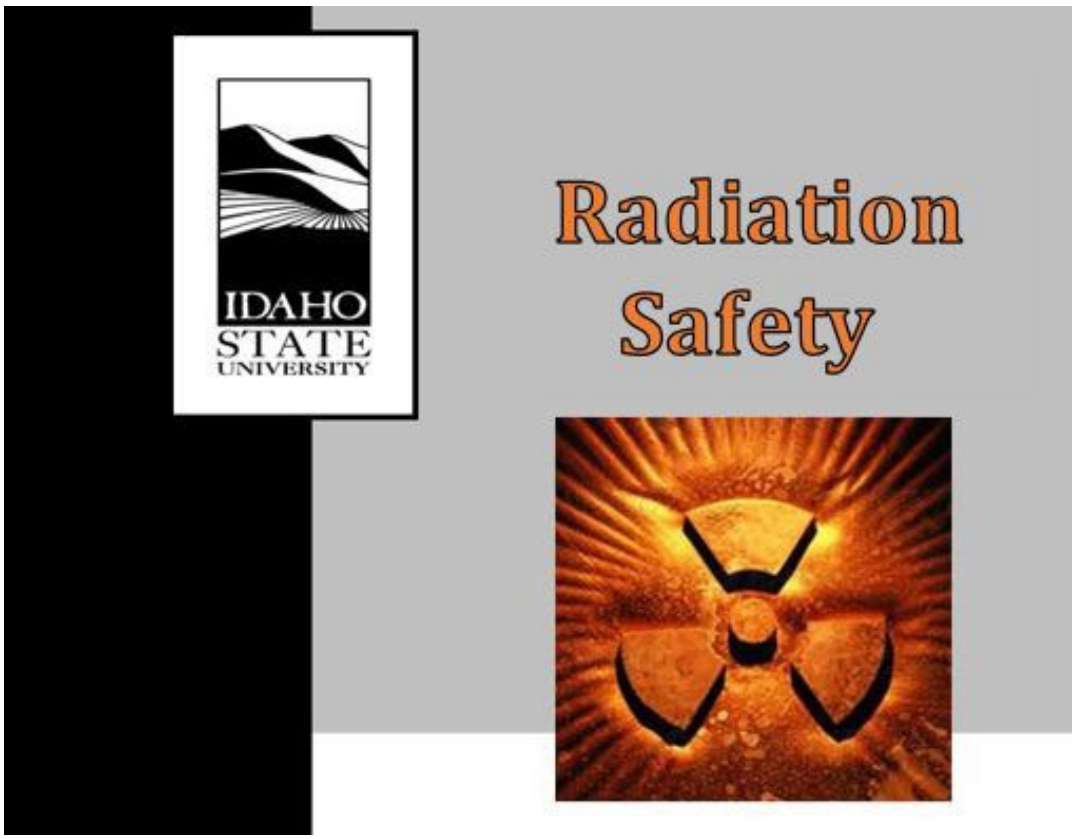

RADIATION PROCEDURES MANUAL

Procedure Cover Sheet

Procedure Title:	Developing Radiological Work Permits
Procedure Number:	RS-14 Rev.1
Effective Date:	4/29/2026

Approved By: Radiation Safety Committee Date: 4/29/2026

Revision History

Revision Number	Author Name	Date	Approved by/date
RS 14.0	Mason Jaussi & John Longley	12/04/19	RSO-12/05/19
RS 14.0	Mason Jaussi	03/31/22	RSC-12/05/19
RS 14.0	Kishor Paudel	03/27/24	RSC-12/05/19
RS 14.1	Mason Jaussi	04/03/26	RSC-04/29/26

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1. INTRODUCTION

The radiological work permit (RWP) is an administrative control used to establish radiological controls for proposed work activities in Contamination Areas (CAs). The RWP is intended to inform the worker of the radiological conditions, entry requirements, and any special considerations for performing the proposed work activities. RWP's can supplement a procedure or include specific steps and act as a stand-alone procedure for certain radiological work evolutions. RWP's can be used for short, one-time specific jobs, or for long-term routine jobs performed in temporary CA's or Radiologically Controlled areas. The proper use and function of the RWP is at the discretion of the Radiation Safety Officer (RSO).

