



Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381-2000

August 17, 2011

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555-0001

Watts Bar Nuclear Plant, Unit 2  
NRC Docket No. 50-391

**Subject: Watts Bar Nuclear Plant (WBN) Unit 2 - Submittal of Pre-op Test Instruction**

The following approved WBN Unit 2 Pre-op Test Instruction (PTI) is enclosed:

PTI NUMBER	Rev.	TITLE
2-PTI-090-01	0	Radiation Monitors - Area Dose Rate

If you have any questions, please contact Pete Olson at (423) 365-3294.

Respectfully,

David Stinson  
Watts Bar Unit 2 Vice President

Enclosure  
cc (Enclosure):

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Watts Bar Nuclear Plant  
1260 Nuclear Plant Road  
Spring City, Tennessee 37381

DD30  
KLR

WATTS BAR NUCLEAR PLANT  
UNIT 2 STARTUP

TITLE: Radiation Monitors - Area Dose Rate

Instruction No: 2-PTI-090-01

Revision No: 0000

PREPARED BY: Regina Ballard

PRINT NAME/ SIGNATURE

DATE 10/22/10

REVIEWED BY: A. Blake Lowe

PRINT NAME/ SIGNATURE

DATE 10-22-10

INSTRUCTION APPROVAL

JTG MEETING NO: 2-11-014

JTG CHAIRMAN: [Signature]

DATE 8/11/11

APPROVED BY: [Signature]

DATE 8/11/11

PREOPERATIONAL STARTUP MANAGER

TEST RESULTS APPROVAL

JTG MEETING NO: \_\_\_\_\_

JTG CHAIRMAN: \_\_\_\_\_

DATE \_\_\_\_\_

APPROVED BY: \_\_\_\_\_

DATE \_\_\_\_\_

PREOPERATIONAL STARTUP MANAGER

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**Revision Log**

<b>Revision or Change Number</b>	<b>Effective Date</b>	<b>Affected Page Numbers</b>	<b>Description of Revision/Change</b>
0000	8/11/11	All	INITIAL ISSUE

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## **1.0 INTRODUCTION**

### **1.1 Test Objectives**

- A. Demonstrate operation of the Area Dose Rate radiation monitors and their response to check sources, including verification of local and control room indicating and recording devices.
- B. Demonstrate the initiation of high radiation alarm signals and the ability of Area Dose Rate monitors to alert personnel of excessive dose rate levels.

### **1.2 Scope**

- A. 2-LPR-90-2, ACCIDENT RAD MON OUTLT PERSONNEL ENT LOOP
  - 1. 2-RM-90-2, ACCIDENT RAD MON OUTLET PERSONNEL ENT (MCR Panel 0-M-12)
  - 2. 2-RR-90-1P003 RECORDER (POINT #3 MCR Panel 0-M-12)
  - 3. 2-RI-90-2A, ACCIDENT RAD MON OUTLET PERSONNEL ENT (MCR Panel 0-M-12)
  - 4. 2-RI-90-2B, PERSONNEL AIRLOCK AREA RADIATION (El. 757', A11Y).
  - 5. CONTROL ROOM AND LOCAL ALARMS AND ANNUNCIATION (MCR Panel 0-M-12 and El. 757', A11Y).
- B. 2-LPR-90-59, UP COMPARTMENT REAC BLDG AREA MON LOOP
  - 1. 2-RM-90-59, UP COMPARTMENT REAC BLDG AREA MON (MCR Panel 0-M-12)
  - 2. 2-RR-90-1P001, RECORDER (POINT #1 MCR Panel 0-M-12)
  - 3. 2-RI-90-59A, UP COMPARTMENT REAC BLDG - AREA MON (MCR Panel 0-M-12)
  - 4. 2-RI-90-59B, UP COMPARTMENT REAC BLDG - AREA MON (El. 756', Az. 310°)
  - 5. CONTROL ROOM AND LOCAL ALARMS AND ANNUNCIATION (MCR Panel 0-M-12 and El. 756', Az. 310°).

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## 1.2 Scope (continued)

### C. 2-LPR-90-60, UP COMPARTMENT REAC BLDG AREA MON LOOP

1. 2-RM-90-60, UP COMPARTMENT REAC BLDG AREA MON (MCR Panel 0-M-12)
2. 2-RR-90-1P002 RECORDER (POINT #2 MCR Panel 0-M-12)
3. 2-RI-90-60A, UP COMPARTMENT REAC BLDG - AREA MON (MCR Panel 0-M-12)
4. 2-RI-90-60B, UP COMPARTMENT REAC BLDG - AREA MON (El. 756', Az. 225°)
5. CONTROL ROOM AND LOCAL ALARMS AND ANNUNCIATION (MCR Panel 0-M-12 and El. 756', Az. 225°).

### D. 2-LPR-90-61, LWR COMPARTMENT INSTR ROOM AREA MON LOOP

1. 2-RM-90-61, LWR COMPARTMENT INSTR ROOM AREA MON (MCR Panel 0-M-12)
2. 2-RR-90-1P004 RECORDER (POINT #4 MCR Panel 0-M-12)
3. 2-RI-90-61A, LOWER COMPARTMENT INSTR RM - AREA MON (MCR Panel 0-M-12)
4. 2-RI-90-61B, LOWER COMPARTMENT INSTR RM - AREA MON (El. 736', Az. 82°)
5. CONTROL ROOM AND LOCAL ALARMS AND ANNUNCIATION (MCR Panel 0-M-12 and El. 736', Az. 82°).

### E. 2-LPR-90-271, CNTMT POST ACC HIGH RAD

1. 2-RM-90-271, UPR INS CNTMT POST ACD AREA MON (MCR Panel 2-M-30)
2. CONTROL ROOM ANNUNCIATION (MCR Panel 2-M-30).

### F. 2-LPR-90-272, CNTMT POST ACC HIGH RAD

1. 2-RM-90-272, UPR INS CNTMT POST ACD AREA MON (MCR Panel 2-M-30)
2. CONTROL ROOM ANNUNCIATION (MCR Panel 2-M-30).

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**1.2 Scope (continued)**

**G. 2-LPR-90-273, CNTMT POST ACC HIGH RAD**

1. 2-RM-90-273, LWR INS CNTMT POST ACD AREA MON (MCR Panel 2-M-30)
2. CONTROL ROOM ANNUNCIATION (MCR Panel 2-M-30).

**H. 2-LPR-90-274, CNTMT POST ACC HIGH RAD**

1. 2-RM-90-274, LWR INS CNTMT POST ACD AREA MON (MCR Panel 2-M-30)
2. CONTROL ROOM ANNUNCIATION (MCR Panel 2-M-30).



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## **2.0 REFERENCES**

### **2.1 Performance References**

- A. SMP-9.0, Conduct of Test
- B. 2-IMI-90.021, 18 Mo. Channel Cal (Source) of Accident Rad Mon Outlet Pers Entrance Loop, [LATER]
- C. 2-IMI-90.020, Calibration of Low Range Area Radiation Monitors with RM-1000 Digital Ratemeters, [LATER]
- D. 2-SI-90-1, 18 Mo Ch Source Cal CNTMT UPR COMPT HR Post Accident ARM Train A Loop 2-LPR-90-271, [LATER]
- E. 2-SI-90-2, 18 Mo Ch Source Cal CNTMT UPR COMPT HR Post Accident ARM Train B Loop 2-LPR-90-272, [LATER]
- F. 2-SI-90-3, 18 Mo Ch Source Cal CNTMT LWR COMPT HR Post Accident ARM Train A Loop 2-LPR-90-273, [LATER]
- G. 2-SI-90-4, 18 Mo Ch Source Cal CNTMT LWR COMPT HR Post Accident ARM Train B Loop 2-LPR-90-274, [LATER]

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## **2.2 Developmental References**

### **A. Final Safety Analysis Report (FSAR)**

1. FSAR - Amendment 104
  - a. Chapter 12, Section 12.3.4 and Table 12.3-4
  - b. Chapter 14.2.12 and Table 14.2-1 Sheet 33

### **B. Drawings**

1. Electrical
  - a. 1-45B655-12D, Rev 3, Main Control Room Annunciator Inputs Window Box XA-55-12D, CCD
  - b. 1-45B655-E12D, Rev 0, Electrical Annunciator Window Box XA-55-12D Engraving, CCD
  - c. 47B601-55-78, Rev 4, Electrical Instrument Tabulation, AD DRA 52338-003, Rev 0
  - d. 2-45W600-55-46, Wiring Diagrams Annunciator System Key Diagrams, Sheet 46, [ANT] DRA 52338-113, Rev 0
  - e. 1-45W706-3, Rev 48, Wiring Diagram 120V Vital Inst Pwr Bds 1-III & 2-III Connection Diagram, Sheet 3, CCD
  - f. 1-45W706-4, Rev 50, Wiring Diagram 120V AC Vital Inst Pwr Bds 1-IV & 2-IV Connection Diagrams, CCD
  - g. 45N708-3, Rev 9, Wiring Diagram Misc 120V AC Distribution Panels Connection Diagram, Sheet 3, AD
  - h. 45N2620-1, Rev 8, Wiring Diagrams Radiation Monitoring System Connection Diagrams Sh-1, AD DRA 52338-101, Rev 0 DRA 52341-101, Rev 0
  - i. 45W2620-4, Rev 7, Wiring Diagrams Radn Monitoring Sys Connection Diag Sh 4, AD DRA 52338-106, Rev 0

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## **2.2 Developmental References (continued)**

- j. 45W2651-3, Rev 3, Wiring Diagrams Unit Cont Bd Pnl 2-M-30  
Connection Diagrams Sh-3, AD  
DRA 52338-109, Rev 0  
DRA 52374-07, Rev 0
- k. 1-45W26246-3, Rev 14, Wiring Diagram Unit Control Bd Pnl 2-M-7  
Connection Diagrams, CCD
- l. 1-45W2646-3, Rev 16, Wiring Diagram Unit Control Bd Pnl 2-M-7  
Connection Diagram, CCD

### **2. Logic/Control**

- a. 2-47W610-90-2, Rev 0, Electrical Instrument and Controls Radiation  
Monitoring Sys, CCD  
DRA 52338-002, Rev 0  
DRA 52341-007, Rev 0
- b. 2-47W610-90-4, Rev 1, Electrical Control Diagram Radiation  
Monitoring Sys, CCD  
DRA 52338-001, Rev 0  
DRA 52339-003, Rev 0

### **3. Vendor Drawings**

- a. 0281-5011-3, Rev 901, Wiring Diagram Radiation Monitoring System
- b. D281-0253, Rev H, ASSEMBLY, LOCAL INDICATOR

### **C. Vendor Manuals**

- 1. WBN-VTM-G292-0400, Vendor Technical Manual for GA Technologies  
Low, Intermediate and High Range Area Radiation Monitors, Rev 6
- 2. SQN-VTD-G063-0460, Vendor Technical Documentation for Sorrento  
Electronics RM-1000 Digital Radiation Process Technical Manual -  
Document 04508100-1TM, Revision C, October 2003.

To be verified against WBN-VTD-G292-2030 [Later] in Appendix A.

### **D. Documents**

- 1. 2-TSD-90-6, Area Radiation Monitoring System (Area Monitors) Test  
Scoping Document, Rev 1

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### 3.0 PRECAUTIONS AND LIMITATIONS

- A. Standard precautions shall be followed for working around energized electrical equipment in accordance with TVA Safety Procedure 1021.
- B. Steps may be repeated if all components cannot be tested in a step. However, if the test has been exited, prerequisite steps must be re-verified and a Chronological Test Log (CTL) entry made.
- C. Discrepancies between component ID tags and the description in a procedure/instruction if the UNIDs match, exclusive of place keeping zeros and train designators (e.g. 2-HS-31-468 vs. 2-HS-031-0468) and the noun description is sufficient to identify the component. This condition does not require a TDN in accordance with SMP-14.0. If the component label needs to be changed, a Tag Request Form (TR Card) should be processed in accordance with TI-12.14. Make an entry in the CTL and continue testing.
- D. All wires removed/lifted from a terminal shall be identified and taped or covered with an insulator to prevent personnel or equipment hazard and possible spurious initiations. The wires should be grouped together and labeled with the work implementing document number that required them to be lifted if left unattended.
- E. All open problems are to be tracked by a corrective action document and entered on the appropriate system punchlist.
- F. Problems identified during the test shall be annotated on the Chronological Test Log (CTL) from SMP-9.0 including a description of the problem, the procedure step when/where the problem was identified, corrective action steps taken to resolve the problem, and the number of the corrective action document, if one was required.
- G. Observe all Radiation Protection (RP) requirements when working in or near radiological areas.
- H. Ensure there are no adverse effects to the operation of Unit 1 structures, systems, or components.
- I. Test personnel will coordinate with Unit 1 Operations when manipulating Unit 1 equipment if required.
- J. Radiological Worker and radioactive source handling training is required for handling radioactive sources.

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### **3.0 PRECAUTIONS AND LIMITATIONS (continued)**

- K. Use of radioactive calibration sources shall be coordinated with Radiation Protection.
- L. Personnel assigned to perform steps requiring operation of the digital ratemeters must be familiar with the RM-1000 operation and maintenance and should review the vendor technical manual prior to performing associated test steps. (Subsections 6.1 through 6.8).
- M. Operations personnel should be advised that a High Radiation Alarm will be initiated when conducting the loss of power simulation in each subsection.
- N. Testing of the containment high range area monitor channels in this test will require actions inside containment requiring climbing equipment and safety harnesses.

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#### 4.0 PREREQUISITE ACTIONS

##### NOTE

Prerequisite steps may be performed in any order unless otherwise stated and should be completed as close in time as practicable to the start of instruction subsection to which they apply.

#### 4.1 Preliminary Actions

- [1] **EVALUATE** open items in Watts Bar Integrated Task Equipment List (WITEL), **AND**  
  
**ENSURE** they will NOT adversely affect the test performance and results. \_\_\_\_\_
- [2] **ENSURE** changes to the references listed on Appendix A, have been reviewed, and determined NOT to adversely affect the test performance. \_\_\_\_\_
- [3] **VERIFY** current revisions and change paper for referenced drawings has been reviewed and determined NOT to adversely affect the test performance, **AND**  
  
**ATTACH** documentation of current drawing revision numbers and change papers that were reviewed to the data package. \_\_\_\_\_
- [4] **VERIFY** the test/performance copy of this Preoperational Test Instruction (PTI) is the current revision including any change notices and as needed, each test person assisting in this test has the current revision including any change notices. \_\_\_\_\_
- [5] **OBTAIN** copies of the applicable forms from the latest revision of SMP-9.0, **AND**  
  
**ATTACH** to this PTI for use during the performance of this PTI. \_\_\_\_\_

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#### 4.1 Preliminary Actions (continued)

- [6] **ENSURE** outstanding Design Change Notices (DCN's), Engineering Document Construction Releases (EDCR's) or Temporary Alterations (TA's) do NOT adversely impact testing, **AND**

**ATTACH** documentation of DCN's, EDCR's and TA's that were reviewed to the data package. \_\_\_\_\_

- [7] **ENSURE** required Component Testing has been completed prior to start of test. \_\_\_\_\_

- [8] **ENSURE** a review of outstanding Clearances has been coordinated with Unit 2 Operations for impact to the test performance, **AND**

**RECORD** in Appendix B, Temporary Condition Log if required. \_\_\_\_\_

- [9] **VERIFY** plant instruments, listed on Appendix C, Permanent Plant Instrumentation Log, are placed in service and are within their calibration interval.

A. Subsection 6.1 \_\_\_\_\_

B. Subsection 6.2 \_\_\_\_\_

C. Subsection 6.3 \_\_\_\_\_

D. Subsection 6.4 \_\_\_\_\_

E. Subsection 6.5 \_\_\_\_\_

F. Subsection 6.6 \_\_\_\_\_

G. Subsection 6.7 \_\_\_\_\_

H. Subsection 6.8 \_\_\_\_\_

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#### 4.1 Preliminary Actions (continued)

[10] **ENSURE** System 55, Annunciator and Sequential Events Recording System applicable TBK switches are ON, the applicable Master Switches are ON, and window software input(s) are ENABLED for the following Annunciator windows.

- A. 0-XA-55-12D/193-B, 2-RR-90-1 AREA RAD HI  
(Subsections 6.1, 6.2, 6.3, and 6.4) \_\_\_\_\_
- B. 0-XA-55-12D/193-E, 2-RR-90-1 AREA MONITORS  
INSTR MALF (Subsections 6.1, 6.2, 6.3, and 6.4) \_\_\_\_\_
- C. 0-XA-55-12D/191-E, PAS MON PNL 2M30/31 INSTR  
MALF (Subsections 6.5, 6.6, 6.7, and 6.8) \_\_\_\_\_

[11] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

- A. R9015A, ACCIDENT RAD MON OUT PERSONNEL,  
2-RE-90-2 (Subsection 6.1) \_\_\_\_\_
- B. R9016A, UP COMPT REAC BLDG AREA MON,  
2-RE-90-59 (Subsection 6.2) \_\_\_\_\_
- C. R9017A, UP COMPT REAC BLDG AREA MON,  
2-RE-90-60 (Subsection 6.3) \_\_\_\_\_
- D. R9018A, UPR CNTMT POST ACD AREA MON,  
2-RE-90-271 (Subsection 6.5) \_\_\_\_\_
- E. R9019A, UPR CNTMT POST ACD AREA MON  
2-RE-90-272 (Subsection 6.6) \_\_\_\_\_
- F. R9020A, LWR CNTMT POST ACC AREA MON  
2-RE-90-273 (Subsection 6.7) \_\_\_\_\_
- G. R9021A, LWR CNTMT POST ACC AREA MON  
2-RE-90-274 (Subsection 6.8) \_\_\_\_\_

[12] **ENSURE** System 278, Main and Auxiliary Control Boards System is supplying power via plug mold outlets in Panels MCR Panel 2-M-30. \_\_\_\_\_

[13] **ENSURE** components contained within the boundaries of this test are under the jurisdictional control of Preoperational Startup Engineering (PSE) and/or Plant Operations. \_\_\_\_\_



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**4.1 Preliminary Actions (continued)**

- [14] **PERFORM** a pretest walkdown on equipment to be tested to ensure no conditions exist that will impact test performance. \_\_\_\_\_
- [15] **CONDUCT** a pretest briefing with Test and Operations personnel in accordance with SMP-9.0. \_\_\_\_\_
- [16] **ENSURE** communications are available for areas where testing is to be conducted. \_\_\_\_\_

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#### 4.2 Special Tools, Measuring and Test Equipment, Parts, and Supplies.

##### NOTE

If no M&TE is used, then Step 4.2[1] is N/A.

[1] **ENSURE** any M&TE or equivalent is available and within their calibration due dates, **AND**

**RECORD** the M&TE data on SMP-9.0, Measuring and Test Equipment (M&TE) Log.

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#### 4.3 Field Preparations

- [1] **ENSURE** the following radiation monitor modules, located on 0-M-12 and 2-M-30, are reset and operational with the green OPERATE light ON, and the red HIGH (2) and yellow ALERT (1) lights OFF.

SUBSECTION	MODULE	INITIALS
6.1	2-RM-90-2	
6.2	2-RM-90-59	
6.3	2-RM-90-60	
6.4	2-RM-90-61	
6.5	2-RM-90-271	
6.6	2-RM-90-272	
6.7	2-RM-90-273	
6.8	2-RM-90-274	

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#### 4.4 Approvals and Notifications

- [1] **OBTAIN** permission of the Preoperational Startup Manager to start the test.

\_\_\_\_\_  
Preoperational Startup Manager  
Signature

\_\_\_\_\_  
Date

- [2] **OBTAIN** the Unit 2 Supervisor's (US/SRO) or Shift Manager's (SM) authorization.

