editorial changes.
1.1	Minor	06/03/2013	This was a minor revision for clarification of requirements to step 5 in the section Radiation Area, High Radiation Area, or Very High Radiation Area Entry and Exit.
1.0	Major	07/29/2010	The Radiological Control Division (RCD) Entry/Egress Requirements for Areas Controlled for Radiological Purposes (FS-SOP-4027) standard operating procedure was previously used as the SBMS procedure for the BNL complex. The new (reissued) Entry and Egress for Areas Controlled for Radiological Purposes Subject Area provides the entrance and exit requirements for areas controlled for radiological purposes.

NOTE: The dates for "Major Revisions" match the Subject Area Effective Date. Major and/or Minor revisions may not always match with the "Last Modified Date", since this date could reflect changes to links or spelling. Records of changes are maintained in the SBMS documentation for each subject area.

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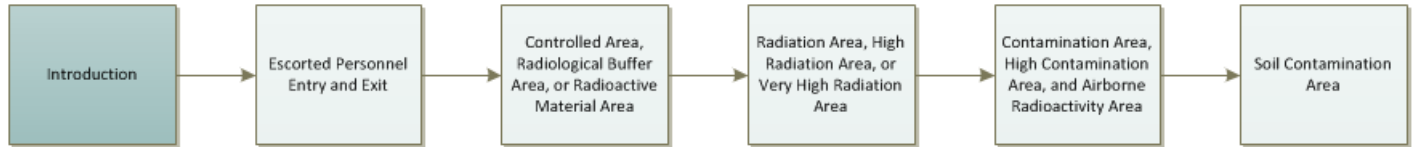
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DEFINITION CONTENT

Entry and Egress for Areas Controlled for Radiological Purposes

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Definitions

Term	Definition
Administrative Control Level (ACL)	A numerical dose constraint established at a level below the regulatory limits to administratively control and help reduce individual and collective dose.
Airborne Radioactive Area	Any area, accessible to individuals, where: <ol style="list-style-type: none"> 1. Concentration of airborne radioactivity, above natural background, exceeds or is likely to exceed derived air concentration (DAC) values listed in Appendix A or C of 10 CFR 835; or 2. An individual present in the area without respiratory protection could receive an intake exceeding 12 DAC-hours in a week.
Areas Controlled for Radiological Purposes	For the purposes of this procedure it includes: Controlled Areas, Contamination Areas, High Contamination Areas, Airborne Radioactivity Areas, Radioactive Material Areas, Buffer Areas, Soil Contamination Areas and Underground Radioactive Material Areas. Any area where an item could have become contaminated through activation.
Contamination Area	Any area, accessible to individuals, where removable surface contamination levels exceed or are likely to exceed the removable surface contamination values specified in Appendix D of 10 CFR 835, but do not exceed 100 times those values.
Controlled Area	Any area to which access is managed by or for DOE to protect individuals from exposure to radiation and/or radioactive material.
dispersibles	Radioactive material with physical characteristics that allow it to be easily released or removed from an area through normal contact or use (e.g., liquids, powders, gases).
dose limit	A numerical dose constraint established by regulatory authority in federal regulation or by contractual authority through a DOE Order or Directive.
escort	A trained worker who accompanies an untrained individual into an area controlled for radiological purposes.
High Contamination Area	Any area, accessible to individuals, where removable surface contamination levels exceed or are likely to exceed 100 times the removable surface contamination values specified in Appendix D of 10 CFR 835.
High Radiation Area	Any area, accessible to individuals, in which radiation levels could result in an individual receiving an Equivalent Dose to the whole body in excess of 0.1rems (0.001 Sv) in 1 hour at 30 centimeters from the radiation source or from any surface that the radiation penetrates.
personnel monitoring devices	A Self-Reading Dosimeter (SRD) or electronic dosimeters.

Radiation Area	Any area, accessible to individuals, in which radiation levels could result in an individual receiving an equivalent dose to the whole body in excess of 0.005 rem (0.05 mSv) in one hour at 30 centimeters from the source or from any surface that the radiation penetrates.
radioactive material area	Any area within a Controlled Area, accessible to individuals, in which items or containers of radioactive material exist and the total activity of radioactive material exceeds the applicable values provided in Appendix E of 10 CFR 835.
radiological area	Any area within a "CONTROLLED AREA," posted as a "RADIATION AREA," "HIGH RADIATION AREA," "VERY HIGH RADIATION AREA," "CONTAMINATION AREA," "HIGH CONTAMINATION AREA," or "AIRBORNE RADIOACTIVITY AREA."
Radiological Buffer Area	An intermediate area established as necessary around locations where dispersible radioactive material is generated or used to allow for one or more of the following: <ol style="list-style-type: none"> 1. Minimize the potential spread of contamination outside of an area posted for the control of dispersible radioactive material. 2. Transit between contaminated work areas with the minimal removal of Personnel Protective Equipment (PPE).
Radiological Work Permit	Permit that identifies radiological conditions, establishes worker protection and monitoring requirements, and contains specific approvals for radiological work activities. The Radiological Work Permit serves as an administrative process for planning and controlling radiological work and informing the worker of the radiological conditions.
soil contamination	Soil that contains radioactive material in excess of DOE Order 5400.5 concentrations release criteria or Interagency Record of Decision Consent Levels.
special dosimetry	Types of radiation monitoring devices in addition to the regular TLDs, such as finger ring TLDs and location specific TLDs.
trained	Having the appropriate documented training and/or current qualifications, as defined in this procedure, to be unescorted in an area controlled for radiological purposes.
unescorted access	An individual entering an area controlled for radiological purposes alone, assuming they have completed facility-specific training and there are not restrictions to this action on the Radiological Work Permit (RWP).
untrained	Not having the appropriate documented training and/or current qualifications, as defined in this procedure, to be unescorted in an area controlled for radiological purposes.
Very High Radiation Area	Any area, accessible to individuals, in which radiation levels could result in an individual receiving an absorbed dose in excess of 500 rads (5 Grays) in one hour at 1 meter from a radiation source or from any surface that the radiation penetrates.

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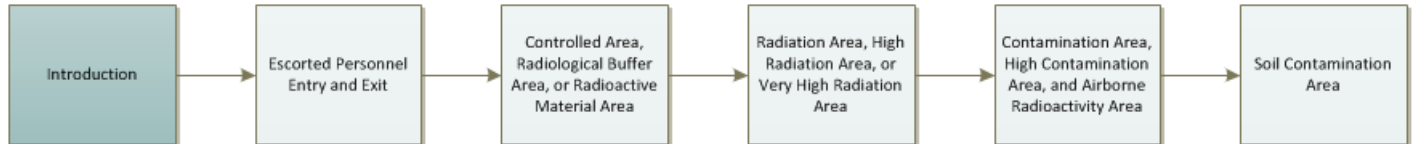
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LESSONS LEARNED CONTENT

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Lessons Learned

BNL's Lessons Learned Program supports ongoing learning by collecting and sharing work experiences and good practices. This allows us to better understand risks and hazards and develop strategies to control them. Many managers share selected Lessons Learned with their staff at daily briefings and morning meetings to update everyone's knowledge and skills. The Program draws information from BNL, the DOE complex, and private industry. For more, [see the BNL Lessons Learned Program website](#).

Here is a selection of recent Lessons Learned related to this particular Subject Area:

Title	Date
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