

Posting Radiological Hazards

RP 02.04

RP 03.04

Approved Rev: 11/29/17



Standardized Task Evaluation Program

The Standardized Task Evaluation (STE) program promotes a work-ready workforce through the standardization of common tasks by defining the knowledge and skills required to perform a given task. Subject Matter Experts (SMEs) analyze the task and generate lesson plans, knowledge examination, and performance evaluation elements. These elements are combined to create an STE package.

The Electric Power Research Institute (EPRI) facilitates the development, oversees the quality, and programmatically implements each STE. EPRI STE members have access to these materials and permission to implement these STEs in accordance with their site training and qualification procedures.

Posting Radiological Hazards Overview

- This training covers the knowledge elements needed for the posting of radiological control areas within the RCA, Restricted Area, Controlled Area, and Unrestricted Area (Junior Technician Qualification RP 02.04) as well as the knowledge elements associated with posting High Radiation Areas (HRA), Locked High Radiation Areas (LHRA), and Very High Radiation Areas (VHRA) (Senior Technician Qualification RP 03.04). Posted area construction requirements are covered as well.

Terminal Objective

- When working as an RP technician at a US nuclear utility, individual will be able to establish boundaries, barriers, and postings necessary to inform workers of the radiological hazards in the work area in accordance with the standards of NISP-RP-04, Nuclear Industry Standard Process for Radiological Posting and Labeling.

Enabling Objective

1. Define the following terms

- RCA
- Radiation Area
- High Radiation Area
- Locked High Radiation Area
- Very High Radiation Area
- Neutron Area
- Radiography Area
- Contaminated Area
- High Contamination Area
- DRP Area
- Alpha 2 Area
- Alpha 3 Area
- Airborne Radioactivity Area
- Hot spot

Enabling Objective

2. State the proper hierarchy for pocket inserts on postings.
3. State posting requirements for catch containments.
4. State posting and boundary requirements for a Neutron area.
5. State postings and boundary requirements for a Radiography area.
6. Identify the posting and boundary requirements for the following:
 - High Radiation Area
 - Locked High Radiation Area
 - Very High Radiation Area
 - Contaminated Area
 - High Contamination Area
 - DRP Area
 - Airborne Radioactivity Area
 - Radiation Area

Enabling Objective

7. State posting required for a ladder storage area (to include staged ladders, portable power lifts, and teletowers).
8. State the boundary controls and posting requirements for an Alpha 2 Area.
9. State the boundary controls and posting requirements for an Alpha 3 Area.
10. State the labeling requirements for containers with radioactive material.
11. State the containers which are exceptions to labeling requirements for containers with radioactive materials.

Definitions

Definitions are in accordance with NISP-13 Glossary. In some cases the posting criteria is more conservative than the area definition.

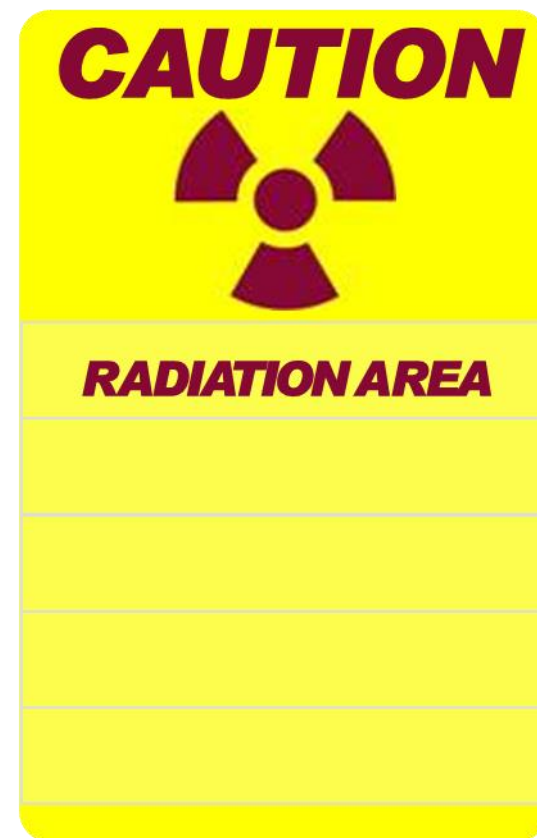


Definitions – RCA

- **Radiologically Controlled Area (RCA)** - An area within the restricted area posted in accordance with procedures for the purpose of protecting individuals against undue risks from exposure to radiation and radioactive materials.