\_\_\_\_\_  
U2 US/SRO/SM Signature

\_\_\_\_\_  
Date

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## 5.0 ACCEPTANCE CRITERIA

- [1] The Local and Control Room Indicating and Recording Devices of each radiation monitor listed exhibits an increased deflection above background when the associated radiation detector is exposed to an appropriate check source.
  - [1.1] 2-LPR-90-2, ACCIDENT RAD MON OUTLT PERSONNEL ENT LOOP
    - A. 2-RM-90-2, ACCIDENT RAD MON OUTLET PERSONNEL ENT (Step 6.1[29.2])
    - B. 2-RR-90-1P003, AREA RADIATION MONITORS, recorder point 3 (Step 6.1[29.3])
    - C. 2-RI-90-2B, PERSONNEL AIRLOCK AREA RADIATION (Step 6.1[29.3])
  - [1.2] 2-LPR-90-59, UP COMPARTMENT REAC BLDG AREA MON LOOP
    - A. 2-RM-90-59, UP COMPARTMENT REAC BLDG AREA MON (Step 6.2[28.2])
    - B. 2-RR-90-1P001, AREA RADIATION MONITORS, recorder point 1 (Step 6.2[28.3])
    - C. 2-RI-90-59B, UP COMPARTMENT REAC BLDG AREA MON (Step 6.2[28.3])
  - [1.3] 2-LPR-90-60, UP COMPARTMENT REAC BLDG AREA MON LOOP
    - A. 2-RM-90-60, UP COMPARTMENT REAC BLDG AREA MON (Step 6.3[28.2])
    - B. 2-RR-90-1P002, AREA RADIATION MONITORS, recorder point 2 (Step 6.3[28.3])
    - C. 2-RI-90-60B, UP COMPARTMENT REAC BLDG AREA MON (Step 6.3[28.3])

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## 5.0 ACCEPTANCE CRITERIA (continued)

- [1.4] 2-LPR-90-61, LWR COMPARTMENT INSTR ROOM AREA MON LOOP
  - A. 2-RM-90-61, LWR COMPARTMENT INSTR ROOM AREA MON (Step 6.4[28.2])
  - B. 2-RR-90-1P004, AREA RADIATION MONITORS, recorder point 4 (Step 6.4[28.3])
  - C. 2-RI-90-61B, LWR COMPARTMENT INSTR RM-AREA MON (Step 6.4[28.3])
- [1.5] 2-LPR-90-271, CNTMT POST ACC HIGH RAD  
2-RM-90-271, UPR INS CNTMT POST ACD AREA MON (Step 6.5[26.2])
- [1.6] 2-LPR-90-272, CNTMT POST ACC HIGH RAD  
2-RM-90-272, UPR INS CNTMT POST ACD AREA MON (Step 6.6[26.2])
- [1.7] 2-LPR-90-273, CNTMT POST ACC HIGH RAD  
2-RM-90-273, LWR INS CNTMT POST ACD AREA MON (Step 6.7[26.2])
- [1.8] 2-LPR-90-274, CNTMT POST ACC HIGH RAD  
2-RM-90-274, LWR INS CNTMT POST ACD AREA MON (Step 6.8[26.2])
- [2] Control Room and Local Annunciations and Alarms function properly:
  - [2.1] 2-LPR-90-2, ACCIDENT RAD MON OUTLT PERSONNEL ENT
    - A. Control Room Annunciations and Alarms:
      - 2-RM-90-2  
(Steps 6.1[7], 6.1[11], 6.1[13], 6.1[18], 6.1[23], 6.1[27.1]C, 6.1[27.1]D, 6.1[27.2]C, 6.1[27.2]D, 6.1[28.2]B, 6.1[28.2]C, 6.1[28.3]B, 6.1[28.3]C, 6.1[29.4], 6.1[30]A)

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## 5.0 ACCEPTANCE CRITERIA (continued)

- 0-XA-55-12D Window 193-B, 2-RR-90-1 AREA RAD HI  
(Steps 6.1[21]A, 6.1[24]A, 6.1[27.1]E, 6.1[27.2]E, 6.1[28.2]D, 6.1[28.3]D)
- Event Display Monitor Displays 193-B PERSONNEL AIR LOCK AREA RAD HI (2-RM-90-2)  
(Steps 6.1[21]B, 6.1[24]B, 6.1[27.1]F, 6.1[27.2]F, 6.1[28.2]E, 6.1[28.3]E)
- 0-XA-55-12D Window 193-E, 2-RR-90-1 AREA MONITORS INSTR MALF  
(Steps 6.1[9]A, 6.1[14]A, 6.1[19]A, 6.1[21]C, 6.1[24]C, 6.1[30]B)
- Event Display Monitor Displays 193-E PERSONNEL AIR LOCK AREA MON INSTR MALF  
(Steps 6.1[9]B, 6.1[14]B, 6.1[19]B, 6.1[21]D, 6.1[24]D, 6.1[30]C)

### B. Local Alarms

- 2-RI-90-B2, PERSONNEL AIRLOCK AREA RADIATION  
(Steps 6.1[8], 6.1[27.1]A, 6.1[27.1]B, 6.1[27.2]A, 6.1[27.2]B, 6.1[27.3], 6.1[28.2]A, 6.1[28.3]A)

## [2.2] 2-LPR-90-59, UP COMPARTMENT REAC BLDG AREA MON

### A. Control Room Annunciations and Alarms:

- 2-RM-90-59  
(Steps 6.2[6], 6.2[10], 6.2[12], 6.2[17], 6.2[22], 6.2[26.1]C, 6.2[26.1]D, 6.2[26.2]C, 6.2[26.2]D, 6.2[27.2]B, 6.2[27.2]C, 6.2[27.3]B, 6.2[27.3]C, 6.2[28.4], 6.2[29]A)

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## 5.0 ACCEPTANCE CRITERIA (continued)

- 0-XA-55-12D Window 193-B, 2-RR-90-1 AREA RAD HI  
(Steps 6.2[20]A, 6.2[23]A, 6.2[26.1]E, 6.2[26.2]E, 6.2[27.2]D, 6.2[27.3]D)
- Event Display Monitor Displays 193-B ACCESS HATCH AREA RAD HI (2-RM-90-59)  
(Steps 6.2[20]B, 6.2[23]B, 6.2[26.1]F, 6.2[26.2]F, 6.2[27.2]E, 6.2[27.3]E)
- 0-XA-55-12D Window 193-E, 2-RR-90-1 AREA MONITORS INSTR MALF  
(Steps 6.2[8]A, 6.2[13]A, 6.2[18]A, 6.2[20]C, 6.2[23]C, 6.2[29]B)
- Event Display Monitor Displays 193-E ACCESS HATCH AREA MON INSTR MALF (2-RM-90-59)  
(Steps 6.2[8]B, 6.2[13]B, 6.2[18]B, 6.2[20]D, 6.2[23]D, 6.2[29]C)

### B. Local Alarms

- 2-RI-90-59B, UP COMPARTMENT REAC BLDG AREA MON  
(Steps 6.2[7], 6.2[26.1]A, 6.2[26.1]B, 6.2[26.2]A, 6.2[26.2]B, 6.2[26.3], 6.2[27.2]A, 6.2[27.3]A)

[2.3] 2-LPR-90-60, UP COMPARTMENT REAC BLDG AREA MON

### A. Control Room Annunciations and Alarms:

- 2-RM-90-60  
(Steps 6.3[6], 6.3[10], 6.3[12], 6.3[17], 6.3[22], 6.3[26.1]C, 6.3[26.1]D, 6.3[26.2]C, 6.3[26.2]D, 6.3[27.2]B, 6.3[27.2]C, 6.3[27.3]B, 6.3[27.3]C, 6.3[28.4], 6.3[29]A)
- 0-XA-55-12D Window 193-B, 2-RR-90-1 AREA RAD HI  
(Steps 6.3[20]A, 6.3[23]A, 6.3[26.1]E, 6.3[26.2]E, 6.3[27.2]D, 6.3[27.3]D)



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## 5.0 ACCEPTANCE CRITERIA (continued)

- Event Display Monitor Displays 193-B PERSONNEL AIR LOCK AREA RAD HI (2-RM-90-60)  
(Steps 6.3[20]B, 6.3[23]B, 6.3[26.1]F, 6.3[26.2]F, 6.3[27.2]E, 6.3[27.3]E)
- 0-XA-55-12D Window 193-E, 2-RR-90-1 AREA MONITORS INSTR MALF  
(Steps 6.3[8]A, 6.3[13]A, 6.3[18]A, 6.3[20]C, 6.3[23]C, 6.3[29]B)
- Event Display Monitor Displays 193-E PERSONNEL AIR LOCK AREA MON INSTR MALF (2-RM-90-60)  
(Steps 6.3[8]B, 6.3[13]B, 6.3[18]B, 6.3[20]D, 6.3[23]D, 6.3[29]C)

### B. Local Alarms:

- 2-RI-90-60B, UP COMPARTMENT REAC BLDG AREA MON  
(Steps 6.3[7], 6.3[26.1]A, 6.3[26.1]B, 6.3[26.2]A, 6.3[26.2]B, 6.3[26.3], 6.3[27.2]A, 6.3[27.3]A)

## [2.4] 2-LPR-90-61, LWR COMPARTMENT INSTR ROOM AREA MON

### A. Control Room Annunciations and Alarms:

- 2-RM-90-61  
(Steps 6.4[6], 6.4[10], 6.4[12], 6.4[17], 6.4[22], 6.4[26.1]C, 6.4[26.1]D, 6.4[26.2]C, 6.4[26.2]D, 6.4[27.2]B, 6.4[27.2]C, 6.4[27.3]B, 6.4[27.3]C, 6.4[28.4], 6.4[29]A)
- 0-XA-55-12D Window 193-B, 2-RR-90-1 AREA RAD HI  
(Steps 6.4[20]A, 6.4[23]A, 6.4[26.1]E, 6.4[26.2]E, 6.4[27.2]D, 6.4[27.3]D)
- Event Display Monitor Displays 193-B CONT INSTR RM AREA RAD HI (2-RM-90-61)  
(Steps 6.4[20]B, 6.4[23]B, 6.4[26.1]F, 6.4[26.2]F, 6.4[27.2]E, 6.4[27.3]E)

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## 5.0 ACCEPTANCE CRITERIA (continued)

- 0-XA-55-12D Window 193-E, 2-RR-90-1 AREA MONITORS INSTR MALF  
(Steps 6.4[8]A, 6.4[13]A, 6.4[18]A, 6.4[20]C, 6.4[23]C, 6.4[29]B)
- Event Display Monitor Displays 193-E INCORE INSTR ROOM AREA MON INSTR MALF  
(2-RM-90-61)  
(Steps 6.4[8]B, 6.4[13]B, 6.4[18]B, 6.4[20]D, 6.4[23]D, 6.4[29]C)

### B. Local Alarms:

- 2-RI-90-61B, LOWER COMPARTMENT INSTR RM-AREA MON  
(Steps 6.4[7], 6.4[26.1]A, 6.2[26.1]B, 6.4[26.2]A, 6.4[26.2]B, 6.4[26.3], 6.4[27.2]A, 6.4[27.3]A)

## [2.5] 2-LPR-90-271, CNTMT POST ACC HIGH RAD

### A. Control Room Annunciations and Alarms:

- 2-RM-90-271  
(Steps 6.5[5], 6.5[8], 6.5[10], 6.5[15], 6.5[20], 6.5[24.1]A, 6.5[24.1]B, 6.5[24.2]A, 6.5[24.2]B, 6.5[25.2]A, 6.5[25.2]B, 6.5[25.3]A, 6.5[25.3]B, 6.5[26.3], 6.5[27]A)
- 2-XA-55-30 Window 256A, UPPER CNTMNT RE-271/272 RAD HI  
(Steps 6.5[18]A, 6.5[21]A, 6.5[24.1]C, 6.5[24.2]C, 6.6[25.2]C, 6.5[25.3]C)
- 0-XA-55-12D Window 191-E, PAS MON PNL 2M30/31 INSTR MALF  
(Steps 6.5[6]A, 6.5[11]A, 6.5[16]A, 6.5[18]B, 6.5[21]B, 6.5[27]B)
- Event Display Monitor Displays 191-E UPPER CNTMT PAS MON INSTR MALF  
(2-RM-90-271-A)  
(Steps 6.5[6]B, 6.5[11]B, 6.5[16]B, 6.5[18]C, 6.5[21]C, 6.5[27]C)

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## 5.0 ACCEPTANCE CRITERIA (continued)

### [2.6] 2-LPR-90-272, CNTMT POST ACC HIGH RAD

#### A. Control Room Annunciation and Alarms:

- 2-RM-90-272  
(Steps 6.6[5], 6.6[8], 6.6[10], 6.6[15], 6.6[20],  
6.6[24.1]A, 6.6[24.1]B, 6.6[24.2]A, 6.6[24.2]B,  
6.6[25.2]A, 6.6[25.2]B, 6.6[25.3]A, 6.6[25.3]B,  
6.6[26.3], 6.6[27]A)
- 2-XA-55-30 Window 256A, UPPER CNTMNT  
RE-271/272 RAD HI  
(Steps 6.6[18]A, 6.6[21]A, 6.6[24.1]C,  
6.6[24.2]C, 6.6[25.2]C, 6.6[25.3]C)
- 0-XA-55-12D Window 191-E, PAS MON PNL  
2M30/31 INSTR MALF  
(Steps 6.6[6]A, 6.6[11]A, 6.6[16]A, 6.6[18]B,  
6.6[21]B, 6.6[27]B)
- Event Display Monitor Displays 191-E UPPER  
CNTMT PAS MON INSTR MALF  
(2-RM-90-272-B)  
(Steps 6.6[6]B, 6.6[11]B, 6.6[16]B, 6.6[18]C,  
6.6[21]C, 6.6[27]C)

### [2.7] 2-LPR-90-273, CNTMT POST ACC HIGH RAD

#### A. Control Room Annunciations and Alarms:

- 2-RM-90-273  
(Steps 6.7[5], 6.7[8], 6.7[10], 6.7[15], 6.7[20],  
6.7[24.1]A, 6.7[24.1]B, 6.7[24.2]A, 6.6[24.2]B,  
6.7[25.2]A, 6.7[25.2]B, 6.7[25.3]A, 6.7[25.3]B,  
6.6[26.3], 6.7[27]A)
- 2-XA-55-30 Window 256B, LOWER CNTMNT  
RE-273/274 RAD HI  
(Steps 6.7[18]A, 6.7[21]A, 6.7[24.1]C,  
6.7[24.2]C, 6.7[25.2]C, 6.7[25.3]C)

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## 5.0 ACCEPTANCE CRITERIA (continued)

- 0-XA-55-12D Window 191-E, PAS MON PNL  
2M30/31 INSTR MALF  
(Steps 6.7[6]A, 6.7[11]A, 6.7[16]A, 6.7[18]B,  
6.7[21]B, 6.7[27]B)
- Event Display Monitor Displays 191-E UPPER  
CNTMT PAS MON INSTR MALF  
(2-RM-90-273-A)  
(Steps 6.7[6]B, 6.7[11]B, 6.7[16]B, 6.7[18]C,  
6.7[21]C, 6.7[27]C)

### [2.8] 2-LPR-90-274, CNTMT POST ACC HIGH RAD

#### A. Control Room Annunciations and Alarms:

- 2-RM-90-274  
(Steps 6.8[5], 6.8[8], 6.8[10], 6.8[15], 6.8[20],  
6.8[24.1]A, 6.8[24.1]B, 6.8[24.2]A, 6.8[24.2]B,  
6.8[25.2]A, 6.8[25.2]B, 6.8[25.3]A, 6.8[25.3]B,  
6.8[26.3], 6.8[27]A)
- 2-XA-55-30 Window 256B, LOWER CNTMNT  
RE-273/274 RAD HI  
(Steps 6.8[18]A, 6.8[21]A, 6.8[24.1]C,  
6.8[24.2]C, 6.8[25.2]C, 6.8[25.3]C)
- 0-XA-55-12D Window 191-E, PAS MON PNL  
2M30/31 INSTR MALF  
(Steps 6.8[6]A, 6.8[11]A, 6.8[16]A, 6.8[18]B,  
6.8[21]B, 6.8[27]B)
- Event Display Monitor Displays 191-E UPPER  
CNTMT PAS MON INSTR MALF  
(2-RM-90-274-B)  
(Steps 6.8[6]B, 6.8[11]B, 6.8[16]B, 6.8[18]C,  
6.8[21]C, 6.8[27]C)

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## 5.0 ACCEPTANCE CRITERIA (continued)

[3] Ratemeter is capable of "being reset" after transition from any alarm condition to normal status.

- [3.1] 2-LPR-90-2, ACCIDENT RAD MON OUTLT PERSONNEL ENT (Step 6.1[28.3])
- [3.2] 2-LPR-90-59, UP COMPARTMENT REAC BLDG AREA MON (Step 6.2[27.3])
- [3.3] 2-LPR-90-60, UP COMPARTMENT REAC BLDG AREA MON (Step 6.3[27.3])
- [3.4] 2-LPR-90-61, LWR COMPARTMENT INSTR ROOM AREA MON (Step 6.4[27.3])
- [3.5] 2-LPR-90-271, CNTMT POST ACC HIGH RAD (Step 6.5[25.3])
- [3.6] 2-LPR-90-272, CNTMT POST ACC HIGH RAD (Step 6.6[25.3])
- [3.7] 2-LPR-90-273, CNTMT POST ACC HIGH RAD (Step 6.7[25.3])
- [3.8] 2-LPR-90-274, CNTMT POST ACC HIGH RAD (Step 6.8[25.3])

[4] Reset function of ratemeter is inoperable during alarm conditions.

- [4.1] 2-LPR-90-2, ACCIDENT RAD MON OUTLT PERSONNEL ENT (Step 6.1[27.2])
- [4.2] 2-LPR-90-59, UP COMPARTMENT REAC BLDG AREA MON (Step 6.2[26.2])
- [4.3] 2-LPR-90-60, UP COMPARTMENT REAC BLDG AREA MON (Step 6.3[26.2])
- [4.4] 2-LPR-90-61, LWR COMPARTMENT INSTR ROOM AREA MON (Step 6.4[26.2])
- [4.5] 2-LPR-90-271, CNTMT POST ACC HIGH RAD (Step 6.5[24.2])
- [4.6] 2-LPR-90-272, CNTMT POST ACC HIGH RAD (Step 6.6[24.2])
- [4.7] 2-LPR-90-273, CNTMT POST ACC HIGH RAD (Step 6.7[24.2])
- [4.8] 2-LPR-90-274, CNTMT POST ACC HIGH RAD (Step 6.8[24.2])

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## **5.0 ACCEPTANCE CRITERIA (continued)**

[5] Alarms in the control room due to a loss of signal (zero counts over a specified time).

- [5.1] 2-LPR-90-2, ACCIDENT RAD MON OUTLT PERSONNEL ENT (Step 6.1[30])
- [5.2] 2-LPR-90-59, UP COMPARTMENT REAC BLDG AREA MON (Step 6.2[29])
- [5.3] 2-LPR-90-60, UP COMPARTMENT REAC BLDG AREA MON (Step 6.3[29])
- [5.4] 2-LPR-90-61, LWR COMPARTMENT INSTR ROOM AREA MON (Step 6.4[29])
- [5.5] 2-LPR-90-271, CNTMT POST ACC HIGH RAD (Step 6.5[27])
- [5.6] 2-LPR-90-272, CNTMT POST ACC HIGH RAD (Step 6.6[27])
- [5.7] 2-LPR-90-273, CNTMT POST ACC HIGH RAD (Step 6.7[27])
- [5.8] 2-LPR-90-274, CNTMT POST ACC HIGH RAD (Step 6.8[27])

[6] Alarms in the control room due to loss of power.

- [6.1] 2-LPR-90-2, ACCIDENT RAD MON OUTLT PERSONNEL ENT (Step 6.1[21])
- [6.2] 2-LPR-90-59, UP COMPARTMENT REAC BLDG AREA MON (Step 6.2[20])
- [6.3] 2-LPR-90-60, UP COMPARTMENT REAC BLDG AREA MON (Step 6.3[20])
- [6.4] 2-LPR-90-61, LWR COMPARTMENT INSTR ROOM AREA MON (Step 6.4[20])
- [6.5] 2-LPR-90-271, CNTMT POST ACC HIGH RAD (Step 6.5[18])
- [6.6] 2-LPR-90-272, CNTMT POST ACC HIGH RAD (Step 6.6[18])
- [6.7] 2-LPR-90-273, CNTMT POST ACC HIGH RAD (Step 6.7[18])
- [6.8] 2-LPR-90-274, CNTMT POST ACC HIGH RAD (Step 6.8[18])

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## **5.0 ACCEPTANCE CRITERIA (continued)**

[7] Monitors transmit measured radiation exposure rate data to the Plant Computer System for display in the Technical Support Center (TSC).

- [7.1] 2-RE-90-2, ACCIDENT RAD MON OUTLT PERSONNEL ENT LOOP (Step 6.1[29.3])
- [7.2] 2-RE-90-59, UP COMPARTMENT REAC BLDG AREA MON (Step 6.2[28.3])
- [7.3] 2-RE-90-60, UP COMPARTMENT REAC BLDG AREA MON (Step 6.3[28.3])
- [7.4] 2-RE-90-271, UPR INS CNTMT POST ACD AREA (Step 6.5[23])
- [7.5] 2-RE-90-272, UPR INS CNTMT POST ACD AREA (Step 6.6[23])
- [7.6] 2-RE-90-273, LWR INS CNTMT POST ACD AREA (Step 6.7[23])
- [7.7] 2-RE-90-274, LWR INS CNTMT POST ACD AREA (Step 6.8[23])

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## 6.0 PERFORMANCE

### NOTES

- 1) The format, [XXX], [###], [XXX] is used throughout this test to identify a sequence of digital keypad entries on the referenced radiation monitor required to accomplish the specified action. The XXX above represents function acronym and "##.#" or "###" represents a number keypad sequence with or without a decimal point.
- 2) Subsection 6.1 is to be performed in parallel with 2-IMI-90.021, 18 Mo. Channel Cal (Source) of Accident Rad Mon Outlet Pers Entrance Loop.
- 3) Subsections 6.2, 6.3, and 6.4 are to be performed in parallel with 2-IMI-90.020, Calibration of Low Range Area Radiation Monitors with RM-1000 Digital Ratemeters.
- 4) Subsection 6.5 is to be performed in parallel with 2-SI-90-1, 18 Mo Ch Source Cal CNTMT UPR COMPT HR Post Accident ARM Train A Loop 2-LPR-90-271.
- 5) Subsection 6.6 is to be performed in parallel with 2-SI-90-2, 18 Mo Ch Source Cal CNTMT UPR COMPT HR Post Accident ARM Train B Loop 2-LPR-90-272.
- 6) Subsection 6.7 is to be performed in parallel with 2-SI-90-3, 18 Mo Ch Source Cal CNTMT UPR COMPT HR Post Accident ARM Train A Loop 2-LPR-90-273.
- 7) Subsection 6.8 is to be performed in parallel with 2-SI-90-4, 18 Mo Ch Source Cal CNTMT UPR COMPT HR Post Accident ARM Train B Loop 2-LPR-90-274.
- 8) Subsections 6.1 through 6.8 may be performed in any order.



