

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

UNIT II OPERATIONS

02-REQ-006-344-2-11

Revision

1

TITLE: MSIV LEAKAGE CONTROL (MSL)

	<u>SIGNATURE</u>	<u>DATE</u>
PREPARER		<u>8/31/90</u>
TRAINING SUPPORT SUPERVISOR	<u>F.A. ... for J. LeClair</u>	<u>9-5-90</u>
TRAINING AREA SUPERVISOR		<u>9/10/90</u>
PLANT SUPERVISOR/ USER GROUP SUPERVISOR		<u>9/10/90</u>

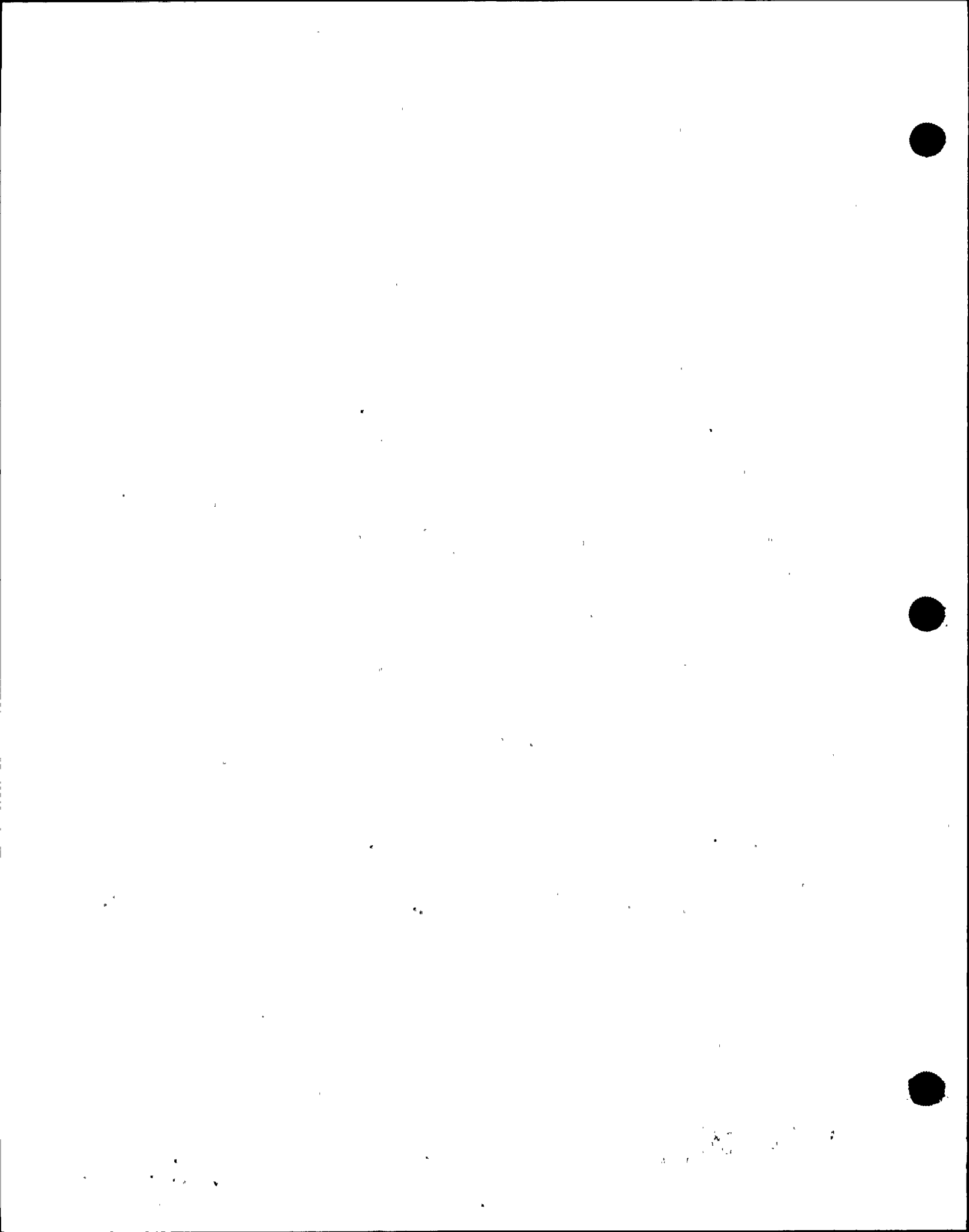
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I. TRAINING DESCRIPTION