Definitions – Radiation Area

- An area accessible to individuals where individuals may receive dose equivalent in excess of :
 - 5 mrem/hour @ 30 cm
- Requires conspicuous posting at entry point and external to the Radiation Area.



Definitions – High Radiation Area

High Radiation Area (HRA) - Any area, accessible to individuals, in which radiation levels from radiation sources external to the body could result in an individual receiving a dose equivalent in excess of 0.1 rem (100 mrem) in 1 hour at 30 centimeters from the radiation source or 30 centimeters from any surface that the radiation penetrates.

- Definition: >100 mrem/hr @ 30 cm
- Posted at ≥ 80 & < 800 mrem/hour @ 30 cm
- A barrier is required for the boundary except while the area is accessed.



Definitions – Locked High Radiation Area

Locked High Radiation Area (LHRA) - Any area accessible to individuals in which deep dose equivalent rates are greater than or equal to 1 rem per hour (but less than 500 rads in one hour at 1 meter) 30 centimeters from the source of radiation or from any surface that the radiation penetrates.

- Defined as ≥ 1 rem/hr @ 30 cm
- Posted at > 800 mrem/hour @ 30 cm
- A LOCKED barrier is required for the boundary except while the area is accessed.



Definitions – Very High Radiation Area

Very High Radiation Area (VHRA) - An area, accessible to individuals, in which radiation levels from radiation sources external to the body could result in an individual receiving an absorbed dose in excess of 500 rads (5 grays) in 1 hour at 1 meter from a radiation source or 1 meter from any surface that the radiation penetrates.

- ≥ 500 rads/hour at 1 meter from any source or surface
- A locked barricade or Access Control Guard is required



Definitions – Neutron Area

- **Neutron Area** – An area where the neutron dose rate is > 4 mrem/hour General Area at 30 cm from a source.
- $\eta > 4$ mrem/hour General Area or @ 30 cm from a source

Definitions – Radiography Area

- **Radiography Area** - A radiographic work area posted and controlled in accordance with the licensee (radiography group) Operating and Emergency Procedures.
- Boundary locations established in accordance with a Radiography Shot Plan of NISP-RP-09
- Access point are posted with access controls established per Shot Plan.
 - High Radiation Areas established iaw the radiographer's policy
 - Radiation Area boundaries shall be established where the expected dose rate is expected to be < 2 mrem/hour while the source is exposed.
 - **Access control will be established at the projected Radiation Area boundary at <2 mrem/hr.**

Definitions – Contaminated Area

- **Contaminated Area** - An area having smearable contamination equal to or greater than 1000 dpm/100 cm² (100 net counts per minute using a pancake frisker probe) beta- gamma or 20 dpm/100 cm² alpha.

- $\geq 1,000 \text{ \& } < 100,000 \text{ } \beta\gamma$
- OR
- $\geq 20 \text{ } \alpha \text{ dpm/100 cm}^2$

Definitions – High Contamination Area

- **High Contamination Area (HCA)** - An area where the majority of the area has removable surface contamination equal to or greater than 100,000 dpm/100cm² beta-gamma.

- $\geq 100,000 \beta\gamma \text{ dpm}/100 \text{ cm}^2$

Definitions – DRP Area

- **Discrete Radioactive Particles (DRP)** - Small, loose, highly radioactive particles with $> 500,000$ dpm or $50,000$ ccpm.
- DRPs $> 500,000$ dpm

OR

- $> 50,000$ ncpm

Definitions – Alpha 2 Area

- **Alpha Level 2 (Significant)** - Relative abundance of alpha contamination is significant. The $\beta\gamma/\alpha$ ratio is between 30,000 and 300. Alpha inhalation contributes from 10 to 90 percent to the total inhalation hazard. Contamination survey action levels are intended to alert radiation safety personnel of presence of alpha emitters.

- $\beta\gamma/\alpha$ ratio = 300 - 30,000

AND

- $\alpha \geq 20$ dpm/100 cm²

Definitions – Alpha 3 Area

- **Alpha Level 3 (Elevated)** - Relative abundance of alpha contamination is elevated. The $\beta\gamma/\alpha$ ratio is less than 300. Alpha inhalation contributes 90 percent or more to the total inhalation hazard. Most smears and all air samples should be counted for alpha contamination.