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## 6.1 2-LPR-90-2, ACCIDENT RAD MON OUTLT PERSONNEL ENT

### NOTES

- 1) Subsection 6.1 is to be performed in parallel with 2-IMI-90.021, 18 Mo. Channel Cal (Source) of Accident Rad Mon Outlet Pers Entrance Loop.
- 2) For consistency with 2-IMI-90.021, steps in Subsection 6.1 may be performed in any order.

[1] **ENSURE** the prerequisites listed in Section 4.0 for Subsection 6.1 have been completed. \_\_\_\_\_

[2] **ESTABLISH** communications between the MCR Panel 0-M-12 and local indicator 2-RI-90-2B, PERSONNEL AIRLOCK AREA RADIATION (El. 757', A11Y). \_\_\_\_\_

[3] **ENSURE** 2-BKR-278-M012D, TO PNL 0-M-12 RAD MON RATEMETERS & RECORDERS, at 2-BD-278-M007A PANEL 2-M-7 INSTRUMENT POWER A RACK, is in the ON position. \_\_\_\_\_

CV

[4] **ENSURE** 2-BKR-242-0001B, RAD PROC & AREA MON DIST PNL 2 FEEDER, at 2-BD-278-M007B PANEL 2-M-7 INSTRUMENT POWER B RACK, is in the ON position. \_\_\_\_\_

CV

### NOTE

Radiation Process and Area Monitor Power Distribution Panel 2-DPL-242-1 is located at El. 737', column A8S.

[5] **ENSURE** 2-BKR-90-2B, Breaker 4 at the Radiation Process and Area Monitor Power Distribution Panel, 2-DPL-242-1, to 2-RI-90-2B, is in the ON position. \_\_\_\_\_

CV

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6.1 **2-LPR-90-2, ACCIDENT RAD MON OUTLT PERSONNEL ENT  
(continued)**

- [6] **VERIFY** 2-IMI-90.020 has lowered the setpoints of 2-RM-90-2. \_\_\_\_\_
- [7] **VERIFY** the ratemeter indications on 2-RM-90-2 (MCR Panel 0-M-12) are as follows: **(Acc Crit)**
- A. Green OPERATE light is ON. \_\_\_\_\_
- B. Yellow ALERT (1) light is OFF. \_\_\_\_\_
- C. Red HIGH (2) light is OFF. \_\_\_\_\_
- [8] **VERIFY** the indications at 2-RI-90-2B (El. 757', A11Y) are as follows: **(Acc Crit)**
- A. Green POWER ON light is ON. \_\_\_\_\_
- B. Red HIGH ALARM light is OFF. \_\_\_\_\_
- [9] **VERIFY** the following:
- A. 0-XA-55-12D/193-E, 2-RR-90-1 AREA MONITORS INSTR MALF, is NOT in ALARM. **(Acc Crit)** \_\_\_\_\_
- B. Unit 2 Event Display Monitor indicates 193-E PERSONNEL AIR LOCK AREA MON INSTR MALF (2-RM-90-2) is NORMAL (Blue). **(Acc Crit)** \_\_\_\_\_

**CAUTION**

100 Vdc is present when the front panel of the RM-1000 ratemeter is open. Do not touch the exposed circuitry on the display.

- [10] **LOOSEN** the left side thumb screws on the front panel of 2-RM-90-2, **AND**
- OPEN** the hinged door. \_\_\_\_\_
- [11] **SET** the OPERATE/CALIBRATE switch on the Output card in 2-RM-90-2 to the CAL (down) position, **AND**
- VERIFY** the green OPERATE light is OFF. **(Acc Crit)** \_\_\_\_\_

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**6.1 2-LPR-90-2, ACCIDENT RAD MON OUTLT PERSONNEL ENT**  
**(continued)**

[12] **CLOSE** the hinged door on the front of 2-RM-90-2. \_\_\_\_\_

[13] **PRESS** the [CLR] button on the front panel of 2-RM-90-2,  
**AND**

**VERIFY** the green OPERATE light remains OFF. **(Acc Crit)** \_\_\_\_\_

[14] **VERIFY** the following:

A. 0-XA-55-12D/193-E, 2-RR-90-1 AREA MONITORS  
INSTR MALF, ALARMS. **(Acc Crit)** \_\_\_\_\_

B. Unit 2 Event Display Monitor indicates 193-E  
PERSONNEL AIR LOCK AREA MON INSTR MALF  
(2-RM-90-2) is in ALARM (Red). **(Acc Crit)** \_\_\_\_\_

[15] **OPEN** the hinged door on the front of 2-RM-90-2. \_\_\_\_\_

[16] **SET** the OPERATE/CALIBRATE switch on the Output card in  
2-RM-90-2 to the OPERATE (up) position. \_\_\_\_\_

[17] **CLOSE** the hinged door on the front panel of 2-RM-90-2, **AND**  
**TIGHTEN** the left side thumb screws. \_\_\_\_\_

[18] **PRESS** the [CLR] button on the front panel of 2-RM-90-2,  
**AND**

**VERIFY** the green OPERATE is ON. **(Acc Crit)** \_\_\_\_\_

[19] **VERIFY** the following:

A. 0-XA-55-12D/193-E, 2-RR-90-1 AREA MONITORS  
INSTR MALF, CLEARS. **(Acc Crit)** \_\_\_\_\_

B. Unit 2 Event Display Monitor indicates 193-E  
PERSONNEL AIR LOCK AREA MON INSTR MALF  
(2-RM-90-2) is in NORMAL (Blue). **(Acc Crit)** \_\_\_\_\_

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**6.1 2-LPR-90-2, ACCIDENT RAD MON OUTLT PERSONNEL ENT  
(continued)**

[20] **REMOVE** fuse F1 from 2-PX-90-2 ACD RAD MON OUTLET  
PERSONNEL ENT PWR SPLY located inside MCR Panel  
0-M-12.

\_\_\_\_\_  
\_\_\_\_\_  
CV

[21] **VERIFY** the following: (Acc Crit)

A. 0-XA-55-12D/193-B, 2-RR-90-1 AREA RAD HI, ALARMS.  
(Acc Crit)

B. Unit 2 Event Display Monitor indicates 193-B  
PERSONNEL AIR LOCK AREA RAD HI (2-RM-90-2) is in  
ALARM (Red). (Acc Crit)

C. 0-XA-55-12D/193-E, 2-RR-90-1 AREA MONITORS  
INSTR MALF, ALARMS. (Acc Crit)

D. Unit 2 Event Display Monitor indicates 193-E  
PERSONNEL AIR LOCK AREA MON INSTR MALF  
(2-RM-90-2) is in ALARM (Red). (Acc Crit)

[22] **INSTALL** fuse F1 in 2-PX-90-2 ACD RAD MON OUTLET  
PERSONNEL ENT PWR SPLY located inside MCR Panel  
0-M-12.

\_\_\_\_\_  
\_\_\_\_\_  
CV

[23] **PRESS** the [CLR] button on the front panel of 2-RM-90-2,  
**AND**

**VERIFY** the green OPERATE is ON. (Acc Crit)

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**6.1 2-LPR-90-2, ACCIDENT RAD MON OUTLT PERSONNEL ENT  
(continued)**

[24] **VERIFY** the following:

- A. 0-XA-55-12D/193-B, 2-RR-90-1 AREA RAD HI, CLEARS.  
(Acc Crit) \_\_\_\_\_
- B. Unit 2 Event Display Monitor indicates 193-B  
PERSONNEL AIR LOCK AREA RAD HI (2-RM-90-2) is in  
NORMAL (Blue). (Acc Crit) \_\_\_\_\_
- C. 0-XA-55-12D/193-E, 2-RR-90-1 AREA MONITORS  
INSTR MALF, CLEARS. (Acc Crit) \_\_\_\_\_
- D. Unit 2 Event Display Monitor indicates 193-E  
PERSONNEL AIR LOCK AREA MON INSTR MALF  
(2-RM-90-2) is in NORMAL (Blue). (Acc Crit) \_\_\_\_\_

[25] **RECORD** the following ambient dose rate indications:

Device	Indication	Initials/date
2-RM-90-2 PERSONNEL AIRLOCK AREA RADIATION (MCR Panel 0-M-12)	R/HR	_____
2-RR-90-1P003 AREA RADIATION MONITORS (MCR Panel 0-M-12)	R/HR	_____
2-RI-90-2B ACCIDENT RAD MON OUTLET PERSONNEL ENT (757- A11X)	R/HR	_____
R9015A ICS Point for 2-RE-90-2	MR/HR	_____

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**6.1 2-LPR-90-2, ACCIDENT RAD MON OUTLT PERSONNEL ENT  
(continued)**

**ALARA**

The radioactive source hung by 2-IMI-90.021, 18 Mo. Channel Cal (Source) of Accident Rad Mon Outlet Pers Entrance Loop, has a high dose potential. Actions to reduce dose must be taken during performance of steps 6.1[26] through 6.1[27.3].

**NOTE**

Steps 6.1[26] through 6.1[27.3] are to be performed after 2-IMI-90.021, 18 Mo. Channel Cal (Source) of Accident Rad Mon Outlet Pers Entrance Loop, has hung the calibration source.

[26] **RECORD** the following source response indications:

Device	Indication	Initials/date
2-RM-90-2 PERSONNEL AIRLOCK AREA RADIATION (MCR Panel 0-M-12)	R/HR	_____
2-RR-90-1P003 AREA RADIATION MONITORS (MCR Panel 0-M-12)	R/HR	_____
2-RI-90-2B ACCIDENT RAD MON OUTLET PERSONNEL ENT (El. 757', A11Y)	R/HR	_____
R9015A ICS Point for 2-RE-90-2	MR/HR	_____

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**6.1 2-LPR-90-2, ACCIDENT RAD MON OUTLT PERSONNEL ENT**  
**(continued)**

**[27] PERFORM** the following radiation response verifications:

**[27.1] VERIFY** the following local and main control room alarms actuated:

- A. 2-RI-90-2B red HIGH ALARM light is ON. **(Acc Crit)** \_\_\_\_\_
- B. 2-RI-90-2B audible alarm is ON. **(Acc Crit)** \_\_\_\_\_
- C. 2-RM-90-2 yellow ALERT (1) light is ON. **(Acc Crit)** \_\_\_\_\_
- D. 2-RM-90-2 red HIGH (2) light is ON. **(Acc Crit)** \_\_\_\_\_
- E. 0-XA-55-12D/193-B, 2-RR-90-1 AREA RAD HI, ALARMS. **(Acc Crit)** \_\_\_\_\_
- F. Unit 2 Event Display Monitor indicates 193-B PERSONNEL AIR LOCK AREA RAD HI (2-RM-90-2) is in ALARM (Red). **(Acc Crit)** \_\_\_\_\_

**[27.2] PRESS** the [CLR] button on 2-RM-90-2, **AND**

**VERIFY** the following: **(Acc Crit)**

- A. 2-RI-90-2B red HIGH ALARM light is ON. **(Acc Crit)** \_\_\_\_\_
- B. 2-RI-90-2B audible alarm is ON. **(Acc Crit)** \_\_\_\_\_
- C. 2-RM-90-2 yellow ALERT (1) light is ON. **(Acc Crit)** \_\_\_\_\_
- D. 2-RM-90-2 red HIGH (2) light is ON. **(Acc Crit)** \_\_\_\_\_
- E. 0-XA-55-12D/193-B, 2-RR-90-1 AREA RAD HI, is in ALARM. **(Acc Crit)** \_\_\_\_\_
- F. Unit 2 Event Display Monitor indicates 193-B PERSONNEL AIR LOCK AREA RAD HI (2-RM-90-2) is in ALARM (Red). **(Acc Crit)** \_\_\_\_\_

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**6.1 2-LPR-90-2, ACCIDENT RAD MON OUTLT PERSONNEL ENT  
(continued)**

[27.3] **PRESS** the alarm acknowledge button on 2-RI-90-2B,  
**AND**

**VERIFY** the audible alarm is OFF. (**Acc Crit**) \_\_\_\_\_

**NOTE**

The remainder of Subsection 6.1 is to be performed after 2-IMI-90.021, 18 Mo. Channel Cal (Source) of Accident Rad Mon Outlet Pers Entrance Loop, has removed the calibration source from 2-RE-90-2.

[28] **PERFORM** the following radiation response verifications:

[28.1] **RECORD** the following ambient dose rate indications,  
**AND**

**VERIFY** ambient dose rates are similar to those  
recorded in step 6.1[25]. \_\_\_\_\_

Device	Indication	Initials/date
2-RM-90-2 PERSONNEL AIRLOCK AREA RADIATION (MCR Panel 0-M-12)	R/HR	_____
2-RR-90-1P003 AREA RADIATION MONITORS (MCR Panel 0-M-12)	R/HR	_____
2-RI-90-2B ACCIDENT RAD MON OUTLET PERSONNEL ENT (El. 757', A11Y)	R/HR	_____
R9015A ICS Point for 2-RE-90-2	MR/HR	_____



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**6.1 2-LPR-90-2, ACCIDENT RAD MON OUTLT PERSONNEL ENT**  
**(continued)**

[28.2] **VERIFY** the local and main control room alarms and annunciators actuate as follows:

- A. 2-RI-90-2B red HIGH ALARM light is ON. **(Acc Crit)** \_\_\_\_\_
- B. 2-RM-90-2 yellow ALERT (1) light is ON. **(Acc Crit)** \_\_\_\_\_
- C. 2-RM-90-2 red HIGH (2) light is ON. **(Acc Crit)** \_\_\_\_\_
- D. 0-XA-55-12D/193-B, 2-RR-90-1 AREA RAD HI, ALARMS. **(Acc Crit)** \_\_\_\_\_
- E. Unit 2 Event Display Monitor indicates 193-B PERSONNEL AIR LOCK AREA RAD HI (2-RM-90-2) is in ALARM (Red). **(Acc Crit)** \_\_\_\_\_

[28.3] **PRESS** the [CLR] button on 2-RM-90-2, **AND**

**VERIFY** the following: **(Acc Crit)**

- A. 2-RI-90-2B red HIGH ALARM light is OFF. **(Acc Crit)** \_\_\_\_\_
- B. 2-RM-90-2 yellow ALERT (1) light is OFF. **(Acc Crit)** \_\_\_\_\_
- C. 2-RM-90-2 red HIGH (2) light is OFF. **(Acc Crit)** \_\_\_\_\_
- D. 0-XA-55-12D/193-B, 2-RR-90-1 AREA RAD HI, CLEARS. **(Acc Crit)** \_\_\_\_\_
- E. Unit 2 Event Display Monitor indicates 193-B PERSONNEL AIR LOCK AREA RAD HI (2-RM-90-2) is in NORMAL (Blue). **(Acc Crit)** \_\_\_\_\_

[28.4] **COMPARE** the source response recorded in step 6.1[26] to the ambient reading recorded in step 6.1[25] for each device, **AND**

**VERIFY** each device exhibited an increased deflection above background once exposed to the calibration source. \_\_\_\_\_

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6.1 2-LPR-90-2, ACCIDENT RAD MON OUTLT PERSONNEL ENT  
(continued)

**NOTE**

When the RM-1000 is in the OPERATE mode the checksource function will clear after one minute so recording of response values needs to be completed within that time period or the sequence will have to be repeated.

[29] **PERFORM** the following Check Source response verifications.

[29.1] **PRESS** the [FUN], [2], [ENT] buttons on 2-RM-90-2 PERSONNEL AIRLOCK AREA RADIATION (MCR Panel 0-M-12) to actuate the CHKSRC function.

**NOTE**

The RM-1000 meter responds to a checksource test by displaying the ambient reading on the left side of the scale and the checksource response on the right side of the scale with the checksource response value indicated at the bottom along with the function description "CHKSRC".

[29.2] **VERFIY** the indication on 2-RM-90-2 shows a two level response with the left indication lower than the right indication. (**Acc Crit**)

[29.3] **RECORD** the following indications, **AND**

**VERIFY** each device exhibits an increased deflection above the ambient dose rates recorded in step 6.1[28.1]. (**Acc Crit**)

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6.1 2-LPR-90-2, ACCIDENT RAD MON OUTLT PERSONNEL ENT  
(continued)

Device	Indication	Initials/date
2-RM-90-2 PERSONNEL AIRLOCK AREA RADIATION (MCR Panel 0-M-12)	R/HR	_____
2-RR-90-1P003 AREA RADIATION MONITORS (MCR Panel 0-M-12)	R/HR	_____
2-RI-90-2B ACCIDENT RAD MON OUTLET PERSONNEL ENT (EI. 757', A11Y)	R/HR	_____
R9015A ICS Point for 2-RE-90-2	MR/HR	_____

[29.4] **VERIFY** the main control room alarms as follows:  
(Acc Crit)

A. 2-RM-90-2 yellow ALERT (1) light is OFF. \_\_\_\_\_

B. 2-RM-90-2 red HIGH (2) light is OFF. \_\_\_\_\_

[29.5] **WHEN** at least one minute has elapsed from the time  
the CHKSRC function actuated, **THEN**

**VERIFY** the following devices indicate dose rates similar  
to those recorded in step 6.1[28.1].

A. 2-RM-90-2 PERSONNEL AIRLOCK AREA  
RADIATION (MCR Panel 0-M-12). \_\_\_\_\_

B. 2-RR-90-1P003 AREA RADIATION MONITORS  
(MCR Panel 0-M-12). \_\_\_\_\_

C. 2-RI-90-2B ACCIDENT RAD MON OUTLET  
PERSONNEL ENT (EI. 757', A11Y). \_\_\_\_\_

D. R9015A ICS Point for 2-RE-90-2. \_\_\_\_\_

<b>WBN</b> <b>Unit 2</b>	<b>RADIATION MONITORS - AREA DOSE</b> <b>RATE</b>	<b>2-PTI-090-01</b> <b>Rev. 0000</b> <b>Page 43 of 117</b>
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**6.1 2-LPR-90-2, ACCIDENT RAD MON OUTLT PERSONNEL ENT**  
**(continued)**

[30] **WHEN** the Loss of Counts Setup portion of 2-IMI-90.021 has been completed,

**THEN,**

**VERIFY** the following (actions should occur within approximately two minutes after 2-IMI-90.021 has set the Discriminator Voltage to 10Vdc): **(Acc Crit)**

- A. The green OPERATE light is OFF (On the front panel of 2-RM-90-2). **(Acc Crit)** \_\_\_\_\_
- B. 0-XA-55-12D/193-E, 2-RR-90-1 AREA MONITORS INSTR MALF, ALARMS. **(Acc Crit)** \_\_\_\_\_
- C. Unit 2 Event Display Monitor indicates 193-E PERSONNEL AIR LOCK AREA MON INSTR MALF (2-RM-90-2) is in ALARM (Red). **(Acc Crit)** \_\_\_\_\_

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## 6.2 2-LPR-90-59, UP COMPARTMENT REAC BLDG AREA MON

### NOTES

- 1) Subsection 6.2 is to be performed in parallel with 2-IMI-90.020, Calibration of Low Range Area Radiation Monitors with RM-1000 Digital Ratemeters
- 2) For consistency with 2-IMI-90.020, steps in Subsection 6.2 may be performed in any order.

[1] **ENSURE** the prerequisites listed in Section 4.0 for Subsection 6.2 have been completed.

[2] **ESTABLISH** communications between the MCR Panel 0-M-12 and local indicator 2-RI-90-59B, UP COMPARTMENT REAC BLDG-AREA MON (El. 756, Az. 310°).

[3] **ENSURE** 2-BKR-278-M012D, TO PNL 0-M-12 RAD MON RATEMETERS & RECORDERS, at 2-BD-278-M007A PANEL 2-M-7 INSTRUMENT POWER A RACK, is in the ON position.

CV

[4] **ENSURE** 2-BKR-242-0001B, RAD PROC & AREA MON DIST PNL 2 FEEDER, at 2-BD-278-M007B PANEL 2-M-7 INSTRUMENT POWER B RACK, is in the ON position.

CV

### NOTE

Radiation Process and Area Monitor Power Distribution Panel 2-DPL-242-1 is located at El. 737', column A8S.

[5] **ENSURE** 2-BKR-90-59B, Breaker 11 at the Radiation Process and Area Monitor Power Distribution Panel, 2-DPL-242-1, to 2-RI-90-59B, is in the ON position.