- A. Title of Lesson: MSIV Leakage Control (MSL)
- B. Lesson Description: Overview of Emergency Operating Procedure developed to combat radioactive release through MSL's including: Entry conditions, procedure steps and bases.
- C. Estimate of the Duration of the Lesson: 1 hour
- D. Method of Evaluation, Grade Format, and Standard of Evaluation:
 - 1. Weekly open reference written examination on all topics covered during the week with 80% minimum passing grade.
- E. Method and Setting of Instruction: Classroom lecture and facilitated discussion.
- F. Prerequisites:
 - 1. Instructor:
 - a. Qualified for the material being delivered in accordance with NTP-16, Attachment A.
 - b. Qualified in instructional skills as certified by NTP-16.
 - 2. Trainee:
 - a. Qualified for the course in accordance with NTP-11.
- G. References:
 - 1. EOP-MSL Rev. 4

II. REQUIREMENTS

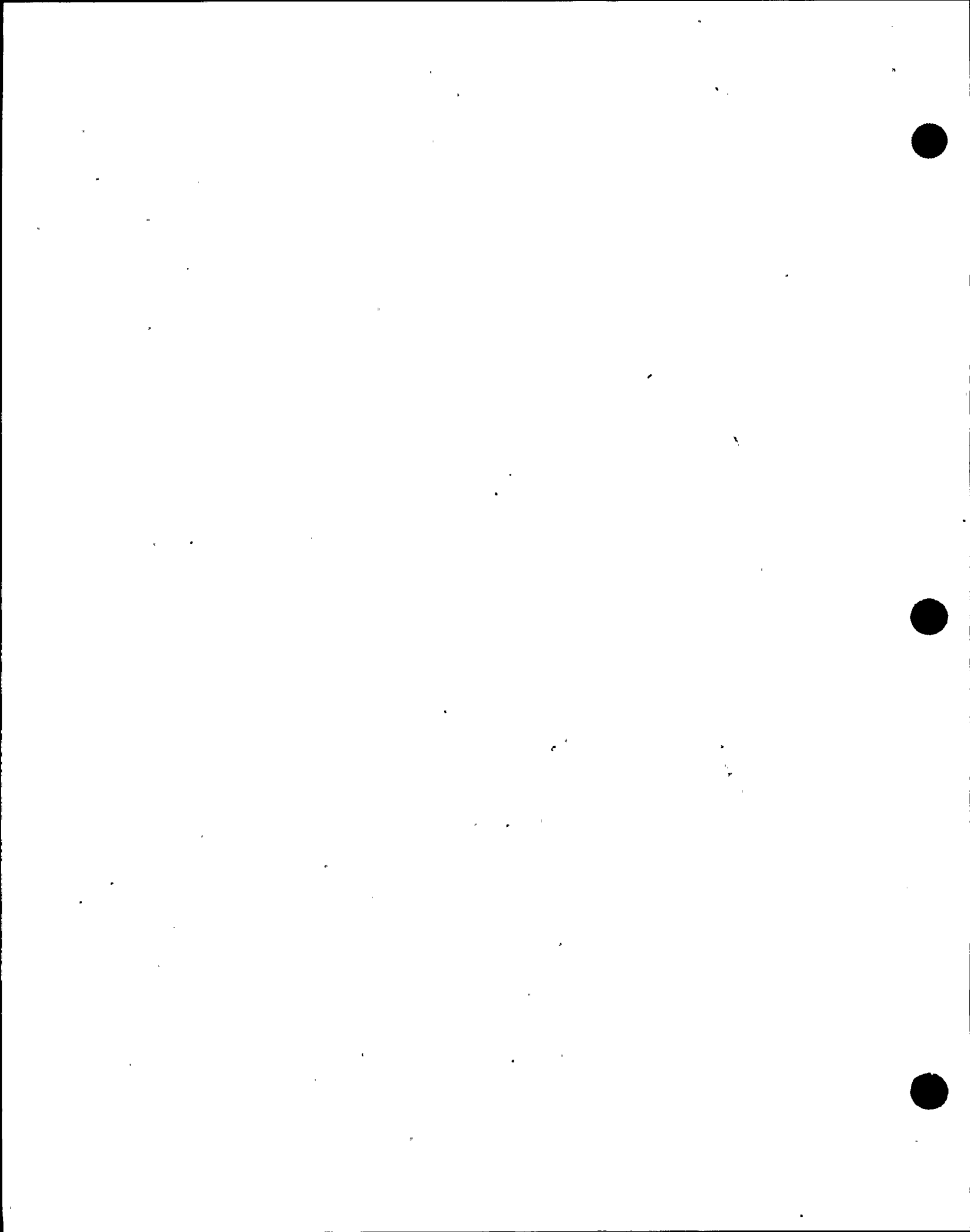
- A. NTP-11

III. TRAINING MATERIALS

- A. Instructor Materials:
 - 1. Transparencies and projector
 - 2. Lesson plan
 - 3. Copy of references (Sec. G)
- B. Trainee Materials:
 - 1. Copy of references (Sec. G)

IV. EXAM AND MASTER ANSWER KEYS

Exams and master answer key(s) filed with the official records.



V. LEARNING OBJECTIVES

A. Terminal Objectives:

Upon completion of this lesson, the operator will gain the required knowledge to:

TO-1.0 Perform actions of EOP-MSL, MSIV Leakage Control.

OR

TO-2.0 (SRO ONLY) Direct the actions of EOP-MSL, MSIV Leakage Control.

B. Enabling Objectives:

Mastery of terminal objectives above will be shown by completion of the following enabling objectives:

EO-1.0 State the purpose of the MSIV Leakage Control Procedure.

EO-2.0 State the entry conditions for the MSIV Leakage Control Procedure.

EO-3.0 Given the procedural step, discuss the technical basis for that step.



I. INTRODUCTION

A. Course Administration

Discuss: Course Evaluations, Training Report

B. Student Learning Objectives

Show: TP #1 (Objectives)

C. Purpose

Discuss: Objectives

Provides actions to control, treat and limit excessive leakage through the MSIVs.

EO-1.0

II. DETAILED DESCRIPTION

A. Entry Conditions

Show: TP #2 (Entry Cond)