- $\beta\gamma/\alpha$ ratio ≤ 300

AND

- $\alpha \geq 20$ dpm/100 cm²

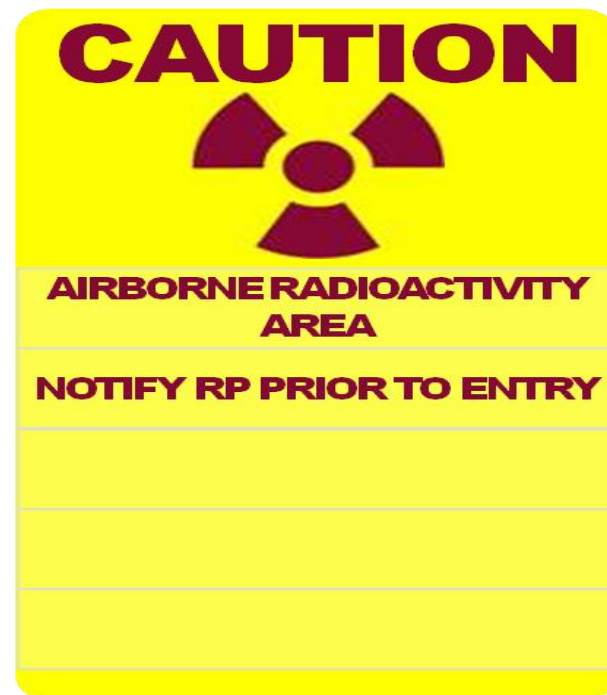
Definitions – Airborne Radioactivity Area

Airborne Radioactivity Area (ARA) - A room, enclosure, or area in which airborne radioactive materials, composed wholly or partly of licensed material, exist in concentrations in excess of the values of 10CFR20, Appendix B, Table 1, Column 3 (i.e., DAC values) OR to such a degree that an individual without respiratory protective equipment could exceed, during the hours an individual is present in a week, an intake of 12 DAC-hours.

- Particulates & Iodine ≥ 0.3 DAC

OR

- Noble Gas ≥ 1.0 DAC



Definitions – Hot Spot

- **Hot Spot** - Accessible hot spots when components have contact readings of more than 100 mrem/hour and more than five times the general area dose rates (typically 30 cm from the source).

- Localized source of radiation where contact dose rates are:
 - > 100 mrem/hour
 - AND**
 - > 5 X the dose rate at 30 cm except when:
 - Foreign material exclusion and configuration controls prohibit the placement of signs.
 - Infrequent access to the area limits the value of the posting as determined by RP supervision.

NISP Requirements



Hierarchy for Pocket Inserts

- Use pocket inserts below signs as needed to post hazards and entry requirements
- Use the following hierarchy from top to bottom:
 - External hazards.
 - Airborne hazards.
 - Contamination hazards.
 - Other information.

Catch Containments

- Use yellow material for catch containments to identify the contained leakage as contaminated.
- Ensure the catch containment and drain tubing is conspicuously labeled for containing contamination if the containment is located in a non-contaminated area.

Labeling Requirements

- Label containers with radioactive material using a radiation symbol trefoil and the words “Caution Radioactive Material” as shown
- Add precautionary information for any of the following conditions:
 - Dose rates are ≥ 2 mrem/hour on contact with the contents in the container.
 - Smearable contamination $\geq 1,000$ dpm/100 cm² is accessible if the container is opened.
 - Contents originated in a Level 3 Alpha Area.
 - Contents contain discrete radioactive particles.



Exceptions to Labeling Requirements

- Containers are not required to be labeled under step 3.4.1 for any of the following conditions:
 - Containers holding licensed material in quantities less than the quantities listed in 10 CFR 20, Appendix C
 - Containers holding licensed material in concentrations less than those specified in 10 CFR 20, Appendix B, Table 3.
 - Containers attended by an individual who takes the precautions necessary to prevent the exposure of individuals in excess of the limits established by 10 CFR 20.
 - Containers when they are in transport and packaged and labeled in accordance with the regulations of the Department of Transportation.
 - Containers that are accessible only to individuals authorized to handle or use them, or to work in the vicinity of the containers, if the contents are identified to these individuals by a readily available written record

Exceptions to Labeling Requirements (Continued)

- Containers are not required to be labeled under step 3.4.1 for any of the following conditions (Continued) :
 - Installed manufacturing or process equipment, such as reactor components, piping, and tanks.
 - Containers holding licensed material (other than sealed sources that are either specifically or generally licensed) that are within an RCA if the containers are:
 - Conspicuously marked (such as by providing a system of color coding of containers) commensurate with the radiological hazard;
 - Accessible only to individuals who have sufficient instruction to minimize radiation exposure while handling or working in the vicinity of the containers; and
 - Subject to plant procedures to ensure they are appropriately labeled before being removed from the posted area.