CV

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**6.2 2-LPR-90-59, UP COMPARTMENT REAC BLDG AREA MON  
(continued)**

[6] **VERIFY** the ratemeter indications on 2-RM-90-59 (MCR Panel 0-M-12) are as follows: **(Acc Crit)**

A. Green OPERATE light is ON. \_\_\_\_\_

B. Yellow ALERT (1) light is OFF. \_\_\_\_\_

C. Red HIGH (2) light is OFF. \_\_\_\_\_

[7] **VERIFY** the indications at 2-RI-90-59B are as follows:  
**(Acc Crit)**

A. Green POWER ON light is ON. \_\_\_\_\_

B. Red HIGH ALARM light is OFF. \_\_\_\_\_

[8] **VERIFY** the following:

A. 0-XA-55-12D/193-E, 2-RR-90-1 AREA MONITORS INSTR MALF, is NOT in ALARM. **(Acc Crit)** \_\_\_\_\_

B. Unit 2 Event Display Monitor indicates 193-E ACCESS HATCH AREA MON INSTR MALF (2-RM-90-59) is in NORMAL (Blue). **(Acc Crit)** \_\_\_\_\_

**CAUTION**

100 Vdc is present when the front panel of the RM-1000 ratemeter is open. Do not touch the exposed circuitry on the display.

[9] **LOOSEN** the left side thumb screws on the front panel of 2-RM-90-59, **AND**

**OPEN** the hinged door. \_\_\_\_\_

[10] **SET** the OPERATE/CALIBRATE switch on the Output card in 2-RM-90-59 to the CAL (down) position, **AND**

**VERIFY** the green OPERATE light is OFF. **(Acc Crit)** \_\_\_\_\_

[11] **CLOSE** the hinged door on the front of 2-RM-90-59. \_\_\_\_\_

<b>WBN</b> <b>Unit 2</b>	<b>RADIATION MONITORS - AREA DOSE</b> <b>RATE</b>	<b>2-PTI-090-01</b> <b>Rev. 0000</b> <b>Page 46 of 117</b>
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**6.2 2-LPR-90-59, UP COMPARTMENT REAC BLDG AREA MON**  
**(continued)**

[12] **PRESS** the [CLR] button on the front panel of 2-RM-90-59,  
**AND**

**VERIFY** the green OPERATE light remains OFF. **(Acc Crit)**

[13] **VERIFY** the following:

A. 0-XA-55-12D/193-E, 2-RR-90-1 AREA MONITORS  
INSTR MALF, ALARMS. **(Acc Crit)**

B. Unit 2 Event Display Monitor indicates 193-E ACCESS  
HATCH AREA MON INSTR MALF (2-RM-90-59) is in  
ALARM (Red). **(Acc Crit)**

[14] **OPEN** the hinged door on the front of 2-RM-90-59.

[15] **SET** the OPERATE/CALIBRATE switch on the Output card in  
2-RM-90-59 to the OPERATE (up) position.

[16] **CLOSE** the hinged door on the front panel of 2-RM-90-59,  
**AND**

**TIGHTEN** the left side thumb screws.

[17] **PRESS** the [CLR] button on the front panel of 2-RM-90-59,  
**AND**

**VERIFY** the green OPERATE is ON. **(Acc Crit)**

[18] **VERIFY** the following:

A. 0-XA-55-12D/193-E, 2-RR-90-1 AREA MONITORS  
INSTR MALF, CLEARS. **(Acc Crit)**

B. Unit 2 Event Display Monitor indicates 193-E ACCESS  
HATCH AREA MON INSTR MALF (2-RM-90-59) is in  
NORMAL (Blue). **(Acc Crit)**

[19] **REMOVE** fuse F1 from 2-PX-90-59 UP COMPARTMENT  
REAC BLDG-AREA MON PWR SPLY located inside MCR  
Panel 0-M-12.

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**6.2 2-LPR-90-59, UP COMPARTMENT REAC BLDG AREA MON  
(continued)**

[20] **VERIFY** the following: (Acc Crit)

A. 0-XA-55-12D/193-B, 2-RR-90-1 AREA RAD HI, ALARMS.  
(Acc Crit) \_\_\_\_\_

B. Unit 2 Event Display Monitor indicates 193-B ACCESS  
HATCH AREA RAD HI (2-RM-90-59) is in ALARM (Red).  
(Acc Crit) \_\_\_\_\_

C. 0-XA-55-12D/193-E, 2-RR-90-1 AREA MONITORS  
INSTR MALF, ALARMS. (Acc Crit) \_\_\_\_\_

D. Unit 2 Event Display Monitor indicates 193-E ACCESS  
HATCH AREA MON INSTR MALF (2-RM-90-59) is in  
ALARM (Red). (Acc Crit) \_\_\_\_\_

[21] **INSTALL** fuse F1 in 2-PX-90-59 UP COMPARTMENT REAC  
BLDG-AREA MON PWR SPLY located inside MCR Panel  
0-M-12. \_\_\_\_\_

CV

[22] **PRESS** the [CLR] button on the front panel of 2-RM-90-59,  
**AND**

**VERIFY** the green OPERATE is ON. (Acc Crit) \_\_\_\_\_

[23] **VERIFY** the following:

A. 0-XA-55-12D/193-B, 2-RR-90-1 AREA RAD HI, CLEARS.  
(Acc Crit) \_\_\_\_\_

B. Unit 2 Event Display Monitor indicates 193-B ACCESS  
HATCH AREA RAD HI (2-RM-90-59) is in NORMAL  
(Blue). (Acc Crit) \_\_\_\_\_

C. 0-XA-55-12D/193-E, 2-RR-90-1 AREA MONITORS  
INSTR MALF, CLEARS. (Acc Crit) \_\_\_\_\_

D. Unit 2 Event Display Monitor indicates 193-E ACCESS  
HATCH AREA MON INSTR MALF (2-RE-90-59) is in  
NORMAL (Blue). (Acc Crit) \_\_\_\_\_



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**6.2 2-LPR-90-59, UP COMPARTMENT REAC BLDG AREA MON  
(continued)**

[24] **RECORD** the following ambient dose rate indications:

Device	Indication	Initials/date
2-RM-90-59 UP COMPARTMENT REAC BLDG-AREA MON (MCR Panel 0-M-12)	R/HR	_____
2-RR-90-1P001 AREA RADIATION MONITORS (MCR Panel 0-M-12)	R/HR	_____
2-RI-90-59B UP COMPARTMENT REAC BLDG-AREA MON (El. 756', Az. 310°)	R/HR	_____
R9016A ICS Point for 2-RE-90-59	MR/HR	_____

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**6.2 2-LPR-90-59, UP COMPARTMENT REAC BLDG AREA MON  
(continued)**

**ALARA**

The radioactive source hung by 2-IMI-90.020, Calibration of Low Range Area Radiation Monitors with RM-1000 Digital Ratemeters, has a high dose potential. Actions to reduce dose must be taken during performance of steps 6.2[25] through 6.2[26.3].

**NOTE**

Steps 6.2[25] through 6.2[26.3] are to be performed after 2-IMI-90.020, Calibration of Low Range Area Radiation Monitors with RM-1000 Digital Ratemeters, has hung the calibration source in 2-RE-90-59.

[25] **RECORD** the following source response indications:

Device	Indication	Initials/date
2-RM-90-59 UP COMPARTMENT REAC BLDG-AREA MON (MCR Panel 0-M-12)	R/HR	_____
2-RR-90-1P001 AREA RADIATION MONITORS (MCR Panel 0-M-12)	R/HR	_____
2-RI-90-59B UP COMPARTMENT REAC BLDG-AREA MON (El. 756', Az. 310°)	R/HR	_____
R9016A ICS Point for 2-RE-90-59	MR/HR	_____

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**6.2 2-LPR-90-59, UP COMPARTMENT REAC BLDG AREA MON  
(continued)**

**[26] PERFORM** the following radiation response verifications:

**[26.1] VERIFY** the following local and main control room alarms actuated.

- A. 2-RI-90-59B red HIGH ALARM light is ON.  
(Acc Crit) \_\_\_\_\_
- B. 2-RI-90-59B audible alarm is ON. (Acc Crit) \_\_\_\_\_
- C. 2-RM-90-59 yellow ALERT (1) light is ON.  
(Acc Crit) \_\_\_\_\_
- D. 2-RM-90-59 red HIGH (2) light is ON. (Acc Crit) \_\_\_\_\_
- E. 0-XA-55-12D/193-B, 2-RR-90-1 AREA RAD HI,  
ALARMS. (Acc Crit) \_\_\_\_\_
- F. Unit 2 Event Display Monitor indicates 193-B  
ACCESS HATCH AREA RAD HI (2-RM-90-59) is in  
ALARM (Red). (Acc Crit) \_\_\_\_\_

**[26.2] PRESS** the [CLR] button on 2-RM-90-59, **AND**

**VERIFY** the following: (Acc Crit)

- A. 2-RI-90-59B red HIGH ALARM light is ON.  
(Acc Crit) \_\_\_\_\_
- B. 2-RI-90-59B audible alarm is ON. (Acc Crit) \_\_\_\_\_
- C. 2-RM-90-59 yellow ALERT (1) light is ON.  
(Acc Crit) \_\_\_\_\_
- D. 2-RM-90-59 red HIGH (2) light is ON. (Acc Crit) \_\_\_\_\_
- E. 0-XA-55-12D/193-B, 2-RR-90-1 AREA RAD HI, is in  
ALARM. (Acc Crit) \_\_\_\_\_
- F. Unit 2 Event Display Monitor indicates 193-B  
ACCESS HATCH AREA RAD HI (2-RM-90-59) is in  
ALARM (Red). (Acc Crit) \_\_\_\_\_

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**6.2 2-LPR-90-59, UP COMPARTMENT REAC BLDG AREA MON  
(continued)**

[26.3] **PRESS** the alarm acknowledge button on 2-RI-90-59B,  
**AND**

**VERIFY** the audible alarm is OFF. (**Acc Crit**) \_\_\_\_\_

**NOTE**

The remainder of subsection 6.2 is to be performed after 2-IMI-90.020, Calibration of Low Range Area Radiation Monitors with RM-1000 Digital Ratemeters, has removed the calibration source from 2-RE-90-59.

[27] **PERFORM** the following radiation response verifications:

[27.1] **RECORD** the following ambient dose rate indications,  
**AND**

**VERIFY** ambient dose rates are similar to those  
recorded in step 6.2[24]. \_\_\_\_\_

Device	Indication	Initials/date
2-RM-90-59 UP COMPARTMENT REAC BLDG-AREA MON (MCR Panel 0-M-12)	R/HR	_____
2-RR-90-1P001 AREA RADIATION MONITORS (MCR Panel 0-M-12)	R/HR	_____
2-RI-90-59B UP COMPARTMENT REAC BLDG-AREA MON (El. 756', Az. 310°)	R/HR	_____
R9016A ICS Point for 2-RE-90-59	MR/HR	_____

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**6.2 2-LPR-90-59, UP COMPARTMENT REAC BLDG AREA MON**  
**(continued)**

[27.2] **VERIFY** the local and main control room alarms and annunciators actuate as follows:

- A. 2-RI-90-59B red HIGH ALARM light is ON.  
**(Acc Crit)** \_\_\_\_\_
- B. 2-RM-90-59 yellow ALERT (1) light is ON.  
**(Acc Crit)** \_\_\_\_\_
- C. 2-RM-90-59 red HIGH (2) light is ON. **(Acc Crit)** \_\_\_\_\_
- D. 0-XA-55-12D/193-B, 2-RR-90-1 AREA RAD HI,  
ALARMS. **(Acc Crit)** \_\_\_\_\_
- E. Unit 2 Event Display Monitor indicates 193-B  
ACCESS HATCH AREA RAD HI (2-RM-90-59) is in  
ALARM (Red). **(Acc Crit)** \_\_\_\_\_

[27.3] **PRESS** the [CLR] button on 2-RM-90-59, **AND**

**VERIFY** the following: **(Acc Crit)**

- A. 2-RI-90-59B red HIGH ALARM light is OFF.  
**(Acc Crit)** \_\_\_\_\_
- B. 2-RM-90-59 yellow ALERT (1) light is OFF.  
**(Acc Crit)** \_\_\_\_\_
- C. 2-RM-90-59 red HIGH (2) light is OFF. **(Acc Crit)** \_\_\_\_\_
- D. 0-XA-55-12D/193-B, 2-RR-90-1 2 AREA RAD HI,  
CLEARS. **(Acc Crit)** \_\_\_\_\_
- E. Unit 2 Event Display Monitor indicates 193-B  
ACCESS HATCH AREA RAD HI (2-RM-90-59) is in  
NORMAL (Blue). **(Acc Crit)** \_\_\_\_\_

[27.4] **COMPARE** the source response recorded in step  
6.2[25] to the ambient reading recorded in step 6.2[24]  
for each device, **AND**

**VERIFY** each device exhibited an increased deflection  
above background once exposed to the calibration  
source. \_\_\_\_\_

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6.2 2-LPR-90-59, UP COMPARTMENT REAC BLDG AREA MON  
(continued)

**NOTE**

When the RM-1000 is in the OPERATE mode the checksource function will clear after one minute so recording of response values needs to be completed within that time period or the sequence will have to be repeated.

[28] **PERFORM** the following Check Source response verifications.

[28.1] **PRESS** the [FUN], [2], [ENT] buttons on 2-RM-90-59 UP COMPARTMENT REAC BLDG-AREA MON (MCR Panel 0-M-12) to actuate the CHKSRC function.

**NOTE**

The RM-1000 meter responds to a checksource test by displaying the ambient reading on the left side of the scale and the checksource response on the right side of the scale with the checksource response value indicated at the bottom along with the function description "CHKSRC".

[28.2] **VERFIY** the indication on 2-RM-90-59 shows a two level response with the left indication lower than the right indication. (**Acc Crit**)

[28.3] **RECORD** the following indications, **AND**

**VERIFY** each device exhibited an increased deflection above the ambient dose rates recorded in step 6.2[27.1]. (**Acc Crit**)

Device	Indication	Initials/date
2-RM-90-59 UP COMPARTMENT REAC BLDG-AREA MON (MCR Panel 0-M-12)	R/HR	_____
2-RR-90-1P001 AREA RADIATION MONITORS (MCR Panel 0-M-12)	R/HR	_____
2-RI-90-59B UP COMPARTMENT REAC BLDG-AREA MON (El. 756', Az. 310°)	R/HR	_____
R9016A ICS Point for 2-RE-90-59	MR/HR	_____

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**6.2 2-LPR-90-59, UP COMPARTMENT REAC BLDG AREA MON**  
**(continued)**

[28.4] **VERIFY** the main control room alarms as follows:  
**(Acc Crit)**

A. 2-RM-90-59 yellow ALERT (1) light is OFF. \_\_\_\_\_

B. 2-RM-90-59 red HIGH (2) light is OFF. \_\_\_\_\_

[28.5] **WHEN** at least one minute has elapsed from the time  
the CHKSRC function actuated, **THEN**

**VERIFY** the following devices indicate dose rates similar  
to those recorded in step 6.2[27.1].

A. 2-RM-90-59 UP COMPARTMENT REAC BLDG-  
AREA MON (MCR Panel 0-M-12). \_\_\_\_\_

B. 2-RR-90-1P001 AREA RADIATION MONITORS  
(MCR Panel 0-M-12). \_\_\_\_\_

C. 2-RI-90-59B UP COMPARTMENT REAC BLDG-  
AREA MON (El. 756', Az. 310°). \_\_\_\_\_

D. R9016A ICS Point for 2-RE-90-59. \_\_\_\_\_

[29] **WHEN** the Loss of Counts Setup portion of 2-IMI-90.020 has  
been completed,

**THEN,**

**VERIFY** the following (actions should occur within  
approximately two minutes after 2-IMI-90.020 has set the  
Discriminator Voltage to 10Vdc): **(Acc Crit)**

A. The green OPERATE light is OFF (On the front panel of  
2-RM-90-59). **(Acc Crit)** \_\_\_\_\_

B. 0-XA-55-12D/193-E, 2-RR-90-1 AREA MONITORS  
INSTR MALF, ALARMS. **(Acc Crit)** \_\_\_\_\_

C. Unit 2 Event Display Monitor indicates 193-E ACCESS  
HATCH AREA MON INSTR MALF (2-RM-90-59) is in  
ALARM (Red). **(Acc Crit)** \_\_\_\_\_

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### 6.3 2-LPR-90-60, UP COMPARTMENT REAC BLDG AREA MON

#### NOTES

- 1) Subsection 6.3 is to be performed in parallel with 2-IMI-90.020, Calibration of Low Range Area Radiation Monitors with RM-1000 Digital Ratemeters.
- 2) For consistency with 2-IMI-90.020, steps in Subsection 6.3 may be performed in any order.

[1] **ENSURE** the prerequisites listed in Section 4.0 for Subsection 6.3 have been completed.

[2] **ESTABLISH** communications between the MCR Panel 0-M-12 and local indicator 2-RI-90-60B, UP COMPARTMENT REAC BLDG-AREA MON (El. 756', Az. 225°).

[3] **ENSURE** 2-BKR-278-M012D, TO PNL 0-M-12 RAD MON RATEMETERS & RECORDERS, at 2-BD-278-M007A PANEL 2-M-7 INSTRUMENT POWER A RACK, is in the ON position.

CV

[4] **ENSURE** 2-BKR-242-0001B, RAD PROC & AREA MON DIST PNL 2 FEEDER, at 2-BD-278-M007B PANEL 2-M-7 INSTRUMENT POWER B RACK, is in the ON position.

CV



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6.3 2-LPR-90-60, UP COMPARTMENT REAC BLDG AREA MON  
(continued)

**NOTE**

Radiation Process and Area Monitor Power Distribution Panel 2-DPL-242-1 is located at El. 737', column A8S.

- [5] **ENSURE** 2-BKR-90-60B, Breaker 12 at the Radiation Process and Area Monitor Power Distribution Panel, 2-DPL-242-1, to 2-RI-90-60B, is in the ON position.

CV

- [6] **VERIFY** the ratemeter indications on 2-RM-90-60 (MCR Panel 0-M-12) are as follows: (**Acc Crit**)

- A. Green OPERATE light is ON.
- B. Yellow ALERT (1) light is OFF.
- C. Red HIGH (2) light is OFF.

- [7] **VERIFY** the indications at 2-RI-90-60B (El. 756', Az. 225°) are as follows: (**Acc Crit**)

- A. Green POWER ON light is ON.
- B. Red HIGH ALARM light is OFF.

- [8] **VERIFY** the following:

- A. 0-XA-55-12D/193-E, 2-RR-90-1 AREA MONITORS INSTR MALF, is NOT in ALARM. (**Acc Crit**)
- B. Unit 2 Event Display Monitor indicates 193-E PERSONNEL AIR LOCK AREA MON INSTR MALF (2-RM-90-60) is in NORMAL (Blue). (**Acc Crit**)

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**6.3 2-LPR-90-60, UP COMPARTMENT REAC BLDG AREA MON  
(continued)**

**CAUTION**

100 Vdc is present when the front panel of the RM-1000 ratemeter is open. Do not touch the exposed circuitry on the display.