2. PURPOSE

The purpose of this procedure is to outline the steps required for developing an RWP.

3. SCOPE

Idaho State University implements RWPs for all operations performed in Contamination Areas (CA). The CA designation implies that levels of removable radioactive contamination may readily exceed beta-gamma emissions of 1,000 dpm/100 cm^2 and alpha emissions of 20 dpm/100 cm^2. RWPs may also be developed for jobs that have the potential to create a contamination area. This procedure also covers developing Contaminated Equipment Radiological Controls (CERC) forms which establish the radiological controls for working in equipment labeled with Internal Contamination stickers e.g., fume hoods, gloveboxes, etc.

4. ROLES AND RESPONSIBILITIES

- Radiation Safety staff develop the RWP. The Authorized User ensures appropriate PPE is available and surveys of contaminated items are performed. The Radiation Safety Department ensures dosimetry is available and electronic dosimetry alarm levels are set appropriately.
- Radiation Workers are responsible for understanding and complying with all of the requirements specified in the RWP.
- Authorized User review and approve the RWP.
- Radiation Safety Officer review and authorize the RWP.

5. ACRONYMS/DEFINITIONS

ALARA: As Low As Reasonably Achievable
CA: Contamination Area
CERC: Contaminated Equipment Radiological Controls
ED: Electronic Dosimeter
OSLD: Optically Stimulated Luminescence Dosimeter
PPE: Personal Protective Equipment
RSO: Radiation Safety Officer
RWP: Radiological Work Permit
TLD: Thermal Luminescent Dosimeter

6. REQUIRED MATERIAL(S)

- None.

7. REQUIRED TRAINING(S)

- ISU Radiation Safety Training

8. PROCEDURE

8.1. Developing Radiological Work Permits

It is strongly advised that individuals developing RWP's consult with the radiation control technicians, operators, and other affected personnel while developing the RWP. Their feedback is critical to the proper development of a functional RWP. Additionally, the Radiation Safety Officer may require a technical evaluation to support the radiological controls specified in an RWP.

8.1.1. General Information for filling out an RWP

Enter appropriate information in the header section: Permit Number, Authorized User, RWP Number, Location, and Work Description

8.1.2. Radiological Conditions

This section of the RWP should identify the expected contamination levels and dose rates within the designated work area. You can access this information through the latest survey of the area, or by referencing the most recent survey available. Supporting measurements should be taken or obtained during the initial writing of the RWP. The additional information section should identify any other information pertaining to the radiological conditions in the area to necessary to inform the worker.

8.1.3. PPE Requirements

This section identifies the personal protective equipment (PPE) required for the job. The PPE should be selected based on the expected levels of contamination, the probability of spreading that contamination, and with consideration for other collocated hazards.

8.1.4. Dosimetry Requirements

The dosimetry requirements are based on the expected dose rates in the work area. Whole-body OSLs are always required. Extremity dosimetry is required for work that may result in extremity doses greater than 5000 mrem in a year. Electronic dosimeters are typically required in High Radiation Areas and have the cumulative dose and dose rate alarms enabled with the set points corresponding to a fraction of the expected dose per job. The electronic dosimeter chirp rate should also be adjusted to an appropriate scale when applicable.

8.1.5. Contamination Control Requirements

This section is used to identify controls to ensure removable contamination is confined and controlled within the CA or controlled work area. These controls could include the use of work area coverings, anticontamination clothing/PPE when exiting the CA, restricting the use of certain pneumatic tools to prevent airborne contamination, use of containers and/or absorbents to contain liquids, etc. Development of these controls requires an in-depth understanding of the work to be performed in the area and consulting with the workers is essential to developing appropriate contamination controls.

8.1.6. Exposure Control Requirements

This section identifies controls and/or steps the worker must take to keep their external exposure ALARA. These controls should include the use of long-reach tools for handling high dose rate materials, use of mobile shielding (e.g., leaded glass) wherever practical, storing materials in or behind shields when not in use, increasing distance from sources as much as practical, and minimizing time spent in radiation areas through efficient job planning and execution to avoid unnecessary delays, etc.