Postings Required for Ladder Storage

- Post ladder storage areas, staged ladders, portable power lifts, and teletowers with a sign stating “Contact RP Prior to Working or Climbing Above 7 Feet.”
- Place a posting on each side of power lifts and teletowers when in service to ensure the caution is conspicuous.

Posting and Boundary Requirements



Neutron Area

Hazard → Boundary Requirements → Posting

<p>NEUTRON AREA</p> <p>$\dot{H} > 4$ mrem/hour</p> <p>General Area or @ 30 cm from a source</p>	<ul style="list-style-type: none"> • Post area commensurate with the criteria for Radiation Area, HRA, or LHRA • Refer to NISP-RP-05 for access controls. 	<p>Standard Radiation Sign with the following:</p> <ul style="list-style-type: none"> • RADIATION AREA • RP BRIEF REQUIRED FOR ENTRY • NEUTRON MONITORING REQUIRED
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Table from NISP-04, Radiological Posting and Labeling.

Radiography

Hazard → Boundary Requirements → Posting

HAZARD	BOUNDARY REQUIREMENTS	POSTING
RADIOGRAPHY	<ul style="list-style-type: none"> • Setup of boundaries and barricades is a collaborative responsibility with the radiographer. • Radiographers must establish a restricted area boundary where the dose rate from source exposure is ≤ 2 mrem/hour. • Refer to NISP-RP-09, <i>Radiography</i> for boundary criteria and access controls. 	Radiography Sign in addition to a Standard Radiation Sign with the following inserts: <ul style="list-style-type: none"> • RADIATION AREA • RADIOGRAPHY IN PROGRESS • KEEP OUT • ENTRY PERMITTED FOR RADIOGRAPHY CREW ONLY

Table from NISP-04, Radiological Posting and Labeling.

High Radiation Area

Hazard → Boundary Requirements → Posting

<p>HIGH RADIATION AREA</p> <p>≥ 80 & < 800 mrem/hour @ 30 cm</p>	<p>• A barrier is required for the boundary except while the area is accessed. A SOP is not considered as a barrier.</p> <p>• Barriers at access locations must be secured.⁴</p> <p>• Refer to Attachments 1 and 2 for sample checklists typically used to post and down-post areas.</p> <p>• Attachment 1 may also be used for routine surveillance to verify the integrity of boundaries.</p> <p>• Post or label access points that require the removal of bolts and/or the use of lifting equipment.</p> <p>• Refer to NISP-RP-05 for access controls.</p>	<p>HRA Sign with the following:</p> <p>• RP BRIEF REQUIRED FOR ENTRY</p> <p>For bolted or plug access, an HRA sign is not required but the access must be labeled with a warning and:</p> <p>• CONTACT RP PRIOR TO OPENING</p>

Table from NISP-04, Radiological Posting and Labeling.

Locked High Radiation Area

Hazard	Boundary Requirements	Posting
<p>LOCKED HIGH RADIATION AREA</p> <p>≥ 800 mrem/hour @ 30 cm</p>	<ul style="list-style-type: none"> • A locked barricade is required for the boundary except while the area is accessed. • Refer to Attachments 1 and 2 for sample checklists typically used to post and down-post areas. • A flashing light and barrier may be used in lieu of a locked barricade as permitted by the plant Technical Specifications and as approved by the RPM. • Refer to Attachment 3 for a sample checklist typically used to set up flashing lights. • Attachment 1 may also be used for routine surveillance to verify the integrity of boundaries. • An Access Control Guard may be used while an area is being routinely accessed or additional time is required to establish controlled boundaries. Refer to Attachment 4 for a sample checklist typically used to brief Access Control Guards. • Ensure posting and locked access of areas that require the removal of bolts and/or the use of lifting equipment. • Refer to NISP-RP-05 for access controls. 	<p>LHRA Sign with the following:</p> <ul style="list-style-type: none"> • RP BRIEF REQUIRED FOR ENTRY <p>For bolted or plug access, an LHRA sign is not required but the access must be labeled with a warning and:</p> <ul style="list-style-type: none"> • CONTACT RP PRIOR TO OPENING

Table from NISP-04, Radiological Posting and Labeling.

