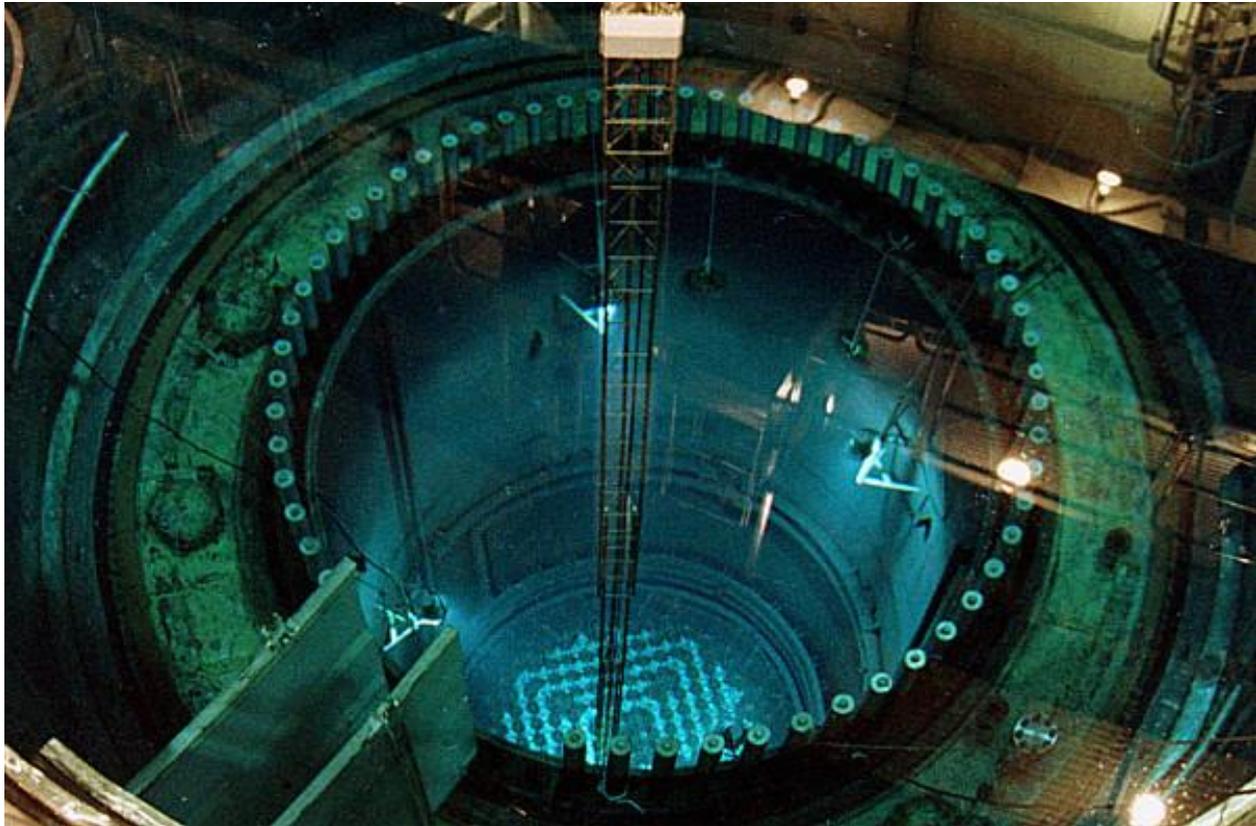




# Control Access into High Radiation Areas and Locked High Radiation Areas

STE RP 02.05 and 03.05, Rev #0

# Why is this Important?



# OPEX

When reviewing Operating Experience (OPEX) consider:

What Happened?

Why did it happen?

How can it happen at my work location?

What are our barriers?

What are the lessons learned?

# OPEX – OE 315981

## HRA Briefing Not in Accordance With Briefing Form Checklist

### **EVENT:**

Two maintenance workers in the field recognized a High Radiation Area Briefing was required for entry into an area where they needed to perform work. This area is posted a HRA for the potential transient conditions and had general area dose rates of 40 mr/hr at the time of the entry. The workers correctly stopped and returned to RP for a High Radiation Area Briefing. As the HRA briefing commenced a question arose and the workers took the time to see if the High Radiation Area entry could be avoided completely in order to save exposure by contacting a co-worker that was in the area earlier. This check interrupted the High Rad Area Briefing and when the briefing recommenced the RP Technician did not return to the previous step on the checklist.