- [9] **LOOSEN** the left side thumb screws on the front panel of 2-RM-90-60, **AND**

**OPEN** the hinged door. \_\_\_\_\_

- [10] **SET** the OPERATE/CALIBRATE switch on the Output card in 2-RM-90-60 to the CAL (down) position, **AND**

**VERIFY** the green OPERATE light is OFF. (**Acc Crit**) \_\_\_\_\_

- [11] **CLOSE** the hinged door on the front of 2-RM-90-60. \_\_\_\_\_

- [12] **PRESS** the [CLR] button on the front panel of 2-RM-90-60, **AND**

**VERIFY** the green OPERATE light remains OFF. (**Acc Crit**) \_\_\_\_\_

- [13] **VERIFY** the following:

A. 0-XA-55-12D/193-E, 2-RR-90-1 AREA MONITORS INSTR MALF, ALARMS. (**Acc Crit**) \_\_\_\_\_

B. Unit 2 Event Display Monitor indicates 193-E PERSONNEL AIR LOCK AREA MON INSTR MALF (2-RM-90-60) is in ALARM (Red). (**Acc Crit**) \_\_\_\_\_

- [14] **OPEN** the hinged door on the front of 2-RM-90-60. \_\_\_\_\_

- [15] **SET** the OPERATE/CALIBRATE switch on the Output card in 2-RM-90-60 to the OPERATE (up) position. \_\_\_\_\_

- [16] **CLOSE** the hinged door on the front panel of 2-RM-90-60, **AND**

**TIGHTEN** the left side thumb screws. \_\_\_\_\_

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**6.3 2-LPR-90-60, UP COMPARTMENT REAC BLDG AREA MON  
(continued)**

**[17] PRESS** the [CLR] button on the front panel of 2-RM-90-60,  
**AND**

**VERIFY** the green OPERATE is ON. **(Acc Crit)**

**[18] VERIFY** the following:

A. 0-XA-55-12D/193-E, 2-RR-90-1 AREA MONITORS  
INSTR MALF, CLEARS. **(Acc Crit)**

B. Unit 2 Event Display Monitor indicates 193-E  
PERSONNEL AIR LOCK AREA MON INSTR MALF  
(2-RM-90-60) is NORMAL (Blue). **(Acc Crit)**

**[19] REMOVE** fuse F1 from 2-PX-90-60 UP COMPARTMENT  
REAC BLDG-AREA MON PWR SPLY located inside MCR  
Panel 0-M-12.

CV

**[20] VERIFY** the following: **(Acc Crit)**

A. 0-XA-55-12D/193-B, 2-RR-90-1 AREA RAD HI, ALARMS.  
**(Acc Crit)**

B. Unit 2 Event Display Monitor indicates 193-B  
PERSONNEL AIR LOCK AREA RAD HI (2-RM-90-60) is  
in ALARM (Red). **(Acc Crit)**

C. 0-XA-55-12D/193-E, 2-RR-90-1 AREA MONITORS  
INSTR MALF, ALARMS. **(Acc Crit)**

D. Unit 2 Event Display Monitor indicates 193-E  
PERSONNEL AIR LOCK AREA MON INSTR MALF  
(2-RM-90-60) is in ALARM (Red). **(Acc Crit)**

**[21] INSTALL** fuse F1 in 2-PX-90-60 UP COMPARTMENT REAC  
BLDG-AREA MON PWR SPLY located inside MCR Panel  
0-M-12.

CV

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**6.3 2-LPR-90-60, UP COMPARTMENT REAC BLDG AREA MON  
(continued)**

[22] **PRESS** the [CLR] button on the front panel of 2-RM-90-60,  
**AND**

**VERIFY** the green OPERATE is ON. (**Acc Crit**) \_\_\_\_\_

[23] **VERIFY** the following:

A. 0-XA-55-12D/193-B, 2-RR-90-1 AREA RAD HI, CLEARS.  
(**Acc Crit**) \_\_\_\_\_

B. Unit 2 Event Display Monitor indicates 193-B  
PERSONNEL AIR LOCK AREA RAD HI (2-RM-90-60) is  
in NORMAL (Blue). (**Acc Crit**) \_\_\_\_\_

C. 0-XA-55-12D/193-E, 2-RR-90-1 AREA MONITORS  
INSTR MALF, CLEARS. (**Acc Crit**) \_\_\_\_\_

D. Unit 2 Event Display Monitor indicates 193-E  
PERSONNEL AIR LOCK AREA MON INSTR MALF  
(2-RM-90-60) is in NORMAL (Blue). (**Acc Crit**) \_\_\_\_\_

[24] **RECORD** the following ambient dose rate indications:

Device	Indication	Initials/date
2-RM-90-60 UP COMPARTMENT REAC BLDG-AREA MON (MCR Panel 0-M-12)	R/HR	_____
2-RR-90-1P002 AREA RADIATION MONITORS (MCR Panel 0-M-12)	R/HR	_____
2-RI-90-60B UP COMPARTMENT REAC BLDG-AREA MON (El. 756', Az. 225°)	R/HR	_____
R9017A ICS Point for 2-RE-90-60	MR/HR	_____

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**6.3 2-LPR-90-60, UP COMPARTMENT REAC BLDG AREA MON  
(continued)**

**ALARA**

The radioactive source hung by 2-IMI-90.020, Calibration of Low Range Area Radiation Monitors with RM-1000 Digital Ratemeters, has a high dose potential. Actions to reduce dose must be taken during performance of steps 6.3[25] through 6.3[26.2]E.

**NOTE**

Steps 6.3[25] through 6.3[26.2]E are to be performed after 2-IMI-90.020, Calibration of Low Range Area Radiation Monitors with RM-1000 Digital Ratemeters, has hung the calibration source in 2-RE-90-60.

[25] **RECORD** the following source response indications:

Device	Indication	Initials/date
2-RM-90-60 UP COMPARTMENT REAC BLDG-AREA MON (MCR Panel 0-M-12)	R/HR	_____
2-RR-90-1P002 AREA RADIATION MONITORS (MCR Panel 0-M-12)	R/HR	_____
2-RI-90-60B UP COMPARTMENT REAC BLDG-AREA MON (El. 756', Az. 225°)	R/HR	_____
R9017A ICS Point for 2-RE-90-60	MR/HR	_____

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**6.3 2-LPR-90-60, UP COMPARTMENT REAC BLDG AREA MON  
(continued)**

**[26] PERFORM** the following radiation response verifications:

**[26.1] VERIFY** the following local and main control room alarms actuated.

- A. 2-RI-90-60B red HIGH ALARM light is ON. (Acc Crit) \_\_\_\_\_
- B. 2-RI-90-60B audible alarm is ON. (Acc Crit) \_\_\_\_\_
- C. 2-RM-90-60 yellow ALERT (1) light is ON. (Acc Crit) \_\_\_\_\_
- D. 2-RM-90-60 red HIGH (2) light is ON. (Acc Crit) \_\_\_\_\_
- E. 0-XA-55-12D/193-B, 2-RR-90-1 AREA RAD HI, ALARMS. (Acc Crit) \_\_\_\_\_
- F. Unit 2 Event Display Monitor indicates 193-B PERSONNEL AIR LOCK AREA RAD HI (2-RM-90-60) is in ALARM (Red). (Acc Crit) \_\_\_\_\_

**[26.2] PRESS** the [CLR] button on 2-RM-90-60, **AND**  
**VERIFY** the following: (Acc Crit)

- A. 2-RI-90-60B red HIGH ALARM light is ON. (Acc Crit) \_\_\_\_\_
- B. 2-RI-90-60B audible alarm is ON. (Acc Crit) \_\_\_\_\_
- C. 2-RM-90-60 yellow ALERT (1) light is ON. (Acc Crit) \_\_\_\_\_
- D. 2-RM-90-60 red HIGH (2) light is ON. (Acc Crit) \_\_\_\_\_
- E. 0-XA-55-12D/193-B, 2-RR-90-1 AREA RAD HI, is in ALARM. (Acc Crit) \_\_\_\_\_
- F. Unit 2 Event Display Monitor indicates 193-B PERSONNEL AIR LOCK AREA RAD HI (2-RM-90-60) is in ALARM (Red). (Acc Crit) \_\_\_\_\_

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**6.3 2-LPR-90-60, UP COMPARTMENT REAC BLDG AREA MON  
(continued)**

[26.3] **PRESS** the alarm acknowledge button on 2-RI-90-60B,  
**AND**

**VERIFY** the audible alarm is OFF. (**Acc Crit**) \_\_\_\_\_

**NOTE**

The remainder of subsection 6.3 is to be performed after 2-IMI-90.020, Calibration of Low Range Area Radiation Monitors with RM-1000 Digital Ratemeters, has removed the source from 2-RE-90-60.

[27] **PERFORM** the following radiation response verifications

[27.1] **RECORD** the following ambient dose rate indications,  
**AND**

**VERIFY** ambient dose rates are similar to those  
recorded in step 6.3[24]. \_\_\_\_\_

Device	Indication	Initials/date
2-RM-90-60 UP COMPARTMENT REAC BLDG-AREA MON (MCR Panel 0-M-12)	R/HR	_____
2-RR-90-1P002 AREA RADIATION MONITORS (MCR Panel 0-M-12)	R/HR	_____
2-RI-90-60B UP COMPARTMENT REAC BLDG-AREA MON (El. 756', Az. 225°)	R/HR	_____
R9017A ICS Point for 2-RE-90-60	MR/HR	_____

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**6.3 2-LPR-90-60, UP COMPARTMENT REAC BLDG AREA MON  
(continued)**

[27.2] **VERIFY** the local and main control room alarms and annunciators actuate as follows:

- A. 2-RI-90-60B red HIGH ALARM light is ON.  
(Acc Crit) \_\_\_\_\_
- B. 2-RM-90-60 yellow ALERT (1) light is ON.  
(Acc Crit) \_\_\_\_\_
- C. 2-RM-90-60 red HIGH (2) light is ON. (Acc Crit) \_\_\_\_\_
- D. 0-XA-55-12D/193-B, 2-RR-90-1 AREA RAD HI,  
ALARMS. (Acc Crit) \_\_\_\_\_
- E. Unit 2 Event Display Monitor indicates 193-B  
PERSONNEL AIR LOCK AREA RAD HI  
(2-RM-90-60) is in ALARM (Red). (Acc Crit) \_\_\_\_\_

[27.3] **PRESS** the [CLR] button on 2-RM-90-60, **AND**

**VERIFY** the following: (Acc Crit)

- A. 2-RI-90-60B red HIGH ALARM light is OFF.  
(Acc Crit) \_\_\_\_\_
- B. 2-RM-90-60 yellow ALERT (1) light is OFF.  
(Acc Crit) \_\_\_\_\_
- C. 2-RM-90-60 red HIGH (2) light is OFF. (Acc Crit) \_\_\_\_\_
- D. 0-XA-55-12D/193-B, 2-RR-90-1 AREA RAD HI,  
CLEARS. (Acc Crit) \_\_\_\_\_
- E. Unit 2 Event Display Monitor indicates 193-B  
PERSONNEL AIR LOCK AREA RAD HI  
(2-RM-90-60) is in NORMAL (Blue). (Acc Crit) \_\_\_\_\_

[27.4] **COMPARE** the source response recorded in step 6.3[25] to the ambient reading recorded in step 6.3[24] for each device, **AND**

**VERIFY** each device exhibited an increased deflection above background once exposed to the calibration source. \_\_\_\_\_



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**6.3 2-LPR-90-60, UP COMPARTMENT REAC BLDG AREA MON  
(continued)**

**NOTE**

When the RM-1000 is in the OPERATE mode the checksource function will clear after one minute so recording of response values needs to be completed within that time period or the sequence will have to be repeated.

[28] **PERFORM** the following Check Source response verifications.

[28.1] **PRESS** the [FUN], [2], [ENT] buttons on 2-RM-90-60 UP COMPARTMENT REAC BLDG-AREA MON (MCR Panel 0-M-12) to actuate the CHKSRC function. \_\_\_\_\_

**NOTE**

The RM-1000 meter responds to a checksource test by displaying the ambient reading on the left side of the scale and the checksource response on the right side of the scale with the checksource response value indicated at the bottom along with the function description "CHKSRC".

[28.2] **VERFIY** the indication on 2-RM-90-60 shows a two level response with the left indication lower than the right indication. (**Acc Crit**) \_\_\_\_\_

[28.3] **RECORD** the following indications, **AND**

**VERIFY** each device exhibited an increased deflection above the ambient dose rates recorded in step 6.3[27.1]. (**Acc Crit**) \_\_\_\_\_

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6.3 2-LPR-90-60, UP COMPARTMENT REAC BLDG AREA MON  
(continued)

Device	Indication	Initials/date
2-RM-90-60 UP COMPARTMENT REAC BLDG-AREA MON (MCR Panel 0-M-12)	R/HR	_____
2-RR-90-1P002 AREA RADIATION MONITORS (MCR Panel 0-M-12)	R/HR	_____
2-RI-90-60B UP COMPARTMENT REAC BLDG-AREA MON (El. 756', Az. 225°)	R/HR	_____
R9017A ICS Point for 2-RE-90-60	MR/HR	_____

[28.4] **VERIFY** the main control room alarms as follows:  
(Acc Crit)

A. 2-RM-90-60 yellow ALERT (1) light is OFF. \_\_\_\_\_

B. 2-RM-90-60 red HIGH (2) light is OFF. \_\_\_\_\_

[28.5] **WHEN** at least one minute has elapsed from the time  
the CHKSRC function actuated, **THEN**

**VERIFY** the following devices indicate dose rates similar  
to those recorded in step 6.3[27.1].

A. 2-RM-90-60 UP COMPARTMENT REAC BLDG-  
AREA MON (MCR Panel 0-M-12). \_\_\_\_\_

B. 2-RR-90-1P002 AREA RADIATION MONITORS  
(MCR Panel 0-M-12). \_\_\_\_\_

C. 2-RI-90-60B UP COMPARTMENT REAC BLDG-  
AREA MON (El. 756', Az. 225°). \_\_\_\_\_

D. R9017A ICS Point for 2-RE-90-60. \_\_\_\_\_

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**6.3 2-LPR-90-60, UP COMPARTMENT REAC BLDG AREA MON**  
**(continued)**

[29] **WHEN** the Loss of Counts Setup portion of 2-IMI-90.020 has been completed,

**THEN,**

**VERIFY** the following (actions should occur within approximately two minutes after 2-IMI-90.020 has set the Discriminator Voltage to 10Vdc): **(Acc Crit)**

- A. The green OPERATE light is OFF (On the front panel of 2-RM-90-60). **(Acc Crit)** \_\_\_\_\_
- B. 0-XA-55-12D/193-E, 2-RR-90-1 AREA MONITORS INSTR MALF, ALARMS. **(Acc Crit)** \_\_\_\_\_
- C. Unit 2 Event Display Monitor indicates 193-E PERSONNEL AIR LOCK AREA MON INSTR MALF (2-RM-90-60) is in ALARM (Red). **(Acc Crit)** \_\_\_\_\_

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#### 6.4 2-LPR-90-61, LWR COMPARTMENT INSTR ROOM AREA MON

##### NOTES

- 1) Subsection 6.4 is to be performed in parallel with 2-IMI-90.020, Calibration of Low Range Area Radiation Monitors with RM-1000 Digital Ratemeters.
- 2) For consistency with 2-IMI-90.020, steps in Subsection 6.4 may be performed in any order.

[1] **ENSURE** the prerequisites listed in Section 4.0 for Subsection 6.4 have been completed.

[2] **ESTABLISH** communications between the MCR Panel 0-M-12 and local indicator 2-RI-90-61B, LWR COMPARTMENT REAC BLDG-AREA MON (El. 736', Az. 82°).

[3] **ENSURE** 2-BKR-278-M012D, TO PNL 0-M-12 RAD MON RATEMETERS & RECORDERS, at 2-BD-278-M007A PANEL 2-M-7 INSTRUMENT POWER A RACK, is in the ON position.

CV

[4] **ENSURE** 2-BKR-242-0001B, RAD PROC & AREA MON DIST PNL 2 FEEDER, at 2-BD-278-M007B PANEL 2-M-7 INSTRUMENT POWER B RACK, is in the ON position.

CV

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6.4 2-LPR-90-61, LWR COMPARTMENT INSTR ROOM AREA MON  
(continued)

**NOTE**

Radiation Process and Area Monitor Power Distribution Panel 2-DPL-242-1 is located at El. 737', column A8S.

- [5] **ENSURE** 2-BKR-90-61B, Breaker 13 at the Radiation Process and Area Monitor Power Distribution Panel, 2-DPL-242-1, to 2-RI-90-61B, is in the ON position.

\_\_\_\_\_  
CV

- [6] **VERIFY** the ratemeter indications on 2-RM-90-61 (MCR Panel 0-M-12) are as follows: (**Acc Crit**)

- A. Green OPERATE light is ON.  
B. Yellow ALERT (1) light is OFF.  
C. Red HIGH (2) light is OFF.

- [7] **VERIFY** the indications at 2-RI-90-61B (El. 736', Az. 82°) are as follows: (**Acc Crit**)

- A. Green POWER ON light is ON.  
B. Red HIGH ALARM light is OFF.

- [8] **VERIFY** the following:

- A. 0-XA-55-12D/193-E, 2-RR-90-1 AREA MONITORS INSTR MALF, is NOT in ALARM. (**Acc Crit**)  
B. Unit 2 Event Display Monitor indicates 193-E INCORE INSTR ROOM AREA MON INSTR MALF (2-RM-90-61) is in NORMAL (Blue). (**Acc Crit**)

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**6.4 2-LPR-90-61, LWR COMPARTMENT INSTR ROOM AREA MON  
(continued)**

**CAUTION**

100 Vdc is present when the front panel of the RM-1000 ratemeter is open. Do not touch the exposed circuitry on the display.

- [9] **LOOSEN** the left side thumb screws on the front panel of 2-RM-90-61, **AND**

**OPEN** the hinged door. \_\_\_\_\_

- [10] **SET** the OPERATE/CALIBRATE switch on the Output card in 2-RM-90-61 to the CAL (down) position, **AND**

**VERIFY** the green OPERATE light is OFF. (**Acc Crit**) \_\_\_\_\_

- [11] **CLOSE** the hinged door on the front of 2-RM-90-61. \_\_\_\_\_

- [12] **PRESS** the [CLR] button on the front panel of 2-RM-90-61, **AND**

**VERIFY** the green OPERATE light remains OFF. (**Acc Crit**) \_\_\_\_\_

- [13] **VERIFY** the following:

A. 0-XA-55-12D/193-E, 2-RR-90-1 AREA MONITORS INSTR MALF, ALARMS. (**Acc Crit**) \_\_\_\_\_

B. Unit 2 Event Display Monitor indicates 193-E INCORE INSTR ROOM AREA MON INSTR MALF (2-RM-90-61) is in ALARM (Red). (**Acc Crit**) \_\_\_\_\_

- [14] **OPEN** the hinged door on the front of 2-RM-90-61. \_\_\_\_\_

- [15] **SET** the OPERATE/CALIBRATE switch on the Output card in 2-RM-90-61 to the OPERATE (up) position. \_\_\_\_\_

- [16] **CLOSE** the hinged door on the front panel of 2-RM-90-61, **AND**

**TIGHTEN** the left side thumb screws. \_\_\_\_\_

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**6.4 2-LPR-90-61, LWR COMPARTMENT INSTR ROOM AREA MON  
(continued)**

[17] **PRESS** the [CLR] button on the front panel of 2-RM-90-61,  
**AND**

**VERIFY** the green OPERATE is ON. (**Acc Crit**)

[18] **VERIFY** the following:

A. 0-XA-55-12D/193-E, 2-RR-90-1 AREA MONITORS  
INSTR MALF, CLEARS. (**Acc Crit**)

B. Unit 2 Event Display Monitor indicates 193-E INCORE  
INSTR ROOM AREA MON INSTR MALF (2-RM-90-61) is  
in NORMAL (Blue). (**Acc Crit**)

[19] **REMOVE** fuse F1 from 2-PX-90-61 LWR COMPARTMENT  
REAC BLDG-AREA MON PWR SPLY located inside MCR  
Panel 0-M-12.

CV

[20] **VERIFY** the following: (**Acc Crit**)

A. 0-XA-55-12D/193-B, 2-RR-90-1 AREA RAD HI, ALARMS.  
(**Acc Crit**)

B. Unit 2 Event Display Monitor indicates 193-B CONT  
INSTR RM AREA RAD HI (2-RM-90-61) is in ALARM  
(Red). (**Acc Crit**)

C. 0-XA-55-12D/193-E, 2-RR-90-1 AREA MONITORS  
INSTR MALF, ALARMS. (**Acc Crit**)

D. Unit 2 Event Display Monitor indicates 193-E  
PERSONNEL AIR LOCK AREA MON INSTR MALF  
(2-RM-90-61) is in ALARM (Red). (**Acc Crit**)

[21] **INSTALL** fuse F1 in 2-PX-90-61 LWR COMPARTMENT  
REAC BLDG-AREA MON PWR SPLY located inside MCR  
Panel 0-M-12.

CV

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**6.4 2-LPR-90-61, LWR COMPARTMENT INSTR ROOM AREA MON  
(continued)**

[22] **PRESS** the [CLR] button on the front panel of 2-RM-90-61,  
**AND**

**VERIFY** the green OPERATE is ON. (Acc Crit) \_\_\_\_\_

[23] **VERIFY** the following:

A. 0-XA-55-12D/193-B, 2-RR-90-1 AREA RAD HI, CLEARS.  
(Acc Crit) \_\_\_\_\_

B. Unit 2 Event Display Monitor indicates 193-B CONT  
INSTR RM AREA RAD HI (2-RM-90-61) is in NORMAL  
(Blue). (Acc Crit) \_\_\_\_\_

C. 0-XA-55-12D/193-E, 2-RR-90-1 AREA MONITORS  
INSTR MALF, CLEARS. (Acc Crit) \_\_\_\_\_

D. Unit 2 Event Display Monitor indicates 193-E INCORE  
INSTR ROOM AREA MON INSTR MALF (2-RM-90-61) is  
in NORMAL (Blue). (Acc Crit) \_\_\_\_\_

[24] **RECORD** the following ambient dose rate indications:

Device	Indication	Initials/date
2-RM-90-61 LWR COMPARTMENT REAC BLDG-AREA MON (MCR Panel 0-M-12)	R/HR	_____
2-RR-90-1P004 AREA RADIATION MONITORS (MCR Panel 0-M-12)	R/HR	_____
2-RI-90-61B LWR COMPARTMENT REAC BLDG-AREA MON (El. 736', Az. 82°)	R/HR	_____



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**6.4 2-LPR-90-61, LWR COMPARTMENT INSTR ROOM AREA MON  
(continued)**

**ALARA**

The radioactive source hung by 2-IMI-90.020, Calibration of Low Range Area Radiation Monitors with RM-1000 Digital Ratemeters, has a high dose potential. Actions to reduce dose must be taken during performance of steps 6.4[25] through 6.4[26.3].

**NOTE**

Steps 6.4[25] through 6.4[26.3] are to be performed after 2-IMI-90.020, Calibration of Low Range Area Radiation Monitors with RM-1000 Digital Ratemeters, has hung the calibration source in 2-RE-90-61.