EO-2.0

1. Setpoints

Discuss: Entry conditions

- A condition which requires an MSIV isolation

AND

- An MSL High-High Radiation

AND

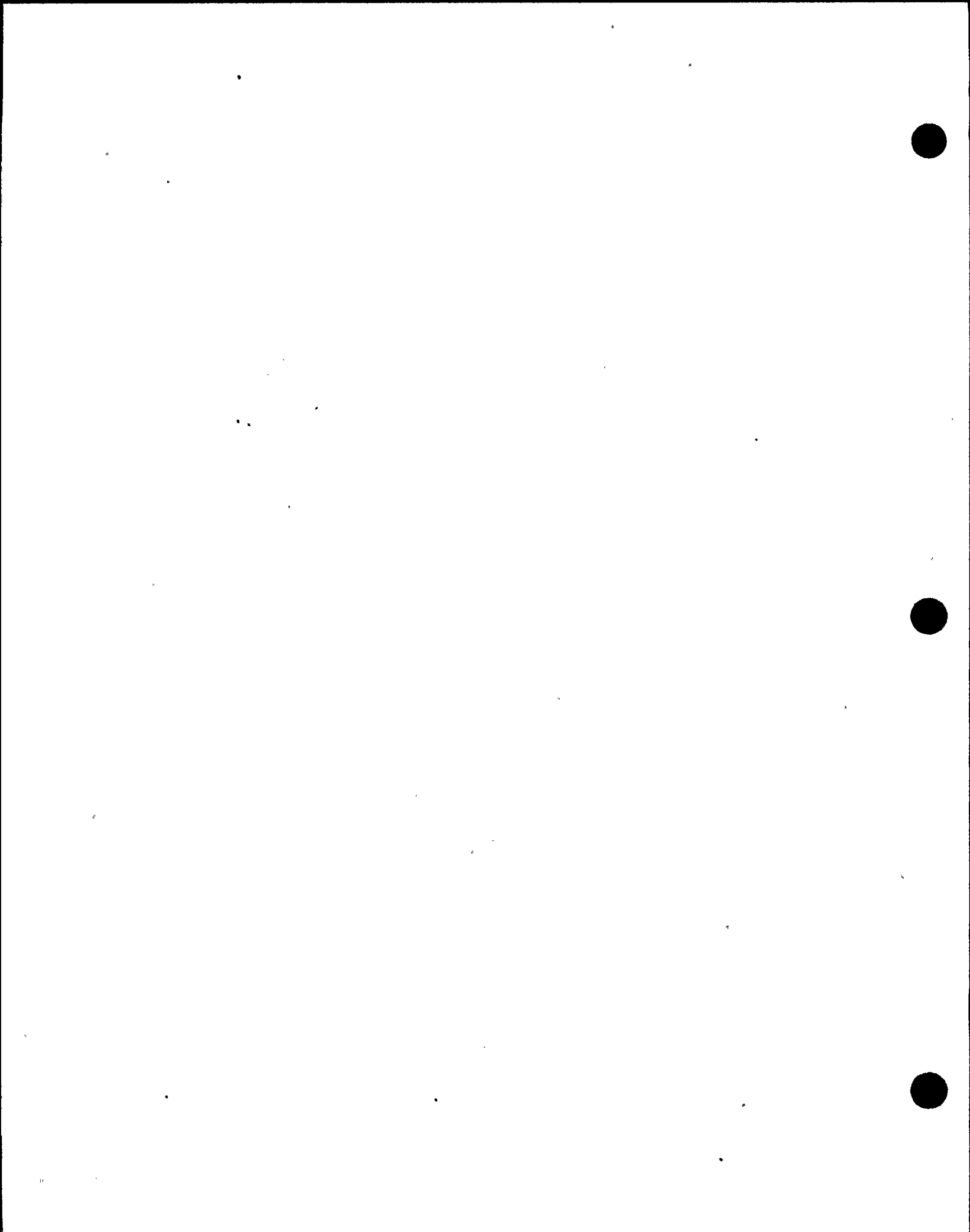
- Any of the following:

- Turbine building HVAC radiation (HVT-RE206) above the Alert level (yellow) or cannot be determined,

OR

- Offgas pretreatment radiation (OFG-RE13A/B) above the Alert level (yellow) or cannot be determined, OR

- Stack or vent GEMs exceed the alarm setpoint (P882).



- | | | |
|---|---|---------------|
| <p>2. Setpoint Bases</p> <p>a. The entry conditions are based on an incident that involves fuel failure and MSIV leakage. The values are the associated Trip (MSL High-High Radiation) or Alert (Alert Status on DRMS) levels.</p> <p>b. Values are below the initial conditions which require action, and are intended to increase operator awareness of specific parameters.</p> | <p>Discuss: Bases</p> | <p>EO-3.0</p> |
| <p>B. Procedural Steps</p> | | |
| <p>1. MSL 1</p> <p><u>IF</u> while executing the following steps, Turbine Building exhaust radiation levels exceed the Turbine Building Release Limit (Figure MSL-1) or cannot be determined, <u>THEN</u> verify the Turbine Building HVAC is operating in the unisolated mode, if available (N2-OP-55).</p> <p>a. Turbine Building HVAC activity is indicative of leakage. MSIVs are a probable source. TB vent in operation assures a monitored release, and keeps activity levels down (lower doses to operators).</p> | <p>Show: TP #3 (Proc. step)</p> <p>Discuss: Step 1</p> <p>Show: TP #4 (MSL-1)</p> <p>Discuss: MSL-1</p> <p>Discuss: Basis</p> | <p>EO-3.0</p> |