# OPEX – OE 315981 (cont.)

## **EVENT (cont.):**

This resulted in the second portion of the checklist item being skipped (check box already checked off). This step if performed, would have verified whether the RWVP allowed HRA/LHRA access.

As a result, one of the two maintenance technicians received a dose rate alarm and immediately exited the work area and notified RP. The maintenance technicians RCA access was suspended pending completion of the investigation.

# OPEX – OE 315981 (cont.)

## **Lessons Learned:**

The individuals failed to verify compliance with the RWVP requirements prior to entry into the HRA.

The brief that was required for the RWVP was inadequate.

## **Barriers in Place:**

Procedure compliance

Training

Briefing Checklist

# Terminal Objectives

I. Given a job coverage activity involving an entry into a High Radiation Area, demonstrate the proper method to conduct an HRA briefing and the knowledge needed to ensure area configurations will not lead to unplanned exposure, in accordance with NISP-RP-05.

# Terminal Objectives

2. Given a job coverage activity involving an entry into a Locked High Radiation Area, demonstrate the proper method to conduct an LHRA briefing and the knowledge needed to ensure area configurations will not lead to unplanned exposure, in accordance with NISP-RP-05.

# Enabling Objectives

From memory and in accordance with NISP-RP-05, students will:

1. List the general requirements needed prior to entry into an HRA or LHRA.
2. List the differences in controlling access into an HRA versus an LHRA.
3. Explain the purpose of a briefing checklist.
4. Explain appropriate actions to take if the briefing checklist cannot be completed as stated.
5. List the potential consequences of an improperly controlled entry into an HRA.

# Enabling Objectives (cont.)

From memory and in accordance with NISP-RP-05, students will:

6. Describe controls used to prevent items from being raised near or above the surface of spent fuel pools, reactor vessels, and flooded refueling cavities.
7. Identify the conditions required to issue an LHRA key.
8. Identify the conditions that allow issuance of a Master LHRA key.
9. List the LHRA key possessor responsibilities.
10. List the notifications required to be made prior to transferring an LHRA key.
11. Describe the actions taken when terminating access into an LHRA.

# Objective 1

**List the general requirements needed prior to entry into an HRA or LHRA.**

**NOTE:**

Plant technical specifications may have requirements in addition to those listed below. Comply with site procedures to enter an HRA or LHRA.

- A radiation monitoring device that indicates radiation dose in the area
- A radiation monitoring device that continuously integrates the dose rate in the area and alarms when a preset dose is received. Dose rates in the area must be obtained and personnel made knowledgeable of them prior to entry.

# Objective 1 (cont.)

- An individual qualified in RP procedures with a dose rate monitoring device that will maintain positive radiation protection control over the activities within the area and should perform periodic radiation surveillance at the frequency specified in the appropriate procedures or applicable RWP.

# Objective 2

## **List the differences in controlling access into an HRA versus an LHRA.**

General requirements for controlling access are similar for HRA's and LHRA's. One major exception being that LHRA's must be locked at all times, unless work is being performed in the area.

- If work is being performed in the area, an ANSI qualified RP technician will sign out a key and maintain positive control of the area at all times.
- Only lock the access if workers can freely egress without the use of a key.
- The access may remain open with an Access Control Guard, per NISP-RP-04.
- A flashing light and barrier may be used if plant technical specifications allow. Additional guidance found in NISP-RP-04.

# Objective 2

## Remember:

- Continuous RP coverage (or escort) is required for entry into LHRA's by an ANSI qualified RP technician.

# Objective 2 (cont.)

	BRIEFINGS	KEY CONTROLS	SOURCE CONTROLS
HRA	<ul style="list-style-type: none"> <li>• Ensure Proper Dosimetry</li> <li>• Brief Expected Dose Rates</li> <li>• Use Attachment 1 as Job Aid</li> </ul>	None Required	<ul style="list-style-type: none"> <li>• Secure Temporary Shielding</li> <li>• Secure Underwater Sources</li> <li>• Surveil Scaffold Construction</li> <li>• Control Lifting Devices</li> </ul>
LHRA	<ul style="list-style-type: none"> <li>• Ensure Proper Dosimetry</li> <li>• Brief Expected Dose Rates</li> <li>• Follow &amp; Complete Attachment 1</li> </ul>	<ul style="list-style-type: none"> <li>• ANSI Qualifications</li> <li>• Positive Custody</li> <li>• Records for Issue &amp; Use</li> <li>• Second Checks for Barrier Integrity</li> </ul>	

# Objective 3

## **Explain the purpose of a briefing checklist.**

Ensure that personnel entering an HRA or LHRA understand the expected dose rates and protective measures.

