



INTERNATIONAL
TECHNOLOGY
CORPORATION

IT CORPORATION

STANDARD OPERATING PROCEDURE

NUMBER: RPP-015

TITLE: Control of Radiological Work

APPROVED: [Signature]
Corporate Director of
Health and Safety

DATE: 9-27-96

APPROVED: [Signature]
Health Physics Professional

DATE: 9/23/96

APPROVED: [Signature]
Corporate Director of
Quality Assurance

DATE: 26 Sep 96

CONTROLLED COPY NO. : _____

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1 PURPOSE AND OBJECTIVES

This procedure establishes the method to be followed in obtaining a Radiation Work Permit (RWP). This procedure applies to all work within a radiologically controlled area at a fixed facility or field work site, or when working with Category III radioactive samples, or other non-radiologically controlled area work for which a RWP is deemed necessary by the Radiation Safety Officer (RSO).

2 RESPONSIBILITIES

2.1 RSO, or his designee shall:

- 2.1.1 Maintain a supply of Radiation Work Permit Forms (Attachment 1).
- 2.1.2 Insure that all work performed inside a radiologically controlled area is covered by a current RWP.
- 2.1.3 Perform periodic surveillance to determine compliance with this procedure by fixed facility or field personnel.

2.2 Authorized Users

- 2.2.1 Initiate RWP's for all work in a radiologically controlled area or when directed by the RSO. Complete Section I which includes job location, issue date, shift, expiration date, brief job description, and signature. (See Attachment 1).
- 2.2.2 Review completed RWP's with team members and obtain their signatures on the RWP.
- 2.2.3 Post completed RWP's at the work location or maintain at the work site.
- 2.2.4 Ensure that RWP requirements are followed by task team members.

2.3 RSO or Designee shall:

- 2.3.1 Complete Section II of the RWP.
- 2.3.2 Review completed RWP's with the Team Leaders. Provide additional instructions if required.
- 2.3.3 Monitor compliance of task team members to RWP requirements.
- 2.3.4 Maintain copies of completed RWP's in facility or project Health and Safety working files

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2.4 Team Members Shall:

- 2.4.1 Read the RWP and sign the RWP to indicate knowledge and understanding of requirements and intent to comply with those requirements.
- 2.4.2 Perform the work in accordance with the requirements specified in the RWP.

3 REFERENCES

3.1 Requirements and Specifications

- 3.1.1 IT Corporation Policy No. HS-700, "Radiation Protection Program Plan"
- 3.1.2 Title 10, Code of Federal Regulations, Part 20, "Standards for Protection Against Radiation"

3.2 Related Procedures

- 3.2.1 IT Corporation Procedure No. RPP-010, "Radiation Protection Records"
- 3.2.2 IT Corporation Procedure No. RPP-001, "Internal Exposure Control"
- 3.2.3 IT Corporation Procedure No. RPP-002, "External Exposure Control"
- 3.2.4 IT Corporation Procedure No. RPP-003, "Contamination Control"
- 3.2.5 IT Corporation Procedure No. RPP-004, Instrumentation and Surveillance
- 3.2.6 IT Corporation Procedure No. RPP-005, Radiological Areas and Posting
- 3.2.7 IT Corporation Procedure No. RPP-006, "Sample Screening and Classification"
- 3.2.8 IT Corporation Procedure No. RPP-008, "Engineered Controls and Respiratory Protection"

3.3 Others

- 3.3.1 "Health Physics Manual of Good Practices for Reducing Radiation Exposure to Levels that are As Low As Reasonably Achievable (ALARA)," Department of Energy Manual, PNL-6577, June, 1988.



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4 DEFINITIONS

- 4.1 Approval - An act of endorsing or adding positive authorization or both.
- 4.2 Health Physics Professionals (HPP) - Individuals who, by virtue of their education, and experience, approve and provide oversight for work involving or pertaining to radioactivity. The HPP shall be Certified by the American Board of Health Physics (Comprehensive).
- 4.3 May - The word **may** is used to denote permission.
- 4.4 Radiologically Controlled Area - An area where access is restricted in order to reduce the likelihood of exposure to radiation or radioactive contamination.
- 4.5 Radiation Safety Officers (RSO) - Individuals who, by virtue of training and/or experience, have been authorized to develop, administer and implement a radiation protection program. Fixed facility RSOs are specified by federal or state license requirements, and shall not be changed without notification of the appropriate licensing authority. Fixed facility RSOs are authorized to use or directly supervise the use of radioactive materials under the specifications of a specific radioactive materials license. Project RSOs shall be selected by the HPP.
- 4.6 Radiation Work Permit (RWP) - An authorizing document that establishes the radiological requirements for working with known or potential radiological hazards. Its purpose is to inform personnel on work scope to define controls to prevent the spread of contamination and to inform workers of existing radiological conditions. This document may also be specified as a "Radiation Work Permit" (RWP).
- 4.7 Screening - Gross measurement of radiations emitted from a sample likely to contain significant quantities of radioactive material.
- 4.8 Shall - The word **shall** is to be understood as a requirement.
- 4.9 Should - The word **should** is to be understood as a recommendation.

5 EQUIPMENT/MATERIALS REQUIRED

- 5.1 Portable radiation survey meter, capable of detecting the radiation likely to be emitted from the samples being analyzed or from the radiological materials at a field site.
- 5.2 Container suitable for collecting contaminated waste and trash.
- 5.3 Warning signs and banners capable of identifying the radiologically controlled zone and entry requirements.