[25] **RECORD** the following source response indications:

Device	Indication	Initials/date
2-RM-90-61 LWR COMPARTMENT REAC BLDG-AREA MON (MCR Panel 0-M-12)	R/HR	_____
2-RR-90-1P004 AREA RADIATION MONITORS (MCR Panel 0-M-12)	R/HR	_____
2-RI-90-61B LWR COMPARTMENT REAC BLDG-AREA MON (El. 736', Az. 82°)	R/HR	_____

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**6.4 2-LPR-90-61, LWR COMPARTMENT INSTR ROOM AREA MON**  
**(continued)**

[26] **PERFORM** the following radiation response verifications:

[26.1] **VERIFY** the following local and main control room alarms actuated.

- A. 2-RI-90-61B red HIGH ALARM light is ON.  
**(Acc Crit)** \_\_\_\_\_
- B. 2-RI-90-61B audible alarm is ON. **(Acc Crit)** \_\_\_\_\_
- C. 2-RM-90-61 yellow ALERT (1) light is ON.  
**(Acc Crit)** \_\_\_\_\_
- D. 2-RM-90-61 red HIGH (2) light is ON. **(Acc Crit)** \_\_\_\_\_
- E. 0-XA-55-12D/193-B, 2-RR-90-1 AREA RAD HI,  
ALARMS. **(Acc Crit)** \_\_\_\_\_
- F. Unit 2 Event Display Monitor indicates 193-B CONT  
INSTR RM AREA RAD HI (2-RM-90-61) is in  
ALARM (Red). **(Acc Crit)** \_\_\_\_\_

[26.2] **PRESS** the [CLR] button on 2-RM-90-61, **AND**

**VERIFY** the following: **(Acc Crit)**

- A. 2-RI-90-61B red HIGH ALARM light is ON.  
**(Acc Crit)** \_\_\_\_\_
- B. 2-RI-90-61B audible alarm is ON. **(Acc Crit)** \_\_\_\_\_
- C. 2-RM-90-61 yellow ALERT (1) light is ON.  
**(Acc Crit)** \_\_\_\_\_
- D. 2-RM-90-61 red HIGH (2) light is ON. **(Acc Crit)** \_\_\_\_\_
- E. 0-XA-55-12D/193-B, 2-RR-90-1 AREA RAD HI, is in  
ALARM. **(Acc Crit)** \_\_\_\_\_
- F. Unit 2 Event Display Monitor indicates 193-B CONT  
INSTR RM AREA RAD HI (2-RM-90-61) is in  
ALARM (Red). **(Acc Crit)** \_\_\_\_\_

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**6.4 2-LPR-90-61, LWR COMPARTMENT INSTR ROOM AREA MON  
(continued)**

[26.3] **PRESS** the alarm acknowledge button on 2-RI-90-61B,  
**AND**

**VERIFY** the audible alarm is OFF. (**Acc Crit**) \_\_\_\_\_

**NOTE**

The remainder of subsection 6.4 is to be performed after 2-IMI-90.020, Calibration of Low Range Area Radiation Monitors with RM-1000 Digital Ratemeters, has removed the source from 2-RE-90-61.

[27] **PERFORM** the following radiation response verifications:

[27.1] **RECORD** the following ambient dose rate indications,  
**AND**

**VERIFY** ambient dose rates are similar to those  
recorded in step 6.4[24].

Device	Indication	Initials/date
2-RM-90-61 LWR COMPARTMENT REAC BLDG-AREA MON (MCR Panel 0-M-12)	R/HR	_____
2-RR-90-1P004 AREA RADIATION MONITORS (MCR Panel 0-M-12)	R/HR	_____
2-RI-90-61B LWR COMPARTMENT REAC BLDG-AREA MON (El. 736', Az. 82°)	R/HR	_____

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**6.4 2-LPR-90-61, LWR COMPARTMENT INSTR ROOM AREA MON**  
**(continued)**

[27.2] **VERIFY** the local and main control room alarms and annunciators actuate as follows:

- A. 2-RI-90-61B red HIGH ALARM light is ON.  
**(Acc Crit)** \_\_\_\_\_
- B. 2-RM-90-61 yellow ALERT (1) light is ON.  
**(Acc Crit)** \_\_\_\_\_
- C. 2-RM-90-61 red HIGH (2) light is ON. **(Acc Crit)** \_\_\_\_\_
- D. 0-XA-55-12D/193-B, 2-RR-90-1 AREA RAD HI,  
CLEAR. **(Acc Crit)** \_\_\_\_\_
- E. Unit 2 Event Display Monitor indicates 193-B CONT  
INSTR RM AREA RAD HI (2-RM-90-61) is in  
NORMAL (Blue). **(Acc Crit)** \_\_\_\_\_

[27.3] **PRESS** the [CLR] button on 2-RM-90-61, **AND**

**VERIFY** the following: **(Acc Crit)**

- A. 2-RI-90-61B red HIGH ALARM light is OFF.  
**(Acc Crit)** \_\_\_\_\_
- B. 2-RM-90-61 yellow ALERT (1) light is OFF.  
**(Acc Crit)** \_\_\_\_\_
- C. 2-RM-90-61 red HIGH (2) light is OFF. **(Acc Crit)** \_\_\_\_\_
- D. 0-XA-55-12D/193-B, 2-RR-90-1 AREA RAD HI,  
CLEAR. **(Acc Crit)** \_\_\_\_\_
- E. Unit 2 Event Display Monitor indicates 193-B CONT  
INSTR RM AREA RAD HI (2-RM-90-61) is in  
NORMAL (Blue). **(Acc Crit)** \_\_\_\_\_

[27.4] **COMPARE** the source response recorded in step 6.4[25] to the ambient reading recorded in step 6.4[24] for each device, **AND**

**VERIFY** each device exhibited an increased deflection above background once exposed to the calibration source. \_\_\_\_\_

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6.4 2-LPR-90-61, LWR COMPARTMENT INSTR ROOM AREA MON  
(continued)

**NOTE**

When the RM-1000 is in the OPERATE mode the checksource function will clear after one minute so recording of response values needs to be completed within that time period or the sequence will have to be repeated.

[28] **PERFORM** the following Check Source response verifications.

[28.1] **PRESS** the [FUN], [2], [ENT] buttons on 2-RM-90-61  
LWR COMPARTMENT REAC BLDG-AREA MON (MCR  
Panel 0-M-12) to actuate the CHKSRC function. \_\_\_\_\_

**NOTE**

The RM-1000 meter responds to a checksource test by displaying the ambient reading on the left side of the scale and the checksource response on the right side of the scale with the checksource response value indicated at the bottom along with the function description "CHKSRC".

[28.2] **VERFIY** the indication on 2-RM-90-61 shows a two level  
response with the left indication lower than the right  
indication. (**Acc Crit**) \_\_\_\_\_

[28.3] **RECORD** the following indications, **AND**

**VERIFY** each device exhibited an increased deflection  
above the ambient dose rates recorded in step 6.4[27.1].  
(**Acc Crit**) \_\_\_\_\_

Device	Indication	Initials/date
2-RM-90-61 LWR COMPARTMENT REAC BLDG-AREA MON (MCR Panel 0-M-12)	R/HR	_____
2-RR-90-1P004 AREA RADIATION MONITORS (MCR Panel 0-M-12)	R/HR	_____
2-RI-90-61B LWR COMPARTMENT REAC BLDG-AREA MON (El. 736', Az. 82°)	R/HR	_____

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**6.4 2-LPR-90-61, LWR COMPARTMENT INSTR ROOM AREA MON  
(continued)**

[28.4] **VERIFY** the main control room alarms as follows:  
(Acc Crit)

A. 2-RM-90-61 yellow ALERT (1) light is OFF. \_\_\_\_\_

B. 2-RM-90-61 red HIGH (2) light is OFF. \_\_\_\_\_

[28.5] **WHEN** at least one minute has elapsed from the time  
the CHKSRC function actuated, **THEN**

**VERIFY** the following devices indicate dose rates similar  
to those recorded in step 6.4[27.1].

A. 2-RM-90-61 LWR COMPARTMENT REAC BLDG-  
AREA MON (MCR Panel 0-M-12). \_\_\_\_\_

B. 2-RR-90-1P004 AREA RADIATION MONITORS  
(MCR Panel 0-M-12). \_\_\_\_\_

C. 2-RI-90-61B LWR COMPARTMENT REAC BLDG-  
AREA MON (El. 736', Az. 82°). \_\_\_\_\_

[29] **WHEN** the Loss of Counts Setup portion of 2-IMI-90.020 has  
been completed,

**THEN,**

**VERIFY** the following (actions should occur within  
approximately two minutes after 2-IMI-90.020 has set the  
Discriminator Voltage to 10Vdc): (Acc Crit)

A. The green OPERATE light is OFF (On the front panel of  
2-RM-90-61). (Acc Crit) \_\_\_\_\_

B. 0-XA-55-12D/193-E, 2-RR-90-1 AREA MONITORS  
INSTR MALF, ALARMS. (Acc Crit) \_\_\_\_\_

C. Unit 2 Event Display Monitor indicates 193-E INCORE  
INSTR ROOM AREA MON INSTR MALF (2-RM-90-61) is  
in ALARM (Red). (Acc Crit) \_\_\_\_\_

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## 6.5 2-LPR-90-271, CNTMT POST ACC HIGH RAD

### NOTES

- 1) Subsection 6.5 is to be performed in parallel with 2-SI-90-1, 18 Mo Ch Source Cal CNTMT UPR COMPT HR Post Accident ARM Train A Loop 2-LPR-90-271.
- 2) For consistency with 2-SI-90-1, steps in Subsection 6.5 may be performed in any order.

[1] **ENSURE** the prerequisites listed in Section 4.0 for Subsection 6.5 have been completed.

[2] **ESTABLISH** communications between the MCR Panel 0-M-12 and detector 2-RE-90-271, UPR INS CNTMT POST ACD AREA MON (El. 815', Az. 180°).

[3] **ENSURE** 2-BKR-235-3/45, RAD RATEMETERS AND 2-81-90-106, is in the ON position.

CV

[4] **VERIFY** 2-SI-90-1 has lowered the setpoints for 2-RM-90-271.

[5] **VERIFY** the ratemeter indication on 2-RM-90-271 (MCR Panel 2-M-30) are as follows: (**Acc Crit**)

- A. Green OPERATE light is ON.
- B. Yellow ALERT (1) light is OFF.
- C. Red HIGH (2) light is OFF.

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**6.5 2-LPR-90-271, CNTMT POST ACC HIGH RAD (continued)**

[6] **VERIFY** the following:

- A. 0-XA-55-12D/191-E, PAS MON PNL 2M30/31 INSTR  
MALF, is CLEAR. (**Acc Crit**) \_\_\_\_\_
- B. Unit 2 Event Display Monitor indicates 191-E UPPER  
CNTMT PAS MON INSTR MALF (2-RM-90-271-A) is in  
NORMAL (Blue). (**Acc Crit**) \_\_\_\_\_

**CAUTION**

100 Vdc is present when the front panel of the RM-1000 ratemeter is open. Do not touch the exposed circuitry on the display.

[7] **LOOSEN** the left side thumb screws on the front panel of  
2-RM-90-271, **AND**

**OPEN** the hinged door. \_\_\_\_\_

[8] **SET** the OPERATE/CALIBRATE switch on the Output card in  
2-RM-90-271 to the CAL (down) position, **AND**

**VERIFY** the green OPERATE light is OFF. (**Acc Crit**) \_\_\_\_\_

[9] **CLOSE** the hinged door on the front of 2-RM-90-271. \_\_\_\_\_

[10] **PRESS** the [CLR] button on the front panel of 2-RM-90-271,  
**AND**

**VERIFY** the green OPERATE light remains OFF. (**Acc Crit**) \_\_\_\_\_

[11] **VERIFY** the following:

- A. 0-XA-55-12D/191-E, PAS MON PNL 2M30/31 INSTR  
MALF, ALARMS. (**Acc Crit**) \_\_\_\_\_
- B. Unit 2 Event Display Monitor indicates 191-E UPPER  
CNTMT PAS MON INSTR MALF (2-RM-90-271-A) is in  
ALARM (Red). (**Acc Crit**) \_\_\_\_\_

[12] **OPEN** the hinged door on the front of 2-RM-90-271. \_\_\_\_\_

[13] **SET** the OPERATE/CALIBRATE switch on the Output card in  
2-RM-90-271 to the OPERATE (up) position. \_\_\_\_\_



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**6.5 2-LPR-90-271, CNTMT POST ACC HIGH RAD (continued)**

- [14] **CLOSE** the hinged door on the front panel of 2-RM-90-271,  
**AND**

**TIGHTEN** the left side thumb screws. \_\_\_\_\_

- [15] **PRESS** the [CLR] button on the front panel of 2-RM-90-271,  
**AND**

**VERIFY** the green OPERATE is ON. (Acc Crit) \_\_\_\_\_

- [16] **VERIFY** the following:

A. 0-XA-55-12D/191-E, PAS MON PNL 2M30/31 INSTR  
MALF, CLEARS. (Acc Crit) \_\_\_\_\_

B. Unit 2 Event Display Monitor indicates 191-E UPPER  
CNTMT PAS MON INSTR MALF (2-RM-90-271-A) is in  
NORMAL (Blue). (Acc Crit) \_\_\_\_\_

- [17] **REMOVE** fuse F1 from 2-PX-90-271 UPR INS CNTMT POST  
ACD AREA MON PWR SUPPLY located inside MCR Panel  
2-M-30. \_\_\_\_\_

CV

- [18] **VERIFY** the following: (Acc Crit)

A. 2-XA-55-30/265-A, UPPER CNTMNT RE-271/272 RAD  
HI, ALARMS. (Acc Crit) \_\_\_\_\_

B. 0-XA-55-12D/191-E, PAS MON PNL 2M30/31 INSTR  
MALF, ALARMS. (Acc Crit) \_\_\_\_\_

C. Unit 2 Event Display Monitor indicates 191-E UPPER  
CNTMT PAS MON INSTR MALF (2-RM-90-271-A) is in  
ALARM (Red). (Acc Crit) \_\_\_\_\_

- [19] **INSTALL** fuse F1 in 2-PX-90-271 UPR INS CNTMT POST  
ACD AREA MON PWR SUPPLY located inside MCR Panel  
2-M-30. \_\_\_\_\_

CV

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**6.5 2-LPR-90-271, CNTMT POST ACC HIGH RAD (continued)**

[20] **PRESS** the [CLR] button on the front panel of 2-RM-90-271,  
**AND**

**VERIFY** the green OPERATE is ON. (**Acc Crit**) \_\_\_\_\_

[21] **VERIFY** the following:

A. 2-XA-55-30/265-A, UPPER CNTMNT RE-271/272 RAD  
HI, CLEARS. (**Acc Crit**) \_\_\_\_\_

B. 0-XA-55-12D/191-E, PAS MON PNL 2M30/31 INSTR  
MALF, CLEARS. (**Acc Crit**) \_\_\_\_\_

C. Unit 2 Event Display Monitor indicates 191-E UPPER  
CNTMT PAS MON INSTR MALF (2-RM-90-271-A) is in  
NORMAL (Blue). (**Acc Crit**) \_\_\_\_\_

[22] **RECORD** the following ambient dose rate indications:

Device	Indication	Initials/date
2-RM-90-271 UPR INS CNTMT POST ACD AREA MON (MCR Panel 2-M-30)	R/HR	_____
R9018A ICS Point for 2-RE-90-271	R/HR	_____

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**6.5 2-LPR-90-271, CNTMT POST ACC HIGH RAD (continued)**

**ALARA**

The radioactive source hung by 2-SI-90-1, 18 Mo Ch Source Cal CNTMT UPR COMPT HR Post Accident ARM Train A Loop 2-LPR-90-271, has a high dose potential. Actions to reduce dose must be taken during performance of steps 6.5[23] through 6.5[24.2].

**NOTE**

Steps 6.5[23] through 6.5[24.2] are to be performed after 2-SI-90-1, 18 Mo Ch Source Cal CNTMT UPR COMPT HR Post Accident ARM Train A Loop 2-LPR-90-271, has hung the calibration source in 2-RE-90-271.

[23] **RECORD** the following source response indications:

Device	Indication	Initials/date
2-RM-90-271 UPR INS CNTMT POST ACD AREA MON (MCR Panel 2-M-30)	R/HR	_____
R9018A ICS Point for 2-RE-90-271 (Acc Crit)	R/HR	_____

[24] **PERFORM** the following radiation response verifications:

[24.1] **VERIFY** the following local and main control room alarms actuated.

- A. 2-RM-90-271 yellow ALERT (1) light is ON.  
(Acc Crit) \_\_\_\_\_
- B. 2-RM-90-271 red HIGH (2) light is ON. (Acc Crit) \_\_\_\_\_
- C. 2-XA-55-30/265-A, UPPER CNTMNT RE-271/272  
RAD HI, ALARMS. (Acc Crit) \_\_\_\_\_

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**6.5 2-LPR-90-271, CNTMT POST ACC HIGH RAD (continued)**

[24.2] **PRESS** the [CLR] button on 2-RM-90-271, **AND**

**VERIFY** the following: (**Acc Crit**)

- A. 2-RM-90-271 yellow ALERT (1) light is ON.  
(**Acc Crit**) \_\_\_\_\_
- B. 2-RM-90-271 red HIGH (2) light is ON. (**Acc Crit**) \_\_\_\_\_
- C. 2-XA-55-30/265-A, UPPER CNTMNT RE-271/272  
RAD HI, is in ALARM. (**Acc Crit**) \_\_\_\_\_

**NOTE**

The remainder of subsection 6.5 is to be performed after 2-SI-90-1, 18 Mo Ch Source Cal CNTMT UPR COMPT HR Post Accident ARM Train A Loop 2-LPR-90-271, has removed the source from 2-RE-90-271.

[25] **PERFORM** the following radiation response verifications:

[25.1] **RECORD** the following ambient dose rate indications,  
**AND**

**VERIFY** ambient dose rates are similar to those  
recorded in step 6.5[22].

Device	Indication	Initials/date
2-RM-90-271 UPR INS CNTMT POST ACD AREA MON (MCR Panel 2-M-30)	R/HR	_____
R9018A ICS Point for 2-RE-90-271	R/HR	_____

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**6.5 2-LPR-90-271, CNTMT POST ACC HIGH RAD (continued)**

[25.2] **VERIFY** the local and main control room alarms and annunciators actuate as follows:

- A. 2-RM-90-271 yellow ALERT (1) light is on.  
(Acc Crit) \_\_\_\_\_
- B. 2-RM-90-271 red HIGH (2) light is ON. (Acc Crit) \_\_\_\_\_
- C. 2-XA-55-30/265-A, UPPER CNTMNT RE-271/272  
RAD HI, ALARMS. (Acc Crit) \_\_\_\_\_

[25.3] **PRESS** the [CLR] button on 2-RM-90-271, **AND**

**VERIFY** the following: (Acc Crit)

- A. 2-RM-90-271 yellow ALERT (1) light is OFF.  
(Acc Crit) \_\_\_\_\_
- B. 2-RM-90-271 red HIGH (2) light is OFF. (Acc Crit) \_\_\_\_\_
- C. 2-XA-55-30/265-A, UPPER CNTMNT RE-271/272  
RAD HI, CLEARS. (Acc Crit) \_\_\_\_\_

[25.4] **COMPARE** the source response recorded in step 6.5[23] to the ambient reading recorded in step 6.5[22] for each device, **AND**

**VERIFY** each device exhibited an increased deflection above background once exposed to the calibration source. \_\_\_\_\_

**NOTE**

When the RM-1000 is in the OPERATE mode the checksource function will clear after one minute so recording of response values needs to be completed within that time period or the sequence will have to be repeated.

[26] **PERFORM** the following Check Source response verifications.

[26.1] **PRESS** the [FUN], [2], [ENT] buttons on 2-RM-90-271 UPR INS CNTMT POST ACD AREA MON (Panel 2-M-30) to actuate the CHKSRC function. \_\_\_\_\_

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6.5 2-LPR-90-271, CNTMT POST ACC HIGH RAD (continued)

**NOTE**

The RM-1000 meter responds to a checksource test by displaying the ambient reading on the left side of the scale and the checksource response on the right side of the scale with the checksource response value indicated at the bottom along with the function description "CHKSRC".

[26.2] **VERFIY** the indication on 2-RM-90-271 shows a two level response with the left indication lower than the right indication. (**Acc Crit**) \_\_\_\_\_

[26.3] **VERIFY** the main control room alarms as follows:  
(**Acc Crit**) \_\_\_\_\_

A. 2-RM-90-271 yellow ALERT (1) light is OFF. \_\_\_\_\_

B. 2-RM-90-271 red HIGH (2) light is OFF. \_\_\_\_\_

[26.4] **WHEN** at least one minute has elapsed from the time the CHKSRC function actuated, **THEN**

**VERIFY** the indication on 2-RM-90-271 UPR INS  
CNTMT POST ACD AREA MON (Panel 2-M-30)  
indicates a dose rate similar to the one recorded in step  
6.5[25.1]. \_\_\_\_\_

[27] **WHEN** the Loss of Counts Setup portion of 2-SI-90-1 has been completed,

**THEN,**

**VERIFY** the following (actions should occur within approximately two minutes after 2-SI-90-1 has set the Discriminator Voltage to 10Vdc): (**Acc Crit**)

A. The green OPERATE light is OFF (On the front panel of 2-RM-90-271). (**Acc Crit**) \_\_\_\_\_

B. 0-XA-55-12D/191-E, PAS MON PNL 2M30/31 INSTR MALF, ALARMS. (**Acc Crit**) \_\_\_\_\_

C. Unit 2 Event Display Monitor indicates 191-E UPPER CNTMT PAS MON INSTR MALF (2-RM-90-271-A) is in ALARM (Red). (**Acc Crit**) \_\_\_\_\_

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## 6.6 2-LPR-90-272, CNTMT POST ACC HIGH RAD

### NOTES

- 1) Subsection 6.6 is to be performed in parallel with 2-SI-90-2, 18 Mo Ch Source Cal CNTMT UPR COMPT HR Post Accident ARM Train B Loop 2-LPR-90-272.
- 2) For consistency with 2-SI-90-2, steps in Subsection 6.6 may be performed in any order.