2. MSL 2
IF while executing the following steps,
 Control Building HVAC radiation level cannot
 be maintained below 5.92×10^6 uCi/ml,
 (HVC*RE18A-D)
THEN confirm or manually initiate the
 Control Building HVAC pressurization mode
 (N2-OP 53A, Section H.6).
- a. Control Building special filter trains
 minimize radiation dose to Control Room
 operators.
3. MSL 3
 Confirm or initiate an MSIV isolation.
- a. This reinforces entry condition.
4. MSL 4
 Wait until MSL radiation is above the MSL
 Radiation Limit (Figure MSL-2) or cannot be
 determined,
- AND
- Turbine Building HVAC radiation level is
 above the Turbine Building Release Limit
 (Figure MSL-1) or cannot be determined,
- OR
- Show: TP #5 (Proc. Step)
 Discuss: Step 2
- Discuss: Basis
- Discuss: Step 3
 Discuss: Basis
- Show: TP #6 (Proc. step)
 Discuss: Step 4
- EO-3.0
- EO-3.0



Offgas pretreatment radiation level is above the Offgas Release Limit (Figure MSL-3) or cannot be determined,

OR

Offsite radiation release rate exceeds the Emergency Plan "Alert" level (as determined by Chemistry).

THEN operate available SJAE through the Offgas System (EOP-6, ATT 16).

- a. MSL radiation is indicative of high activity in the Coolant/Containment.
- b. Turbine Building activity is indicative of leakage from containment. MSIVs are a probable source.
- c. Offgas activity (with MSIVs shut) is an indication of high activity leakage through the MSIVs.
- d. Offsite release means leakage from containment MSIVs are a possible source.
- e. Processing leakage through the offgas system takes advantage of increased holdup, condensation of steam, filtering of particulates, the charcoal filter absorption and elevated release.

Discuss: Bases

EO-3.0



5. MSL 5

IF the SJAE and Offgas Systems become unavailable,

AND

IF the Turbine Building HVAC radiation level approaches or exceeds the Turbine Building release rate (Figure MSL-1).

THEN

5.1 Shut the following valves

Main Turbine Stop Valves

Main Turbine Control Valves

Main Turbine Bypass Valves

2ARC-MOV5A

2ARC-MOV5B

2ARC-MOV5C

2MSS-AOV92A

2MSS-AOV92B

2TME-AOV121

2ARC-AOV105

2ARC-MOV15A

2ARC-MOV15B

Show: TP #6 (Proc. step)

Discuss: Step 5



- 5.2 Establish Main Turbine Seals (OP-25, Section F.4).
- 5.3 Start all circulating water pumps (OP-10A, Sections E2.0-5.0).
- 5.4 Fill the main steam lines between the MSIVs with water (EOP-6, Att. 7).
- a. With offgas not available, and indication of leakage still present, close off MSLs and condenser, and minimize leakage.
 - b. Closing valves and establishing seals are intended to "bottle up" to the extent possible the MSLs and Condenser to increase hold up time.
 - c. Running circulating water pumps promotes condensation of any steam in the leakage.
 - d. Backfilling the MSIVs provides a water seal on the outboard valve.

Discuss: Bases

EO-3.0



6. MSL 6

IF Off-site radioactivity release rate cannot be maintained below the Emergency Plan "General Emergency" level (as determined by Chemistry) AND A Primary System is discharging into an area outside the primary and secondary containments. THEN Emergency Depressurization is required, enter RPV control and execute concurrently with this procedure.

- a. Depressurizing the RPV reduces the driving head and therefore the flow from the primary systems that are discharging outside the primary and secondary containments.
- b. Entering EOP-RL, RP and RQ provide the mechanism by which the Emergency Depressurization procedure is reached.

Show: TP #7 (Proc. step)

Discuss: Step 6

EO-3.0

-III. WRAP-UP

This procedure provides the action necessary to control, treat and limit excessive leakage through the MSIV's.