- ANSI qualified RP technicians may be exempted from briefing requirements, per NISP-RP-05, section 2.1.3
- Individuals may be exempted based on any or all of the following conditions:
  - Medical Emergency
  - Shift Manager has authorized entry for time critical response events such as:
    - Abnormal plant conditions
    - Fire alarm
    - An event critical to nuclear safety (e.g. loss of shutdown cooling)
    - A condition requiring evaluation for potential entry into an Emergency action Level

# Objective 4

**Explain appropriate actions to take if the briefing checklist cannot be completed as stated.**

- Suspend the briefing and notify RP supervision whenever a conflict exists in implementing the RWP.
- **Completion of the checklist is a requirement for an LHRA entry.**
- For an HRA entry, the checklist is a guideline and not a requirement. However it should still be used and followed to ensure workers are adequately briefed and federal guidelines are being met.

# Objective 5

**List the potential consequences of an improperly controlled entry into an HRA.**

- Procedure or tech spec violation
- A worker may received unexpected dose
- An NRC reportable event could occur

# Objective 6

**Describe controls used to prevent items from being raised near or above the surface of spent fuel pools, reactor vessels, and flooded refueling cavities.**

- Protective interlocks on equipment required to raise the item.
- Locked access by Radiation Protection to equipment that may be used to raise the item.
- Tie offs that are locked and controlled by Radiation Protection.

# Objective 6 (cont.)

- Procedural controls on the use of equipment that may be used to raise an item, e.g. a refueling bridge.
- An Access Control Guard to prevent commencement of activities that may result in a LHRA.
- Continuous job coverage by an ANSI qualified technician to monitor conditions and stop work if pre-established criteria are exceeded.

# Objective 7

**Identify the conditions required to issue an LHRA key.**

Issue a LHRA key **only** under the following conditions:

- Access has been authorized by an RP supervisor or designee.
- The key is issued only to RP personnel who are ANSI qualified.



# Objective 7 (cont.)

Ensure the key possessor understands personal responsibilities to:

- Follow the established protocol if key possession is transferred to another individual.
- Ensure keys are maintained in positive custody by only ANSI qualified RP technicians and RP supervision.



# Objective 7 (cont.)

Record the following on the “Key Issue” line on Attachment 2.

- Date and time of issuance.
- Print and sign name.
- Key identification number.
- Door/barrier identification number or location.
- The RWP number or name of the RP Supervisor or Operations Shift Manager authorizing the entry.

# Objective 7 (cont.)

The key possessor must print and sign un the “Key Issued To” block on Attachment 2.



# Objective 8

**Identify the conditions that allow issuance of a Master LHRA key.**

Issue a master key for LHRA access only under the following conditions:

- The RPM has approved issuance of a master key to perform multiple door/barrier checks that do not require entry past the door/barrier.
- The Operations Shift Manager has authorized use of a master key for a time critical response due to abnormal plant conditions, including investigation of a fire alarm.
- A medical emergency.

# Objective 9

**List the LHRA key possessor responsibilities.**

Key control programs to access LHRA's may vary among sites, but should contain the following:

Rules for positive custody that include:

- A formal checkout and return process.
- *Maintaining* positive (physical) custody
- Locking the key cabinet following issuance or return of a key.
- A routine inventory that is performed at least daily.
- Attaching a device to keys to minimize the potential for misplacement.
- Established rules to transfer possession of a key in the plant.

# Objective 9 (cont.)

- A key for an LHRA should unlock only the access for that area.



# Objective 10

**List the notifications required to be made prior to transferring an LHRA key.**

## Key Possessor

Notify the authorized Key Issuer that an LHRA key is being transferred to another individual.

- Provide the name of the person receiving the key to the Key Issuer.
- Ensure the individual receiving the key is an ANSI qualified RP technician or RP supervision.
- Ensure the individual has been briefed per section 3.2.

# Objective 10 (cont.)

## Key Issuer

Document the following on Attachment 2:

- Date and time of the transfer.
- Printed name of the person receiving possession.
- Print Key Issuer name and sign.