[1] **ENSURE** the prerequisites listed in Section 4.0 for Subsection 6.6 have been completed.

[2] **ESTABLISH** communications between the MCR Panel 0-M-12 and detector 2-RE-90-272, UPR INS CNTMT POST ACD AREA MON (El. 815', Az. 360°).

[3] **ENSURE** 2-BKR-235-4/47, Feed to MCR PNL 0-M-12 RAD RATERMETERS is in the ON position.

CV

[4] **ENSURE** 2-SI-90-2 has lowered the setpoints for 2-RM-90-272.

[5] **VERIFY** the ratemeter indication on 2-RM-90-272 (MCR Panel 2-M-30) are as follows: (**Acc Crit**)

A. Green OPERATE light is ON.

B. Yellow ALERT (1) light is OFF.

C. Red HIGH (2) light is OFF.

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**6.6 2-LPR-90-272, CNTMT POST ACC HIGH RAD (continued)**

[6] **VERIFY** the following:

- A. 0-XA-55-12D/191-E, PAS MON PNL 2M30/31 INSTR  
MALF, is CLEAR. (**Acc Crit**) \_\_\_\_\_
- B. Unit 2 Event Display Monitor indicates 191-E UPPER  
CNTMT PAS MON INSTR MALF (2-RM-90-272-B) is in  
NORMAL (Blue). (**Acc Crit**) \_\_\_\_\_

**CAUTION**

100 Vdc is present when the front panel of the RM-1000 ratemeter is open. Do not touch the exposed circuitry on the display.

[7] **LOOSEN** the left side thumb screws on the front panel of  
2-RM-90-272, **AND**

**OPEN** the hinged door. \_\_\_\_\_

[8] **SET** the OPERATE/CALIBRATE switch on the Output card in  
2-RM-90-272 to the CAL (down) position, **AND**

**VERIFY** the green OPERATE light is OFF. (**Acc Crit**) \_\_\_\_\_

[9] **CLOSE** the hinged door on the front of 2-RM-90-272. \_\_\_\_\_

[10] **PRESS** the [CLR] button on the front panel of 2-RM-90-272,  
**AND**

**VERIFY** the green OPERATE light remains OFF. (**Acc Crit**) \_\_\_\_\_

[11] **VERIFY** the following:

- A. 0-XA-55-12D/191-E, PAS MON PNL 2M30/31 INSTR  
MALF, ALARMS. (**Acc Crit**) \_\_\_\_\_
- B. Unit 2 Event Display Monitor indicates 191-E UPPER  
CNTMT PAS MON INSTR MALF (2-RM-90-272-B) is in  
ALARM (Red). (**Acc Crit**) \_\_\_\_\_

[12] **OPEN** the hinged door on the front of 2-RM-90-272. \_\_\_\_\_



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**6.6 2-LPR-90-272, CNTMT POST ACC HIGH RAD (continued)**

[13] **SET** the OPERATE/CALIBRATE switch on the Output card in 2-RM-90-272 to the OPERATE (up) position. \_\_\_\_\_

[14] **CLOSE** the hinged door on the front panel of 2-RM-90-272,  
**AND** \_\_\_\_\_

**TIGHTEN** the left side thumb screws. \_\_\_\_\_

[15] **PRESS** the [CLR] button on the front panel of 2-RM-90-272,  
**AND** \_\_\_\_\_

**VERIFY** the green OPERATE is ON. (Acc Crit) \_\_\_\_\_

[16] **VERIFY** the following: \_\_\_\_\_

A. 0-XA-55-12D/191-E, PAS MON PNL 2M30/31 INSTR  
MALF, CLEARS. (Acc Crit) \_\_\_\_\_

B. Unit 2 Event Display Monitor indicates 191-E UPPER  
CNTMT PAS MON INSTR MALF (2-RM-90-272-B) is in  
NORMAL (Blue). (Acc Crit) \_\_\_\_\_

[17] **REMOVE** F1 from 2-PX-90-272 UPR INS CNTMT POST ACD  
AREA MON PWR SUPPLY located inside MCR Panel 2-M-30. \_\_\_\_\_

CV

[18] **VERIFY** the following: (Acc Crit) \_\_\_\_\_

A. 2-XA-55-30/265-A, UPPER CNTMNT RE-271/272 RAD  
HI, ALARMS. (Acc Crit) \_\_\_\_\_

B. 0-XA-55-12D/191-E, PAS MON PNL 2M30/31 INSTR  
MALF, ALARMS. (Acc Crit) \_\_\_\_\_

C. Unit 2 Event Display Monitor indicates 191-E UPPER  
CNTMT PAS MON INSTR MALF (2-RM-90-272-B) is in  
ALARM (Red). (Acc Crit) \_\_\_\_\_

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**6.6 2-LPR-90-272, CNTMT POST ACC HIGH RAD (continued)**

- [19] **INSTALL** fuse F1 in 2-PX-90-272 UPR INS CNTMT POST ACD AREA MON PWR SUPPLY located inside MCR Panel 2-M-30.

\_\_\_\_\_  
\_\_\_\_\_  
CV

- [20] **PRESS** the [CLR] button on the front panel of 2-RM-90-272, **AND**

**VERIFY** the green OPERATE is ON. (**Acc Crit**)

- [21] **VERIFY** the following:

- A. 2-XA-55-30/265-A, UPPER CNTMNT RE-271/272 RAD HI, CLEARS. (**Acc Crit**)
- B. 0-XA-55-12D/191-E, PAS MON PNL 2M30/31 INSTR MALF, CLEARS. (**Acc Crit**)
- C. Unit 2 Event Display Monitor indicates 191-E UPPER CNTMT PAS MON INSTR MALF (2-RM-90-272-B) is in NORMAL (Blue). (**Acc Crit**)

- [22] **RECORD** the following ambient dose rate indications:

Device	Indication	Initials/date
2-RM-90-272 UPR INS CNTMT POST ACD AREA MON (MCR Panel 2-M-30)	R/HR	_____
R9019A ICS Point for 2-RE-90-272	R/HR	_____

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**6.6 2-LPR-90-272, CNTMT POST ACC HIGH RAD (continued)**

**ALARA**

The radioactive source hung by 2-SI-90-2, 18 Mo Ch Source Cal CNTMT UPR COMPT HR Post Accident ARM Train B Loop 2-LPR-90-272, has a high dose potential. Actions to reduce dose must be taken during performance of steps 6.6[23] through 6.6[24.2].

**NOTE**

Steps 6.6[23] through 6.6[24.2] are to be performed after 2-SI-90-2, 18 Mo Ch Source Cal CNTMT UPR COMPT HR Post Accident ARM Train B Loop 2-LPR-90-272, has hung the calibration source in 2-RE-90-272.

[23] **RECORD** the following source response indications:

Device	Indication	Initials/date
2-RM-90-272 UPR INS CNTMT POST ACD AREA MON (MCR Panel 2-M-30)	R/HR	_____
R9019A ICS Point for 2-RE-90-272 (Acc Crit)	R/HR	_____

[24] **PERFORM** the following radiation response verifications:

[24.1] **VERIFY** the following local and main control room alarms actuated.

A. 2-RM-90-272 yellow ALERT (1) light is ON.  
(Acc Crit) \_\_\_\_\_

B. 2-RM-90-272 red HIGH (2) light is ON. (Acc Crit) \_\_\_\_\_

C. 2-XA-55-30/265-A, UPPER CNTMNT RE-271/272  
RAD HI, ALARMS. (Acc Crit) \_\_\_\_\_

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**6.6 2-LPR-90-272, CNTMT POST ACC HIGH RAD (continued)**

**[24.2] PRESS** the [CLR] button on 2-RM-90-272, **AND**

**VERIFY** the following: **(Acc Crit)**

- A. 2-RM-90-272 yellow ALERT (1) light is ON.  
**(Acc Crit)** \_\_\_\_\_
- B. 2-RM-90-272 red HIGH (2) light is ON. **(Acc Crit)** \_\_\_\_\_
- C. 2-XA-55-30/265-A, UPPER CNTMNT RE-271/272  
RAD HI, is in ALARM. **(Acc Crit)** \_\_\_\_\_

**NOTE**

The remainder of subsection 6.6 is to be performed after 2-SI-90-2, 18 Mo Ch Source Cal CNTMT UPR COMPT HR Post Accident ARM Train B Loop 2-LPR-90-272, has removed the calibration source from 2-RE-90-272.

**[25] PERFORM** the following radiation response verifications:

**[25.1] RECORD** the following ambient dose rate indications,  
**AND**

**VERIFY** ambient dose rates are similar to those  
recorded in step 6.6[22].

Device	Indication	Initials/date
2-RM-90-272 UPR INS CNTMT POST ACD AREA MON (MCR Panel 2-M-30)	R/HR	_____
R9019A ICS Point for 2-RE-90-272	R/HR	_____

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**6.6 2-LPR-90-272, CNTMT POST ACC HIGH RAD (continued)**

[25.2] **VERIFY** the local and main control room alarms and annunciators actuate as follows:

- A. 2-RM-90-272 yellow ALERT (1) light is ON.  
(Acc Crit) \_\_\_\_\_
- B. 2-RM-90-272 red HIGH (2) light is ON. (Acc Crit) \_\_\_\_\_
- C. 2-XA-55-30/265-A, UPPER CNTMNT RE-271/272  
RAD HI, ALARMS. (Acc Crit) \_\_\_\_\_

[25.3] **PRESS** the [CLR] button on 2-RM-90-272, **AND**

**VERIFY** the following: (Acc Crit)

- A. 2-RM-90-272 yellow ALERT (1) light is OFF.  
(Acc Crit) \_\_\_\_\_
- B. 2-RM-90-272 red HIGH (2) light is OFF. (Acc Crit) \_\_\_\_\_
- C. 2-XA-55-30/265-A, UPPER CNTMNT RE-271/272  
RAD HI, CLEARS. (Acc Crit) \_\_\_\_\_

[25.4] **COMPARE** the source response recorded in step 6.6[23] to the ambient reading recorded in step 6.6[22] for each device, **AND**

**VERIFY** each device exhibited an increased deflection above background once exposed to the calibration source. \_\_\_\_\_

**NOTE**

When the RM-1000 is in the OPERATE mode the checksource function will clear after one minute so recording of response values needs to be completed within that time period or the sequence will have to be repeated.

[26] **PERFORM** the following Check Source response verifications.

[26.1] **PRESS** the [FUN], [2], [ENT] buttons on 2-RM-90-272 UPR INS CNTMT POST ACD AREA MON (Panel 2-M-30) to actuate the CHKSRC function. \_\_\_\_\_

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**6.6 2-LPR-90-272, CNTMT POST ACC HIGH RAD (continued)**

**NOTE**

The RM-1000 meter responds to a checksource test by displaying the ambient reading on the left side of the scale and the checksource response on the right side of the scale with the checksource response value indicated at the bottom along with the function description "CHKSRC".

[26.2] **VERFIY** the indication on 2-RM-90-272 shows a two level response with the left indication lower than the right indication. (**Acc Crit**) \_\_\_\_\_

[26.3] **VERIFY** the main control room alarms as follows:  
(**Acc Crit**)

A. 2-RM-90-272 yellow ALERT (1) light is OFF. \_\_\_\_\_

B. 2-RM-90-272 red HIGH (2) light is OFF. \_\_\_\_\_

[26.4] **WHEN** at least one minute has elapsed from the time the CHKSRC function actuated, **THEN**

**VERIFY** the indication on 2-RM-90-272 UPR INS  
CNTMT POST ACD AREA MON (Panel 2-M-30)  
indicates a dose rate similar to the one recorded in step  
6.6[25.1]. \_\_\_\_\_

[27] **WHEN** the Loss of Counts Setup portion of 2-SI-90-2 has been completed,

**THEN,**

**VERIFY** the following (actions should occur within  
approximately two minutes after 2-SI-90-2 has set the  
Discriminator Voltage to 10Vdc): (**Acc Crit**)

A. The green OPERATE light is OFF (On the front panel of  
2-RM-90-272). (**Acc Crit**) \_\_\_\_\_

B. 0-XA-55-12D/191-E, PAS MON PNL 2M30/31 INSTR  
MALF, ALARMS. (**Acc Crit**) \_\_\_\_\_

C. Unit 2 Event Display Monitor indicates 191-E UPPER  
CNTMT PAS MON INSTR MALF (2-RM-90-272-B) is in  
ALARM (Red). (**Acc Crit**) \_\_\_\_\_

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## 6.7 2-LPR-90-273, CNTMT POST ACC HIGH RAD

### NOTES

- 1) Subsection 6.7 is to be performed in parallel with 2-SI-90-3, 18 Mo Ch Source Cal CNTMT LWR COMPT HR Post Accident ARM Train A Loop 2-LPR-90-273.
- 2) For consistency with 2-IMI-90.021, steps in Subsection 6.7 may be performed in any order.

[1] **ENSURE** the prerequisites listed in Section 4.0 for Subsection 6.7 have been completed.

[2] **ESTABLISH** communications between the MCR Panel 0-M-12 and detector 2-RE-90-273, LWR INS CNTMT POST ACD AREA MON (El. 729', Az. 170°).

[3] **ENSURE** 2-BKR-235-3/45, RAD RATEMETERS AND 2-81-90-106, is in the ON position.

CV

[4] **VERIFY** 2-SI-90-3 has lowered the setpoints for 2-RM-90-273.

[5] **VERIFY** the ratemeter indication on 2-RM-90-273 (MCR Panel 2-M-30) are as follows: (**Acc Crit**)

A. Green OPERATE light is ON.

B. Yellow ALERT (1) light is OFF.

C. Red HIGH (2) light is OFF.

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**6.7 2-LPR-90-273, CNTMT POST ACC HIGH RAD (continued)**

[6] **VERIFY** the following:

- A. 0-XA-55-12D/191-E, PAS MON PNL 2M30/31 INSTR MALF, is CLEAR. (**Acc Crit**) \_\_\_\_\_
- B. Unit 2 Event Display Monitor indicates 191-E UPPER CNTMT PAS MON INSTR MALF (2-RM-90-273-A) is in NORMAL (Blue). (**Acc Crit**) \_\_\_\_\_

**CAUTION**

100 Vdc is present when the front panel of the RM-1000 ratemeter is open. Do not touch the exposed circuitry on the display.

[7] **LOOSEN** the left side thumb screws on the front panel of 2-RM-90-273, **AND**

**OPEN** the hinged door. \_\_\_\_\_

[8] **SET** the OPERATE/CALIBRATE switch on the Output card in 2-RM-90-273 to the CAL (down) position, **AND**

**VERIFY** the green OPERATE light is OFF. (**Acc Crit**) \_\_\_\_\_

[9] **CLOSE** the hinged door on the front of 2-RM-90-273. \_\_\_\_\_

[10] **PRESS** the [CLR] button on the front panel of 2-RM-90-273, **AND**

**VERIFY** the green OPERATE light remains OFF. (**Acc Crit**) \_\_\_\_\_

[11] **VERIFY** the following:

- A. 0-XA-55-12D/191-E, PAS MON PNL 2M30/31 INSTR MALF, ALARMS. (**Acc Crit**) \_\_\_\_\_
- B. Unit 2 Event Display Monitor indicates 191-E UPPER CNTMT PAS MON INSTR MALF (2-RM-90-273-A) is in ALARM (Red). (**Acc Crit**) \_\_\_\_\_

[12] **OPEN** the hinged door on the front of 2-RM-90-273. \_\_\_\_\_

[13] **SET** the OPERATE/CALIBRATE switch on the Output card in 2-RM-90-273 to the OPERATE (up) position. \_\_\_\_\_



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**6.7 2-LPR-90-273, CNTMT POST ACC HIGH RAD (continued)**

[14] **CLOSE** the hinged door on the front panel of 2-RM-90-273,  
**AND**

**TIGHTEN** the left side thumb screws. \_\_\_\_\_

[15] **PRESS** the [CLR] button on the front panel of 2-RM-90-273,  
**AND**

**VERIFY** the green OPERATE is ON. (Acc Crit) \_\_\_\_\_

[16] **VERIFY** the following:

A. 0-XA-55-12D/191-E, PAS MON PNL 2M30/31 INSTR  
MALF, CLEARS. (Acc Crit) \_\_\_\_\_

B. Unit 2 Event Display Monitor indicates 191-E UPPER  
CNTMT PAS MON INSTR MALF (2-RM-90-273-A) is in  
NORMAL (Blue). (Acc Crit) \_\_\_\_\_

[17] **REMOVE** fuse F1 from 2-PX-90-273 LWR INS CNTMT POST  
ACD AREA MON PWR SUPPLY located inside MCR Panel  
2-M-30. \_\_\_\_\_

CV

[18] **VERIFY** the following: (Acc Crit)

A. 2-XA-55-30/265-B, LOWER CNTMT RE-273/274 RAD  
HI, ALARMS. (Acc Crit) \_\_\_\_\_

B. 0-XA-55-12D/191-E, PAS MON PNL 2M30/31 INSTR  
MALF, ALARMS. (Acc Crit) \_\_\_\_\_

C. Unit 2 Event Display Monitor indicates 191-E UPPER  
CNTMT PAS MON INSTR MALF (2-RM-90-273-A) is in  
ALARM (Red). (Acc Crit) \_\_\_\_\_

[19] **INSTALL** fuse F1 in 2-PX-90-273 LWR INS CNTMT POST  
ACD AREA MON PWR SUPPLY located inside MCR Panel  
2-M-30. \_\_\_\_\_

CV

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**6.7 2-LPR-90-273, CNTMT POST ACC HIGH RAD (continued)**

[20] **PRESS** the [CLR] button on the front panel of 2-RM-90-273,  
**AND**

**VERIFY** the green OPERATE is ON. (**Acc Crit**) \_\_\_\_\_

[21] **VERIFY** the following:

A. 2-XA-55-30/265-B, LOWER CNTMNT RE-273/274 RAD  
HI, CLEARS. (**Acc Crit**) \_\_\_\_\_

B. 0-XA-55-12D/191-E, PAS MON PNL 2M30/31 INSTR  
MALF, CLEARS. (**Acc Crit**) \_\_\_\_\_

C. Unit 2 Event Display Monitor indicates 191-E UPPER  
CNTMT PAS MON INSTR MALF (2-RM-90-273-A) is in  
NORMAL (Blue). (**Acc Crit**) \_\_\_\_\_

[22] **RECORD** the following ambient dose rate indications:

Device	Indication	Initials/date
2-RM-90-273 LWR INS CNTMT POST ACD AREA MON (MCR Panel 2-M-30)	R/HR	_____
R9020A ICS Point for 2-RE-90-273	R/HR	_____

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**6.7 2-LPR-90-273, CNTMT POST ACC HIGH RAD (continued)**

**ALARA**

The radioactive source hung by 2-SI-90-3, 18 Mo Ch Source Cal CNTMT LWR COMPT HR Post Accident ARM Train A Loop 2-LPR-90-273, has a high dose potential. Actions to reduce dose must be taken during performance of steps 6.7[23] through 6.7[24.2].

**NOTE**

Steps 6.7[23] through 6.7[24.2] are to be performed after 2-SI-90-3, 18 Mo Ch Source Cal CNTMT LWR COMPT HR Post Accident ARM Train A Loop 2-LPR-90-273, has hung the calibration source in 2-RE-90-273.

[23] **RECORD** the following source response indications:

Device	Indication	Initials/date
2-RM-90-273 LWR INS CNTMT POST ACD AREA MON (MCR Panel 2-M-30)	R/HR	_____
R9020A ICS Point for 2-RE-90-273 (Acc Crit)	R/HR	_____

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**6.7 2-LPR-90-273, CNTMT POST ACC HIGH RAD (continued)**

**[24] PERFORM** the following radiation response verifications:

**[24.1] VERIFY** the following local and main control room alarms actuated.

- A. 2-RM-90-273 yellow ALERT (1) light is ON.  
(Acc Crit) \_\_\_\_\_
- B. 2-RM-90-273 red HIGH (2) light is ON. (Acc Crit) \_\_\_\_\_
- C. 2-XA-55-30/265-B, LOWER CNTMNT RE-273/274  
RAD HI, ALARMS. (Acc Crit) \_\_\_\_\_

**[24.2] PRESS** the [CLR] button on 2-RM-90-273, **AND**

**VERIFY** the following: (Acc Crit)

- A. 2-RM-90-273 yellow ALERT (1) light is ON.  
(Acc Crit) \_\_\_\_\_
- B. 2-RM-90-273 red HIGH (2) light is ON. (Acc Crit) \_\_\_\_\_
- C. 2-XA-55-30/265-B, LOWER CNTMNT RE-273/274  
RAD HI, is in ALARM. (Acc Crit) \_\_\_\_\_

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**6.7 2-LPR-90-273, CNTMT POST ACC HIGH RAD (continued)**

**NOTE**

The remainder of subsection 6.7 to be performed after 2-SI-90-3, 18 Mo Ch Source Cal CNTMT LWR COMPT HR Post Accident ARM Train A Loop 2-LPR-90-273, has removed the calibration source from 2-RE-90-273.