Very High Radiation Area

Hazard → Boundary Requirements → Posting

Hazard	Boundary Requirements	Posting
<p>VERY HIGH RADIATION AREA</p> <p>≥ 500 rads/hour at 1 meter from any source or surface</p>	<ul style="list-style-type: none"> • A locked barricade is required for the boundary except while the area is accessed.³ • An Access Control Guard may be used while an area is being routinely accessed or additional time is required to establish controlled boundaries. Refer to Attachment 4 for a sample checklist typically used to brief Access Control Guards. • Refer to Attachments 1 and 2 for sample checklists typically used to post and down-post areas. • Attachment 1 may also be used for routine surveillance to verify the integrity of boundaries. • Refer to NISP-RP-05 for access controls. 	<p>VHRA Sign</p>

Table from NISP-04, Radiological Posting and Labeling.

Contaminated Area

Hazard	Boundary Requirements	Posting
<p>Contaminated Area</p> <p>$\geq 1,000$ & $< 100,000$ $\beta\gamma$ OR ≥ 20 α $\text{dpm}/100 \text{ cm}^2$</p>	<ul style="list-style-type: none"> • Use radiation rope to establish boundaries with conspicuous postings. • Radiation tape may be used in lieu of radiation rope to establish a boundary for a small area such as a sample sink, tabletop, drain, pump basin, catch basin, tubing, etc. Radiation tape must be accompanied with the text "Contaminated Area." • Conspicuously posted physical barriers such as handrails and knee walls do not require the use of radiation rope or tape on the barrier. • Place a step-off-pad (SOP) if required for workers to exit and remove protective clothing. (Note: An SOP is not a substitute for an HRA barrier.) • Secure hoses, cables, cords, etc. crossing the boundary to prevent pulling the potentially contaminated item out of the Contaminated Area. • Setup friskers and/or contamination monitors in close proximity after exiting the area to: <ul style="list-style-type: none"> ○ Perform whole body monitoring OR ○ Perform hand and foot frisking prior to proceeding to the nearest whole body contamination monitor. 	<p>Standard Radiation Sign with the following:</p> <ul style="list-style-type: none"> • CONTAMINATED AREA <p>For areas $> 10,000$ $\text{dpm}/100 \text{ cm}^2$, add:</p> <ul style="list-style-type: none"> • RP BRIEF REQUIRED FOR ENTRY

Table from NISP-04, Radiological Posting and Labeling.

High Contamination Area

Hazard	Boundary Requirements	Posting
<p>HIGH CONTAMINATION AREA</p> <p>$\geq 100,000 \beta\gamma$ <u>dpm/100 cm²</u></p>	<ul style="list-style-type: none"> • Use radiation rope to establish boundaries with conspicuous postings. • If worker access is required, establish a double SOP arrangement with knee or curtain walls as needed to contain the high levels of contamination. 	<p>Standard Radiation Sign with the following:</p> <ul style="list-style-type: none"> • HIGH CONTAMINATION AREA • RP BRIEF REQUIRED FOR ENTRY

Table from NISP-04, Radiological Posting and Labeling.



DRP Area

Hazard	Boundary Requirements	Posting
<p>DRP AREA</p> <p>DRPs > 500,000 <u>dpm</u> OR > 50,000 <u>dcpm</u></p>	<ul style="list-style-type: none"> • Use radiation rope to establish boundaries with conspicuous postings. • Establish barriers as needed to prevent migration of particles across the boundary, e.g. a knee or curtain wall. • Establish a double SOP arrangement to maintain a buffer area to prevent particles from migrating to clean areas. 	<p>Standard Radiation Sign with the following:</p> <ul style="list-style-type: none"> • HIGH CONTAMINATION AREA • DISCRETE RADIOACTIVE PARTICLES PRESENT • RP BRIEF REQUIRED FOR ENTRY <p>Post the buffer area with Radiation Sign and the following inserts:</p> <ul style="list-style-type: none"> • CONTAMINATED AREA • DRP BUFFER AREA

Table from NISP-04, Radiological Posting and Labeling.