# Objective 11

**Describe the actions taken when terminating access into an LHRA.**

## Key Possessor

- Ensure the LHRA door/barrier is locked after exiting the area for the final time.
  - Ensure the locked door/barrier is sufficient to prevent inadvertent, unauthorized access.
  - If the door/barrier cannot be secured and locked, maintain positive control over the entrance and notify RP supervision for assistance.
- Obtain a peer check to provide additional verification that the door/barrier is locked to prevent unauthorized access.
- Print name and sign on Attachment 2.

# Objective 11 (cont.)

## Peer Checker

Print name and sign on Attachment 2 that the door/barrier was verified to be locked.

# Objective 11 (cont.)

## Key Issuer

- Return the key to the key cabinet.
- Print name and sign on Attachment 2 to document return of the key to the key cabinet.





# Review Question #1

**What are the differences in controlling access to an HRA and LHRA?**

# ANSWER

	BRIEFINGS	KEY CONTROLS	SOURCE CONTROLS
HRA	<ul style="list-style-type: none"><li>• Ensure Proper Dosimetry</li><li>• Brief Expected Dose Rates</li><li>• Use Attachment 1 as Job Aid</li></ul>	None Required	<ul style="list-style-type: none"><li>• Secure Temporary Shielding</li><li>• Secure Underwater Sources</li><li>• Surveil Scaffold Construction</li><li>• Control Lifting Devices</li></ul>
LHRA	<ul style="list-style-type: none"><li>• Ensure Proper Dosimetry</li><li>• Brief Expected Dose Rates</li><li>• Follow &amp; Complete Attachment 1</li></ul>	<ul style="list-style-type: none"><li>• ANSI Qualifications</li><li>• Positive Custody</li><li>• Records for Issue &amp; Use</li><li>• Second Checks for Barrier Integrity</li></ul>	

## Review Question #2

What are the appropriate actions required if you cannot complete the briefing checklist as stated?

### **ANSWER:**

- Suspend the briefing and notify RP supervision whenever a conflict exists in implementing the RWP.
- **Completion of the checklist is a requirement for an LHRA entry.**
- For an HRA entry, the checklist is a guideline and not a requirement. However it should still be used and followed to ensure workers are adequately briefed and federal guidelines are being met.

# Review Question #3

What are the potential consequences of an improperly conducted briefing?

## **ANSWER:**

- Procedure or tech spec violation
- A worker may received unexpected dose
- An NRC reportable event could occur

# Review Question #4

Describe the controls used to prevent items from being raised near or above the surface of the fuel pool.

## **ANSWER:**

- Protective interlocks on equipment required to raise the item.
- Locked access by Radiation Protection to equipment that may be used to raise the item.
- Tie offs that are locked and controlled by Radiation Protection.

# Review Question #5

Under what conditions can a Master LHRA key be issued?

## **ANSWER:**

- The RPM has approved issuance of a master key to perform multiple door/barrier checks that do not require entry past the door/barrier.
- The Operations Shift Manager has authorized use of a master key for a time critical response due to abnormal plant conditions, including investigation of a fire alarm.
- A medical emergency.



# Objective Review

# Terminal Objectives

I. Given a job coverage activity involving an entry into a High Radiation Area, demonstrate the proper method to conduct an HRA briefing and the knowledge needed to ensure area configurations will not lead to unplanned exposure, in accordance with NISP-RP-05.

# Terminal Objectives

2. Given a job coverage activity involving an entry into a Locked High Radiation Area, demonstrate the proper method to conduct an LHRA briefing and the knowledge needed to ensure area configurations will not lead to unplanned exposure, in accordance with NISP-RP-05.

# Enabling Objectives

From memory and in accordance with NISP-RP-05, students will:

1. List the general requirements needed prior to entry into an HRA or LHRA.
2. List the differences in controlling access into an HRA versus an LHRA.
3. Explain the purpose of a briefing checklist.
4. Explain appropriate actions to take if the briefing checklist cannot be completed as stated.
5. List the potential consequences of an improperly controlled entry into an HRA.

# Enabling Objectives (cont.)

From memory and in accordance with NISP-RP-05, students will:

6. Describe controls used to prevent items from being raised near or above the surface of spent fuel pools, reactor vessels, and flooded refueling cavities.
7. Identify the conditions required to issue an LHRA key.
8. Identify the conditions that allow issuance of a Master LHRA key.
9. List the LHRA key possessor responsibilities.
10. List the notifications required to be made prior to transferring an LHRA key.
11. Describe the actions taken when terminating access into an LHRA.

**Questions?**