8.1.7. Survey Requirements

This section identifies the type of survey required for personnel, the work area, and equipment upon completion of the job and leaving the CA or controlled work area. The type of survey is based on the expected contamination levels in the work area and can include requirements for Personnel Surveys, Work Area Surveys, and Equipment Surveys.

8.1.8. Limiting Conditions

Limiting conditions should be identified along with actions to be taken if these conditions are met, such as placing the work in a safe configuration and stopping work. These conditions may include the detection of personnel contamination, accumulated dose thresholds, or other off-normal or unplanned events.

8.1.9. Additional Requirements

This section may also reference existing procedures when applicable or provide procedural steps as deemed appropriate by the Radiation Safety Officer.

8.1.10. Air Monitoring

This section should identify if lapel sampling, high volume air sampling, or continuous air monitoring is required for the job. A separate technical evaluation should be created to document the basis for the selection or non-applicability of air monitoring.

8.1.11. Approvals

Sign and date for form and route to the RSO for approval.

8.2. Contaminated Equipment Radiological Controls Forms

Complete a CERC form to specify radiological controls for working in equipment (fume hoods, glove boxes, etc) labeled as Internal Contamination. A CERC form should be developed for work involving internally contaminated equipment not already covered by an RWP. The CERC form can be developed for specific pieces of equipment or be applied broadly to cover certain laboratory glove boxes, fume hoods, etc. and is at the discretion of the Radiation Safety Officer.

8.2.1. General Information for filling out a Contaminated Equipment Radiological Controls (CERC) Form

Enter the appropriate information in the header section: Authorized User & Permit #, Location, and Equipment Description. The Additional Requirements section may reference existing procedures when applicable.

8.2.2. PPE Requirements

This section identifies the personal protective equipment (PPE) that is required for working in the equipment. The PPE should be selected based on the expected levels of contamination and the probability of spreading that contamination.

8.2.3. Dosimetry Requirements

The dosimetry requirements are based on the expected dose rates in the work area\equipment. Whole-body OSLs are always required. Extremity dosimetry is required for work that may result in extremity doses greater than 5000 mrem in a year. Electronic dosimeters are typically required in High Radiation Areas and have the cumulative dose and dose rate alarms enabled with the set points corresponding to a fraction of the expected dose per job. The electronic dosimeter chirp rate should also be identified when applicable.

8.2.4. Equipment Release Survey Requirements

This section identifies the survey requirements for removal of equipment or material from the contaminated equipment. Release surveys will be performed in accordance with RS-03. Include instructions for contacting the Radiation Safety Department if internal surfaces are present.

8.2.5. Additional Requirements

This section includes any instructions that may reduce the spread of contamination or increase the overall safety of the worker performing the job. (e.g., Frisk hands and/or change outer gloves when handling equipment outside the fume hood, lapel sampling, air monitoring, etc.)

8.2.6. Survey Requirements

This section identifies the requirements for hands/feet, whole-body, and work area surveys. If necessary, enter a location for performing hand and foot frisks and whole-body frisks considering possible interference from high radiation fields. Enter the daily post job survey requirements as required by RS-03.

8.2.7. Notification Requirements

Enter the notification requirements for contacting the Radiation Safety Department. Typical notifications are required when removable contamination levels which exceed ISU Action Levels (Table 7 of the Radiation Safety Manual) are measured outside of the contaminated equipment or if contamination exceeding 2x the background is detected on personal clothing or skin.

8.2.8. Approvals

Sign and date for form and route to the RSO for approval.

9. LIST OF FORMS

Radiological Work Permit

Contaminated Equipment Radiological Controls Form

10. REFERENCES

None.

11. CHANGE HISTORY

Revision 1 – Revision included adding sections to the RWP to ensure limiting conditions are clearly defined, the area's radiological conditions are defined, a specific section for air monitoring, exposure control, and added clarity and conciseness to the procedure.

12. APPENDICES

None.