Airborne Radioactivity Area

Hazard → Boundary Requirements → Posting

Hazard	Boundary Requirements	Posting
<p>AIRBORNE RADIOACTIVITY AREA</p> <p>Particulates & Iodine \geq 0.3 DAC</p>	<ul style="list-style-type: none"> • Setup a rope barrier and posting if airborne levels are due to, or expected from, system leakage or work in high levels of contamination. • Install ventilation and/or containment devices as needed to encapsulate the airborne radioactivity within the boundary. 	<p>Standard Radiation Sign with the following:</p> <ul style="list-style-type: none"> • AIRBORNE RADIOACTIVITY AREA • RP BRIEF REQUIRED FOR ENTRY
<p>AIRBORNE RADIOACTIVITY AREA</p> <p>Noble Gas \geq 1.0 DAC</p>	<ul style="list-style-type: none"> • Setup a rope barrier and posting when identified. 	<p>Standard Radiation Sign with the following:</p> <ul style="list-style-type: none"> • AIRBORNE RADIOACTIVITY AREA • RP BRIEF REQUIRED FOR ENTRY

Table from NISP-04, Radiological Posting and Labeling.

Alpha 2 Area

Hazard	Boundary Requirements	Posting
<p>ALPHA 2 AREA</p> <p>$\beta\gamma/\alpha$ ratio = 300 - 30,000 AND $\alpha \geq 20$ dpm/100 cm²</p>	<ul style="list-style-type: none"> Boundary controls are the same as for a Contaminated Area. 	<p>Standard Radiation Sign with the following:</p> <ul style="list-style-type: none"> CONTAMINATED AREA LEVEL 2 ALPHA AREA

Table from NISP-04, Radiological Posting and Labeling.

Alpha 3 Area

Hazard	Boundary Requirements	Posting
<p>ALPHA 3 AREA</p> <p>$\beta\gamma/\alpha$ ratio ≤ 300 AND $\alpha \geq 20$ dpm/100 cm²</p>	<ul style="list-style-type: none"> • Boundary controls are the same as for a Contaminated Area. • If $\beta\gamma/\alpha$ ratio ≤ 50, setup a frisker capable of detecting alpha radiation in close proximity to the boundary 	<p>Standard Radiation Sign with the following:</p> <ul style="list-style-type: none"> • CONTAMINATED AREA • LEVEL 3 ALPHA AREA • RP BRIEF REQUIRED FOR ENTRY <p>If $\beta\gamma/\alpha$ ratio < 50, add:</p> <ul style="list-style-type: none"> • ALPHA FRISKING/MONITORING REQUIRED UPON EXIT

Table from NISP-04, Radiological Posting and Labeling.

Radiation Area

Hazard	Boundary Requirements	Posting
<p>RADIATION AREA</p> <p>≥ 4 & < 80 mrem/hour @ 30 cm</p>	<ul style="list-style-type: none"> • Posting must be conspicuous at entry point and external to the Radiation Area. • Boundary demarcation or barricades are not required. • Avoid a single posting for a very large area or room if most of the area or room is < 4 mrem/hour. In such conditions, post the discrete areas or rooms ≥ 4 mrem/hour. 	<p>Standard Radiation Sign with the following:</p> <ul style="list-style-type: none"> • RADIATION AREA

Table from NISP-04, Radiological Posting and Labeling.

CONSTRUCTING POSTED AREAS



GENERAL POSTED AREA CONSTRUCTION

- Posted Area Boundaries:
 - Yellow and magenta rope, ribbons, chains, or physical barriers such as existing walls, fences or railings, or a radiation trained worker.
 - HRA's require the use of a physical barrier.
 - Appropriate radiological warning signs.

GENERAL POSTED AREA CONSTRUCTION

- Place rope/ribbon \approx three feet above the floor.
- Do not place ropes on:
 - Valve handwheels.
 - Instrument tubing.
 - Snubbers.
 - Rotating equipment.
 - Hot pipes or equipment.

GENERAL POSTED AREA CONSTRUCTION

- Yellow and magenta tape or paint can be used as a boundary for areas below the threshold for posting High Radiation Areas where rope, ribbon, chain, stanchions, etc. are not practical.
- Place radiological information at the entrance to the posted area.

GENERAL POSTED AREA CONSTRUCTION

- Use gates, stanchions, hooks, etc.
- Allow for safe personnel passage.
- Prevent inadvertent operation:
 - Valves,
 - Switches,
 - Instrumentation or other vital equipment while entering/exiting the posted area.