[25] **PERFORM** the following radiation response verifications:

[25.1] **RECORD** the following ambient dose rate indications,  
**AND**

**VERIFY** ambient dose rates are similar to those  
recorded in step 6.7[22].

Device	Indication	Initials/date
2-RM-90-273 LWR INS CNTMT POST ACD AREA MON (MCR Panel 2-M-30)	R/HR	_____
R9020A ICS Point for 2-RE-90-273	R/HR	_____

[25.2] **VERIFY** the local and main control room alarms and  
annunciators actuate as follows:

- A. 2-RM-90-273 yellow ALERT (1) light is ON.  
(Acc Crit) \_\_\_\_\_
- B. 2-RM-90-273 red HIGH (2) light is ON. (Acc Crit) \_\_\_\_\_
- C. 2-XA-55-30/265-B, LOWER CNTMNT RE-273/274  
RAD HI, ALARMS. (Acc Crit) \_\_\_\_\_

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**6.7 2-LPR-90-273, CNTMT POST ACC HIGH RAD (continued)**

[25.3] **PRESS** the [CLR] button on 2-RM-90-273, **AND**

**VERIFY** the following: (**Acc Crit**)

- A. 2-RM-90-273 yellow ALERT (1) light is OFF. (**Acc Crit**) \_\_\_\_\_
- B. 2-RM-90-273 red HIGH (2) light is OFF. (**Acc Crit**) \_\_\_\_\_
- C. 2-XA-55-30/256-B, LOWER CNTMNT RE-273/274  
RAD HI, CLEARS. (**Acc Crit**) \_\_\_\_\_

[25.4] **COMPARE** the source response recorded in step 6.7[23] to the ambient reading recorded in step 6.7[22] for each device, **AND**

**VERIFY** each device exhibited an increased deflection above background once exposed to the calibration source. \_\_\_\_\_

**NOTE**

When the RM-1000 is in the OPERATE mode the checksource function will clear after one minute so recording of response values needs to be completed within that time period or the sequence will have to be repeated.

[26] **PERFORM** the following Check Source response verifications.

[26.1] **PRESS** the [FUN], [2], [ENT] buttons on 2-RM-90-273 LWR INS CNTMT POST ACD AREA MON (Panel 2-M-30) to actuate the CHKSRC function. \_\_\_\_\_

**NOTE**

The RM-1000 meter responds to a checksource test by displaying the ambient reading on the left side of the scale and the checksource response on the right side of the scale with the checksource response value indicated at the bottom along with the function description "CHKSRC".

[26.2] **VERFIY** the indication on 2-RM-90-273 shows a two level response with the left indication lower than the right indication. (**Acc Crit**) \_\_\_\_\_

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**6.7 2-LPR-90-273, CNTMT POST ACC HIGH RAD (continued)**

[26.3] **VERIFY** the main control room alarms as follows:  
**(Acc Crit)**

A. 2-RM-90-273 yellow ALERT (1) light is OFF. \_\_\_\_\_

B. 2-RM-90-273 red HIGH (2) light is OFF. \_\_\_\_\_

[26.4] **WHEN** at least one minute has elapsed from the time  
the CHKSRC function actuated, **THEN**

**VERIFY** the indication on 2-RM-90-273 LWR INS  
CNTMT POST ACD AREA MON (Panel 2-M-30)  
indicates a dose rate similar to the one recorded in step  
6.7[25.1]. \_\_\_\_\_

[27] **WHEN** the Loss of Counts Setup portion of 2-SI-90-3 has been  
completed,

**THEN,**

**VERIFY** the following (actions should occur within  
approximately two minutes after 2-SI-90-3 has set the  
Discriminator Voltage to 10Vdc): **(Acc Crit)**

A. The green OPERATE light is OFF (On the front panel of  
2-RM-90-273). **(Acc Crit)** \_\_\_\_\_

B. 0-XA-55-12D/191-E, PAS MON PNL 2M30/31 INSTR  
MALF, ALARMS. **(Acc Crit)** \_\_\_\_\_

C. Unit 2 Event Display Monitor indicates 191-E UPPER  
CNTMT PAS MON INSTR MALF (2-RM-90-273-A) is in  
ALARM (Red). **(Acc Crit)** \_\_\_\_\_

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## 6.8 2-LPR-90-274, CNTMT POST ACC HIGH RAD

### NOTES

- 1) Subsection 6.8 is to be performed in parallel with 2-SI-90-4, 18 Mo Ch Source Cal CNTMT LWR COMPT HR Post Accident ARM Train B Loop 2-LPR-90-274.
- 2) For consistency with 2-SI-90-4, steps in Subsection 6.8 may be performed in any order.

[1] **ENSURE** the prerequisites listed in Section 4.0 for Subsection 6.8 have been completed.

[2] **ESTABLISH** communications between the MCR Panel 0-M-12 and detector 2-RE-90-274, LWR INS CNTMT POST ACD AREA MON (El. 729, Az. 7°).

[3] **ENSURE** 2-BKR-235-4/47, Feed to MCR PNL 0-M-12 RAD RATERMETERS is in the ON position.

CV

[4] **VERIFY** 2-SI-90-4 has lowered the setpoints for 2-RM-90-274.

[5] **VERIFY** the ratemeter indication on 2-RM-90-274 (MCR Panel 2-M-30) are as follows: (**Acc Crit**)

A. Green OPERATE light is ON.

B. Yellow ALERT (1) light is OFF.

C. Red HIGH (2) light is OFF.



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**6.8 2-LPR-90-274, CNTMT POST ACC HIGH RAD (continued)**

**[6] VERIFY** the following:

- A. 0-XA-55-12D/191-E, PAS MON PNL 2M30/31 INSTR  
MALF, CLEARS. (**Acc Crit**) \_\_\_\_\_
- B. Unit 2 Event Display Monitor indicates 191-E UPPER  
CNTMT PAS MON INSTR MALF (2-RM-90-274-B) is in  
NORMAL (Blue). (**Acc Crit**) \_\_\_\_\_

**CAUTION**

100 Vdc is present when the front panel of the RM-1000 ratemeter is open. Do not touch the exposed circuitry on the display.

**[7] LOOSEN** the left side thumb screws on the front panel of  
2-RM-90-274, **AND**

**OPEN** the hinged door. \_\_\_\_\_

**[8] SET** the OPERATE/CALIBRATE switch on the Output card in  
2-RM-90-274 to the CAL (down) position, **AND**

**VERIFY** the green OPERATE light is OFF. (**Acc Crit**) \_\_\_\_\_

**[9] CLOSE** the hinged door on the front of 2-RM-90-274. \_\_\_\_\_

**[10] PRESS** the [CLR] button on the front panel of 2-RM-90-274,  
**AND**

**VERIFY** the green OPERATE light remains OFF. (**Acc Crit**) \_\_\_\_\_

**[11] VERIFY** the following:

- A. 0-XA-55-12D/191-E, PAS MON PNL 2M30/31 INSTR  
MALF, ALARMS. (**Acc Crit**) \_\_\_\_\_
- B. Unit 2 Event Display Monitor indicates 191-E UPPER  
CNTMT PAS MON INSTR MALF (2-RM-90-274-B) is in  
ALARM (Red). (**Acc Crit**) \_\_\_\_\_

**[12] OPEN** the hinged door on the front of 2-RM-90-274. \_\_\_\_\_

**[13] SET** the OPERATE/CALIBRATE switch on the Output card in  
2-RM-90-274 to the OPERATE (up) position. \_\_\_\_\_

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6.8 2-LPR-90-274, CNTMT POST ACC HIGH RAD (continued)

[14] **CLOSE** the hinged door on the front panel of 2-RM-90-274,  
**AND**

**TIGHTEN** the left side thumb screws. \_\_\_\_\_

[15] **PRESS** the [CLR] button on the front panel of 2-RM-90-274,  
**AND**

**VERIFY** the green OPERATE is ON. (Acc Crit) \_\_\_\_\_

[16] **VERIFY** the following:

A. 0-XA-55-12D/191-E, PAS MON PNL 2M30/31 INSTR  
MALF, CLEARS. (Acc Crit) \_\_\_\_\_

B. Unit 2 Event Display Monitor indicates 191-E UPPER  
CNTMT PAS MON INSTR MALF (2-RM-90-274-B) is in  
NORMAL (Blue). (Acc Crit) \_\_\_\_\_

[17] **REMOVE** fuse F1 from 2-PX-90-274 LWR INS CNTMT POST  
ACD AREA MON PWR SUPPLY located inside MCR Panel  
2-M-30. \_\_\_\_\_

CV

[18] **VERIFY** the following: (Acc Crit)

A. 2-XA-55-30/256-B, LOWER CNTMNT RE-273/274 RAD  
HI, ALARMS. (Acc Crit) \_\_\_\_\_

B. 0-XA-55-12D/191-E, PAS MON PNL 2M30/31 INSTR  
MALF, ALARMS. (Acc Crit) \_\_\_\_\_

C. Unit 2 Event Display Monitor indicates 191-E UPPER  
CNTMT PAS MON INSTR MALF (2-RM-90-274-B) is in  
ALARM (Red). (Acc Crit) \_\_\_\_\_

[19] **INSTALL** fuse F1 in 2-PX-90-274 LWR INS CNTMT POST  
ACD AREA MON PWR SUPPLY located inside MCR Panel  
2-M-30. \_\_\_\_\_

CV

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**6.8 2-LPR-90-274, CNTMT POST ACC HIGH RAD (continued)**

[20] **PRESS** the [CLR] button on the front panel of 2-RM-90-274,  
**AND**

**VERIFY** the green OPERATE is ON. (**Acc Crit**) \_\_\_\_\_

[21] **VERIFY** the following:

A. 2-XA-55-30/256-B, LOWER CNTMNT RE-273/274 RAD  
HI, CLEARS. (**Acc Crit**) \_\_\_\_\_

B. 0-XA-55-12D/191-E, PAS MON PNL 2M30/31 INSTR  
MALF, CLEARS. (**Acc Crit**) \_\_\_\_\_

C. Unit 2 Event Display Monitor indicates 191-E UPPER  
CNTMT PAS MON INSTR MALF (2-RM-90-274-B) is in  
NORMAL (Blue). (**Acc Crit**) \_\_\_\_\_

[22] **RECORD** the following ambient dose rate indications:

Device	Indication	Initials/date
2-RM-90-274 LWR INS CNTMT POST ACD AREA MON (MCR Panel 2-M-30)	R/HR	_____
R9021A ICS Point for 2-RE-90-274	R/HR	_____

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**6.8 2-LPR-90-274, CNTMT POST ACC HIGH RAD (continued)**

**ALARA**

The radioactive source hung by 2-SI-90-4, 18 Mo Ch Source Cal CNTMT LWR COMPT HR Post Accident ARM Train B Loop 2-LPR-90-274, has a high dose potential. Actions to reduce dose must be taken during performance of steps 6.8[22] through 6.8[24.2].

**NOTE**

Steps 6.8[22] through 6.8[24.2] are to be performed after 2-SI-90-4, 18 Mo Ch Source Cal CNTMT LWR COMPT HR Post Accident ARM Train B Loop 2-LPR-90-274, has hung the calibration source in 2-RE-90-274.

[23] **RECORD** the following source response indications:

Device	Indication	Initials/date
2-RM-90-274 LWR INS CNTMT POST ACD AREA MON (MCR Panel 2-M-30)	R/HR	_____
R9021A ICS Point for 2-RE-90-274 (Acc Crit)	R/HR	_____

[24] **PERFORM** the following radiation response verifications:

[24.1] **VERIFY** the following local and main control room alarms actuated.

- A. 2-RM-90-274 yellow ALERT (1) light is ON.  
(Acc Crit) \_\_\_\_\_
- B. 2-RM-90-274 red HIGH (2) light is ON. (Acc Crit) \_\_\_\_\_
- C. 2-XA-55-30/256-B, LOWER CNTMNT RE-273/274  
RAD HI, is in ALARM. (Acc Crit) \_\_\_\_\_

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**6.8 2-LPR-90-274, CNTMT POST ACC HIGH RAD (continued)**

[24.2] **PRESS** the [CLR] button on 2-RM-90-274, **AND**

**VERIFY** the following: (**Acc Crit**)

- A. 2-RM-90-274 yellow ALERT (1) light is ON. (**Acc Crit**) \_\_\_\_\_
- B. 2-RM-90-274 red HIGH (2) light is ON. (**Acc Crit**) \_\_\_\_\_
- C. 2-XA-55-30/256-B, LOWER CNTMNT RE-273/274 RAD HI, is in ALARM. (**Acc Crit**) \_\_\_\_\_

**NOTE**

The remainder of subsection 6.8 is to be performed after 2-SI-90-4, 18 Mo Ch Source Cal CNTMT LWR COMPT HR Post Accident ARM Train B Loop 2-LPR-90-274, has removed the calibration source from 2-RE-90-274.

[25] **PERFORM** the following radiation response verifications:

[25.1] **RECORD** the following ambient dose rate indications, **AND**

**VERIFY** ambient dose rates are similar to those recorded in step 6.8[22]. \_\_\_\_\_

Device	Indication	Initials/date
2-RM-90-274 LWR INS CNTMT POST ACD AREA MON (MCR Panel 2-M-30)	R/HR	_____
R9021A ICS Point for 2-RE-90-274	R/HR	_____

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**6.8 2-LPR-90-274, CNTMT POST ACC HIGH RAD (continued)**

[25.2] **VERIFY** the local and main control room alarms and annunciators actuate as follows:

- A. 2-RM-90-274 yellow ALERT (1) light is ON.  
(Acc Crit) \_\_\_\_\_
- B. 2-RM-90-274 red HIGH (2) light is ON. (Acc Crit) \_\_\_\_\_
- C. 2-XA-55-30/256-B, LOWER CNTMNT RE-273/274  
RAD HI, ALARMS. (Acc Crit) \_\_\_\_\_

[25.3] **PRESS** the [CLR] button on 2-RM-90-274, **AND**

**VERIFY** the following: (Acc Crit)

- A. 2-RM-90-274 yellow ALERT (1) light is OFF.  
(Acc Crit) \_\_\_\_\_
- B. 2-RM-90-274 red HIGH (2) light is OFF. (Acc Crit) \_\_\_\_\_
- C. 2-XA-55-30/256-B, LOWER CNTMNT RE-273/274  
RAD HI, CLEARS. (Acc Crit) \_\_\_\_\_

[25.4] **COMPARE** the source response recorded in step 6.8[23] to the ambient reading recorded in step 6.8[22] for each device, **AND**

**VERIFY** each device exhibited an increased deflection above background once exposed to the calibration source. \_\_\_\_\_

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6.8 2-LPR-90-274, CNTMT POST ACC HIGH RAD (continued)

**NOTE**

When the RM-1000 is in the OPERATE mode the checksource function will clear after one minute so recording of response values needs to be completed within that time period or the sequence will have to be repeated.

[26] **PERFORM** the following Check Source response verifications.

- [26.1] **PRESS** the [FUN], [2], [ENT] buttons on 2-RM-90-274 LWR INS CNTMT POST ACD AREA MON (Panel 2-M-30) to actuate the CHKSRC function.

**NOTE**

The RM-1000 meter responds to a checksource test by displaying the ambient reading on the left side of the scale and the checksource response on the right side of the scale with the checksource response value indicated at the bottom along with the function description "CHKSRC".

- [26.2] **VERFIY** the indication on 2-RM-90-274 shows a two level response with the left indication lower than the right indication. (**Acc Crit**)

- [26.3] **VERIFY** the main control room alarms as follows:  
(**Acc Crit**)

A. 2-RM-90-274 yellow ALERT (1) light is OFF.

B. 2-RM-90-274 red HIGH (2) light is OFF.

- [26.4] **WHEN** at least one minute has elapsed from the time the CHKSRC function actuated, **THEN**

**VERIFY** the indication on 2-RM-90-274 LWR INS CNTMT POST ACD AREA MON (Panel 2-M-30) indicates a dose rate similar to the one recorded in step 6.8[25.1].

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**6.8 2-LPR-90-274, CNTMT POST ACC HIGH RAD (continued)**

[27] **WHEN** the Loss of Counts Setup portion of 2-SI-90-4 has been completed,

**THEN,**

**VERIFY** the following (actions should occur within approximately two minutes after 2-SI-90-4 has set the Discriminator Voltage to 10Vdc): **(Acc Crit)**

- A. The green OPERATE light is OFF (On the front panel of 2-RM-90-274). **(Acc Crit)** \_\_\_\_\_
- B. 0-XA-55-12D/191-E, PAS MON PNL 2M30/31 INSTR MALF, ALARMS. **(Acc Crit)** \_\_\_\_\_
- C. Unit 2 Event Display Monitor indicates 191-E UPPER CNTMT PAS MON INSTR MALF (2-RM-90-274-B) is in ALARM (Red). **(Acc Crit)** \_\_\_\_\_



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## 7.0 POST PERFORMANCE ACTIVITY

### NOTES

- 1) Post-performance steps may be performed in any order unless otherwise stated and should be completed as close in time as practicable to the end of the instruction performance.
- 2) If no M&TE is used, then Step 7.0[7] is N/A.

- [1] **VERIFY** 2-IMI-090.021 has returned the setpoints of 2-RM-90-2 back to normal. \_\_\_\_\_
- [2] **VERIFY** 2-SI-90-1 has returned the setpoints of 2-RM-90-271 back to normal. \_\_\_\_\_
- [3] **VERIFY** 2-SI-90-2 has returned the setpoints of 2-RM-90-272 back to normal. \_\_\_\_\_
- [4] **VERIFY** 2-SI-90-3 has returned the setpoints of 2-RM-90-273 back to normal. \_\_\_\_\_
- [5] **VERIFY** 2-SI-90-4 has returned the setpoints of 2-RM-90-274 back to normal. \_\_\_\_\_
- [6] **NOTIFY** the Unit 2 US/SRO of the test completion and system alignment. \_\_\_\_\_
- [7] **VERIFY** that Post-test calibration of the M&TE used to record quantitative acceptance criteria has been satisfactorily performed, **AND**

**RECORD** the results on Measuring and Test Equipment (M&TE) Log. \_\_\_\_\_

\_\_\_\_\_  
CV

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**7.0 POST PERFORMANCE ACTIVITY (continued)**

- [8] **VERIFY** that Post-test calibration of permanent plant instruments used to record quantitative acceptance criteria has been satisfactorily performed **AND**

**RECORD** the results on Appendix C, Permanent Plant Instrumentation Log.

\_\_\_\_\_  
 CV

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## **8.0 RECORDS**

### **A. QA Records**

Completed Test Package

### **B. Non-QA Records**

None

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**Appendix A  
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**TEST PROCEDURE/INSTRUCTION REFERENCE REVIEW**

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**Date \_\_\_\_\_**

Additional copies of this table may be made as necessary.

<b>PROCEDURE/ INSTRUCTION</b>	<b>REVISION/CHANGES</b>	<b>INITIAL AND DATE. (N/A for no change)</b>
FSAR Section 12.3.4 Section 14.2.12 Table 12.3-4 Table 12.3-5 Table 14.2-1 Sht 33 of 89		
2-TSD-90-6		
2-IMI-90.020		
2-IMI-90.021		
2-SI-90-1		
2-SI-90-2		
2-SI-90-3		
2-SI-90-4		
WBN-VTM-G292-0400		
WBN-VTD-G292-2030 [Later] (review against SQN-VTD-G063-0460)		



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PERMANENT PLANT INSTRUMENTATION LOG

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INSTRUMENT OR INSTRUMENT LOOP # SUBSECTION	CAL DUE DATE	FILLED AND VENTED <sup>1</sup>	PLACED IN SERVICE <sup>1</sup>	USED FOR QUANTITATIV E ACC CRIT		POST-TEST CAL DATE <sup>2</sup>	POST-TEST CALIBRATION ACCEPTABLE <sup>2</sup> INITIAL/DATE
		INIT/DATE	INIT/DATE	YES	NO		
2-LPR-90-2/6.1							
2-LPR-90-59/6.2							
2-LPR-90-60/6.3							
2-LPR-90-61/6.4							
2-LPR-90-271/6.5							
2-LPR-90-272/6.6							
2-LPR-90-273/6.7							
2-LPR-90-274/6.8							

<sup>1</sup> These items may be initialed and dated by personnel performing the task. Instrumentation not required to be filled and vented may be identified as Not Applicable. (N/A)

<sup>2</sup> May be identified as Not Applicable (N/A) if instrument was not used to verify/record quantitative acceptance criteria data.