



RADIATION PROCEDURES MANUAL

Procedure Cover Sheet

Procedure Title: Radiological Work Permits

Procedure Number: RS-14 Rev0

Effective Date: 1-30-2020

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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.

2. PURPOSE

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

3. SCOPE

Idaho State University implements RWPs for all operations performed in Contamination Areas. The CA designation implies that levels of removable radioactive contamination may readily exceed beta-gamma emissions of 1,000 dpm/100 cm² and alpha emissions of 20 dpm/100 cm².

4. ROLES AND RESPONSIBILITIES

- Radiation Safety staff develop the RWP for the proposed work in a CA. 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. REQUIRED MATERIALS

- Radiation Safety Training
- RWP or Contaminated Equipment form



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6. PROCEDURE

6.1. Developing an RWP

Complete the following instructions to develop an RWP

1) General Information

Complete this form to specify radiological controls for working in Contamination Areas (CAs). Instructions may reference existing procedures when applicable. Enter appropriate information in the header section (Permit Number, Authorized User, Location, Start Date, End Date, and Equipment Description).

2) PPE Requirements

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

3) Dosimetry Requirements

The dosimetry requirements are based on the expected dose rates in the work area. The required dosimetry for a job performed in a High Radiation Area is as follows:

- a. Whole-body dosimeter (OSL or TLD),
- b. Electronic dosimetry with the following alarm set points:
 - i. 50 mrem cumulative dose alarm
 - ii. 100 mrem/hr dose rate alarm
- c. Extremity OSL is required for work that may result in extremity doses greater than 5000 mrem in a year.

4) 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. For example:

- a. Change shoe covers immediately upon exiting the CA

5) Survey Requirements

This section identifies the type of survey required for personnel, the work area, and equipment upon completion of the job. The type of survey is based on the expected contamination levels in the work area.



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a. Personnel Survey

This section instructs the worker to survey their hands, feet, and/or whole-body. In areas with elevated radiation fields the worker should be instructed to frisk their hands and feet immediately upon exiting the CA and move to an area with a lower radiation field to perform a whole-body frisk.

b. Work Area Survey

A work area survey typically involves the worker taking a large area wipe (LAW) of the work area when high contamination levels are expected. Alternatively, radiation workers may collect swipe samples and frisk areas with a GM detector.

c. Equipment Survey

An equipment survey typically involves the worker taking a LAW of the equipment used when high contamination levels are expected.

6) Notification Requirements

This section identifies situations that require notification of the Authorized User and Radiation Safety Officer. The notification requirements are as follows:

- a. Electronic dosimeter reading 50 mrem
- b. Area contamination levels as necessary to control contamination for the operation.
- c. Personnel contamination levels, on skin or personal clothing, that exceed 2x the instruments background reading.

7) Approvals

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

6.2. Completing the Contaminated Equipment Radiological Controls Form

1) General Information

Complete this form to specify radiological controls for working in equipment (fume hoods or glove boxes) labeled Internal Contamination. Instructions may reference existing procedures when applicable. Enter appropriate information in the header section (Permit Number, Authorized User, Location, Start Date, End Date, and Equipment Description).



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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.

3) Equipment Release Survey Requirements

This section identifies the survey requirements for removal of equipment or material from the glove box or fume hood. Normal release surveys will include complete frisk with a GM probe, large area wipe over the entire item, and swipe samples. Include instructions for contacting the Radiation Safety Department if internal surfaces are present.

4) 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.

For example: Frisk hands or change outer gloves when handling equipment outside the fume hood.

5) Survey Requirements

Enter the 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 using a large area wipes, swipe samples, and direct frisk as applicable.

6) Notification Requirements

Enter the requirements for contacting the Radiation Safety Department for contamination levels in the post job area and for personnel surveys.

7) Approvals

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