GENERAL POSTED AREA CONSTRUCTION

- For HRAs:

- Free egress requirements maintained while area is occupied.
- Area must be barricaded and conspicuously posted.

OR

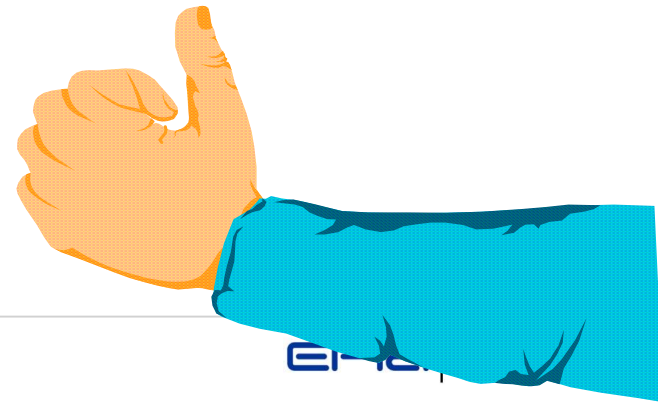
- Guarded

- For LHRAs, & VHRAs:

- Free egress requirements maintained while area is occupied.
- Area must be barricaded and conspicuously posted.
- Locked or Guarded

GENERAL POSTED AREA CONSTRUCTION

- Sign visibility:
 - The sign must be seen from ANY direction.
- General Rule of Thumb:
 - If one can stand anywhere at the posted area boundary and NOT see a sign, additional signs are needed.
 - If at least one sign is visible from all posted area locations, then there is sufficient posting.



GENERAL POSTED AREA CONSTRUCTION

- Ensure signs at the different access points contain identical information.

Operating Experience



Operating Experience

Uncontrolled Locked High Radiation Area

- The failure of a resin transfer pump at Perry Nuclear Power Plant resulted in a water and resin spill.
 - The water and resin overflowed into the hallway, resulting in conditions that met the criteria for a Locked High Radiation Area (LHRA).
- RP did not survey for changing radiological conditions for approximately five days.
 - This resulted in an undetected and uncontrolled LHRA.
- During these five days, several individuals were allowed access into the uncontrolled LHRA without required briefings or an understanding of the hazards present.
 - No individuals exceeded exposure limits or received dose rate alarms during this time period.

Operating Experience

Uncontrolled Locked High Radiation Area

■ Causes:

- Weaknesses in response to new or changing conditions, along with shortfalls in communication and documentation.
 - RP technicians did identify changing radiological conditions, but did not document or investigate the extent of the changes, nor did they update any postings.
- Operational and equipment challenges in the radiological waste hampered the organization's response to changing plant and radiological conditions.
 - This led to an insufficient questioning attitude and an incomplete understanding of the emergent conditions.
 - Water on the floor of the building was a normal occurrence, and it was assumed that the RP technicians had evaluated the radiological conditions properly.

Operating Experience

Uncontrolled Locked High Radiation Area

■ Lessons Learned

- When the potential exists for changing radiological conditions within a work area, RP technicians should:
 - Fully assess and understand the risk
 - Perform regular monitoring
 - Update postings and documentation
 - Control all aspects of the work activity to ensure worker protection

Enabling Objective

1. Define the following terms

- RCA
- Radiation Area
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- Alpha 3 Area
- Airborne Radioactivity Area
- Hot spot

Enabling Objective

2. State the proper hierarchy for pocket inserts on postings.
3. State posting requirements for catch containments.
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 - Airborne Radioactivity Area

Enabling Objective

7. State posting required for a ladder storage area (to include staged ladders, portable power lifts, and teletowers).
8. State the boundary controls and posting requirements for an Alpha 2 Area.
9. State the boundary controls and posting requirements for an Alpha 3 Area.
10. State the labeling requirements for containers with radioactive material.
11. State the containers which are exceptions to labeling requirements for containers with radioactive materials.

Terminal Objective

- When working as an RP technician at a US nuclear utility, individual will be able to establish boundaries, barriers, and postings necessary to inform workers of the radiological hazards in the work area in accordance with the standards of NISP-RP-04, Nuclear Industry Standard Process for Radiological Posting and Labeling.

[STE Title] Training Conclusion:

- Questions:
- Feedback:
- Conclusions:



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