



INTERNATIONAL  
TECHNOLOGY  
CORPORATION

IT CORPORATION

STANDARD OPERATING PROCEDURE

NUMBER: RPP-005

TITLE: Radiological Areas and Posting

APPROVED: [Signature]

Corporate Director of  
Health and Safety

DATE: 9-27-96

APPROVED: [Signature]

Health Physics Professional

DATE: 9/23/96

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DATE: 26 Sep 96

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## STANDARD OPERATING PROCEDURE

Minor Change  
Number:  
By:  
Date: / /

RADIOLOGICAL AREAS AND POSTING

SOP No. RPP-00  
Rev. No. 0  
Date: 09/25/96  
Page 2 of 6

### TABLE OF CONTENTS

1	PURPOSE AND OBJECTIVES .....	3
2	RESPONSIBILITIES .....	3
3	REFERENCES .....	3
4	DEFINITIONS .....	3
5	EQUIPMENT/MATERIALS REQUIRED .....	5
6	METHODOLOGY .....	5
	6.1 Posted Areas .....	5
	6.2 Posting Requirements .....	5
7	RECORDS .....	6
8	ATTACHMENTS .....	6



## STANDARD OPERATING PROCEDURE

Minor Change  
Number:  
By:  
Date: / /

### RADIOLOGICAL AREAS AND POSTING

SOP No. RPP-005  
Rev. No. 0  
Date: 09/25/96  
Page 3 of 6

#### 1 PURPOSE AND OBJECTIVES

This procedure describes the radiological areas and posting requirements for IT job sites and fixed facilities. This procedure applies to all job sites and fixed facilities.

#### 2 RESPONSIBILITIES

2.1 The RSO or designee is responsible for placing and removing radiological postings.

NOTE: Postings shall only be placed or removed at the direction of the RSO or designee!

2.2 The Project Manager or Fixed Facility Director is responsible for assuring that personnel are trained and understand the meaning of each type of posting, and that they follow the requirements of each.

#### 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"

##### 3.3 Others

3.3.1 Title 10, Code of Federal Regulations, Part 20, "Standards for Protection Against Radiation."

3.3.2 Regulatory Guide 1.86, "Termination of Operating Licenses for Nuclear Reactors,"

#### 4 DEFINITIONS

4.1 Airborne Radioactivity Area - Any area where airborne radioactive concentrations exceed 30% of the Derived Air Concentrations (DAC).

4.2 Approval - An act of endorsing or adding positive authorization or both.

4.3 Contamination Area - any area where radioactive materials exceed the limits shown in Regulatory Guide 1.86, Table I.



## STANDARD OPERATING PROCEDURE

Minor Change  
Number:  
By:  
Date: / /

## RADIOLOGICAL AREAS AND POSTING

SOP No. RPP-00  
Rev. No.  
Date: 09/25/96  
Page 4 of 6

- 4.4 Controlled Area - see Radiologically Controlled Area.
- 4.5 Derived Air Concentration (DAC) - The values obtained by dividing the Annual Limit on Intake by the volume of air breathed by an average worker during a working year (i.e.  $2.4 \times 10^3$ ). These values are listed in 10 CFR 20 Appendix B Table 1.
- 4.6 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).
- 4.7 High Radiation Area - Any area where an individual may receive a dose equivalent of 100 mrem or greater but less than 500 rad in one hour at a distance of 30 cm from the radiation source or from any surface through which the radiation penetrates.
- 4.8 May - The word may is used to denote permission.
- 4.9 Radiation Area - Any area where an individual may receive a dose equivalent greater than five mrem but less than 100 mrem in one hour at a distance of 30 cm from the radiation source or from any surface through which the radiation penetrates.
- 4.10 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 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.
- 4.11 Radioactive Material Storage Area - An area where radioactive materials are stored or handled and where working conditions in the general area are normally such that radiation and contamination levels are maintained below those for which posting is required.
- 4.12 Radiologically Controlled Area - Any area to which access is controlled in order to protect individuals from exposure to radiation and radioactive materials. Examples of these areas are: airborne radioactivity area, radiation area, high radiation area, or contamination area.
- 4.13 Shall - The word shall is to be understood as a requirement.
- 4.14 Should - The word should is to be understood as a recommendation.
- 4.15 TLD - Required Area - Any area posted as a radiation area:
- 4.16 Very High Radiation Area - Any area where an individual may receive a dose equivalent of 500 rad or greater in one hour at a distance of 30 cm from the radiation source or from any surface through which the radiation penetrates.



## STANDARD OPERATING PROCEDURE

Minor Change  
Number:  
By:  
Date: / /

### RADIOLOGICAL AREAS AND POSTING

SOP No. RPP-005  
Rev. No. 0  
Date: 09/25/96  
Page 5 of 6

## 5 EQUIPMENT/MATERIALS REQUIRED

- 5.1 Rad Rope/Tape
- 5.2 Stanchions
- 5.3 Postings

## 6 METHODOLOGY

### 6.1 Posted Areas

The following areas shall be posted:

- Radiologically Controlled Areas
- Radiation Areas
- High Radiation Areas
- Very High Radiation Areas
- Airborne Radioactivity Area
- Contamination Area

### 6.2 Posting Requirements

- 6.2.1 All areas that contain radiation hazards and require exposure control shall be clearly designated by appropriate signs, tags, or labels.
- 6.2.2 The radiation symbol and the color combination yellow and magenta shall be used to signify the actual or potential presence of ionizing radiation and to identify objects, devices, materials, or combinations of materials which emit ionizing radiation.
- 6.2.3 The symbols and color combination of yellow and magenta are not to be used for purposes other than to warn of the actual or potential presence of a radiation or contamination hazard or training purposes.
- 6.2.4 Each sign, tag, or label shall be displayed prominently and must be recognizable from a safe distance.
- 6.2.5 Each posted area shall be defined and clearly marked with appropriate signs and may include a portion or all of a room, building, area, or vehicle. Areas without clearly defined existing boundaries should be defined by the use of radiation tape, ribbon, or rope.



## STANDARD OPERATING PROCEDURE

Minor Change  
Number:  
By:  
Date: / /

### RADIOLOGICAL AREAS AND POSTING

SOP No. RPP-00  
Rev. No. 0  
Date: 09/25/96  
Page 6 of 6

- 6.2.6 Supplementary notices specifying the requirements for entry to and exit from areas and other special precautions that are to be exercised shall be posted in conjunction with radiation warning signs and tags to provide personnel with any required additional instructions or information not given by the signs and tags.
- 6.2.7 The information signs, tags, labels, and notices shall be kept current, reflecting any changes in radiological conditions.
- 6.2.8 Warning signs, tags, labels, notices and other radiation hazard identification markings will be removed when the conditions requiring their use no longer exist.

## 7 RECORDS

All Records pertinent to this procedure shall be maintained pursuant to RPP-010, "Radiation Protection Records."

## 8 ATTACHMENTS

None