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6 METHODOLOGY

- 6.1 A RWP shall be used to establish the radiological requirements for working with known or potential radiological hazards.
- 6.2 At a fixed facility potentially radiologically contaminated samples shall be screened and classified before analysis.
- 6.3 The work supervisor shall request a RWP from the RSO before Category III samples are analyzed.
- 6.4 At a fixed facility or job site the RSO shall establish the requirements for the RWP after discussing the job with the work supervisor and having reviewed radiation surveys of the job site to evaluate radiological conditions.
- 6.5 Personnel working inside a radiologically controlled area without an escort shall:
 - 6.5.1 Complete the radiation safety training courses required by the NRC license, and the IT procedure HS-050;
 - 6.5.2 Meet the posted entry requirements; and
 - 6.5.3 Participate in the routine bioassay program, if any.
- 6.6 Personnel who have not completed the requirements specified above, may enter a radiologically controlled area if approved by the RSO, and shall be escorted by a person designated by the RSO.
- 6.7 The RSO shall establish the following provisions:
 - 6.7.1 RWP number. This number shall be the month and year that the RWP shall be issued, plus a sequential number at the end (ex., 0591-01). This information shall be entered into a log maintained by the RSO.
 - 6.7.2 Protective requirements specified on the RWP form.
 - 6.7.3 Special instructions specified on the RWP form.
 - 6.7.4 Approval signature.
- 6.8 A RWP shall be valid for seven (7) consecutive days, unless otherwise noted.
- 6.9 If an activity covered by a RWP exceeds seven (7) days, an extension may be granted by the RSO.



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- 6.10 The RWP shall be posted at the boundary of the radiological control area, near the entrance if practical. DA
- 6.10.1 All employees performing the job shall sign the RWP.
- 6.10.2 This signature demonstrates the employee's understanding of all requirements.
- 6.11 The radiologically controlled area shall be equipped with the following equipment as appropriate:
- 6.11.1 Portable, radiation survey instrument;
- 6.11.2 Warning signs as required by 10 CFR 20 or state license requirements and any additional signs required by RPP-005; and
- 6.11.3 A container designated for trash potentially contaminated with radioactive materials;
- 6.12 If job requirements on a RWP change or any unusual/unexpected events occur:
- 6.12.1 The RSO shall be notified as soon as possible
- 6.12.2 A new RWP shall be issued or changes shall be made to the existing one.
- 6.13 Persons exiting the control zone shall frisk their clothing and shoes before leaving as required on the RWP.
- 6.13.1 The survey instrument and count rate for "clean" shall be determined by the RSO for each type of frisker needs. For an associate to exit the control zone, instrument readings shall be at or below the established count rate.
- 6.13.2 The RSO shall investigate any suspected personnel contamination incidents.
- 6.14 The supervisor shall notify the RSO when the work with radioactive materials/samples is completed.
- 6.15 The RSO at a fixed facility or his designee shall:
- 6.15.1 Confirm that all samples requiring a RWP have been removed from the area and returned to Sample Control or transferred to a different control zone.
- 6.15.2 Confirm that all waste and contaminated trash has been removed from the zone and is properly stored in the Chemical Storage Room.
- 6.15.3 Perform a direct survey of the floors and surfaces likely to come in contact with the radioactive material.



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6.15.4 Perform a wipe test survey to represent the floors and surfaces likely to come in contact with the radioactive material. *DF*

6.15.5 The RSO shall remove the RWP and other restrictions from the area after the results of the surveys are complete and shall file the RWP in accordance with Section 7.0.

6.16 When at a work site the job covered by an RWP is complete:

6.16.1 The RSO or designee will make surveys of the area to determine radiological conditions in the work area and record survey results on a survey form.

6.16.2 The RSO or designee will remove the RWP from the area and file it in accordance with Section 7.0.

7 RECORDS

7.1 All Records pertinent to this procedure shall be maintained pursuant to RPP-010.

7.2 RWPs shall be maintained by the RSO as quality assurance records.

8 ATTACHMENTS

8.1 Attachment 1 - Radiation Work Permit Form



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ATTACHMENT 1
RADIATION WORK PERMIT

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INTERNATIONAL TECHNOLOGY CORPORATION		RADIATION WORK PERMIT				Release Number: _____			
Location:									
Job Description:									
Job Supervisor:						Phone #:			
Job Start/Finish Dates:									
SITE CHARACTERIZATION									
LOCATION		RADIATION LEVELS			CONTAMINATION				
		Type	Contact (mrem/hr)	Work Area (mrem/hr)	Type	Activity (dpm/100 cm ²)			
AIRBORNE				OTHER HAZARDS					
Activity (μCi/mi)				Type		Levels			
PERSONAL PROTECTIVE EQUIPMENT									
BODY & HANDS		X	FEET		X	HEAD		X	
Coveralls: 1pr; 2pr Plastic Suit Cloth Liners Surgical Gloves Tape Gloves to Coveralls			Shoe Covers (canvas) Plastic Booties Rubber Shoes Paper Shoe Covers Tape Booties to Coveralls No Personal Outer Clothing			Surgical Cap Canvas Hood Plastic Hood Face Shield Goggles Hard Hat			
HS COVERAGE		X	RESPIRATORY		PF	X	DOSIMETRY		X
None Start of Job End of Job Continuous			Dust Mask Half Face Full Face Air-Fed Hood Airline Full Face Self-Contained Lapel Air Sampler Per Individual Per Group		N/A 10 50 2K 2K 10K		TLD Dosimeter 0-200 mR Dosimeter (high) range Extremity TLD Neutron Badge Digital Alarming Dosimeter Per Individual Per Group		
Special Instructions:					Waste Handling:				
Preparer:									
Approval (Project Radiation Safety Officer)									
Expiration Date:					Termination Date:				

IT Form HS700B