

NUCLEAR POWER BUSINESS UNIT
OPERATIONS PERIODIC CHECKS

PC 24
NNSR
Revision 43
January 25, 1997

CONTAINMENT INSPECTION CHECKLIST
(MONTHLY)
UNIT 2

RECORD

PROCEDURE VERIFIED CURRENT AND CHECKED FOR TEMPORARY CHANGES IF FIELD
COPIES REQUIRED, USE PBF-0026; IAW NP 1.2.4 AND DO NOT COMPLETE THIS BLOCK.

BY: _____ DATE: _____

Date _____

REVIEWED DISTRIBUTION

Power Level _____

Inspection By 1. _____
2. _____
DSS _____
Mgr. - OPS _____
Mgr. - Maint. _____
Mgr. - I&C _____
*Mech. Plt. Eng. _____
OPS Office File _____

*Trend SG snubber reservoir level on Form PBF-2024.

1.0 PURPOSE

The purpose of this inspection is to locally observe accessible equipment for any of the following abnormalities.

- 1.1 Primary system or process system leakage.
- 1.2 Excessive noise or vibration of equipment.
- 1.3 Proper and adequate condition of equipment for extended service.
- 1.4 Undesirable articles/conditions which could jeopardize the ability of the recirculation phase in accident conditions.
- 1.5 Any other abnormal or unsafe conditions.

2.0 REFERENCES

IR 96-006, NRC Inspection Report; NRC Commitment for Operations procedures PMT/QC reviews.

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3.0 PRECAUTIONS AND LIMITATIONS

- 3.1 A minimum of two people in accordance with the two-man rule when a unit is greater than 350°F, at least one of whom will be a supervisor, shall conduct the containment inspection per this periodic check (PC).
- 3.2 Remain clear of the reactor cavity edge at all times during power operation. Do not use the walkway at the south end of the reactor cavity because of extremely high neutron exposures.
- 3.3 Reactor coolant pump compartment inspections should only involve the upper motor platform and be completed as rapidly as possible due to the high radiation levels when at power. Inspections below that level are only permitted as authorized by the radiation work permit.
- 3.4 Containment entry is made under the guidelines of HP 2.12, "Containment Entry/Exit Procedure."

4.0 INITIAL CONDITIONS

4.1 The Following Should Be Assembled for the Inspection:

INITIALS

- 4.1.1 Flashlight and inspection mirror. _____
- 4.1.2 Key to Unit 2 containment and a high radiation area padlock key for regenerative heat exchanger area door. _____
- 4.1.3 A plastic bag with clean rags to clean up oil and water or other items in need of wipeup. _____
- 4.1.4 Instructions concerning abnormalities and/or special checks to be made per the Operations manager. _____
- 4.1.5 Two 500 ml sample bottles labeled for 2T-34A&B samples, a small plastic pail, and 11/16" wrenches for 3/8" Swagelok plugs. _____
- 4.1.6 One-liter poly bottle for RCP oil collecting tank drainage. _____
- 4.1.7 Portable radio. _____
- 4.1.8 The Still Video Camera from HP for visual documentation of any problems noted. _____

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- | | | |
|-------|------------------------------------------------------------------------------------|-------|
| 4.1.9 | One bottle of snoop for leak check of nitrogen bottle connection. | _____ |
| 4.2 | An RWP is available. | _____ |
| 4.3 | Open 2SW-2907 or 2SW-2908 at least 30 minutes prior to and during this inspection. | _____ |
- 5.0 GENERAL INSTRUCTIONS
- 5.1 Hydraulic snubbers should be checked for indications of oil leakage directly below the snubber and by oil level when accessible. If snubber leakage is detected, it must be noted for priority attention. DO NOT remove sightglass metal covers.
- 5.2 Refill snubbers with the following types of oil:
- | | |
|----------------------|---------------------|
| Grinnell snubbers | GE-SF-1154 (Blue) |
| Ankor Holth snubbers | GE-SF-1147 (Yellow) |
- 5.3 During periods of normal operation where the containment is unoccupied, the lighting will be secured except for emergency lights.
- 5.4 Indicate the condition of a valve leakoff by circling the applicable status. When a valve leakoff is recorded as anything other than ambient, an accompanying statement must include information such as the distance from the valve before the tubing cools, the amount of packing gland adjustment remaining, etc., to aid in the subsequent evaluation of the condition.
- 5.5 When taking air flow readings on the accident fan cooler units, zero the manometers prior to taking differential pressure readings. It may be necessary to add oil to the manometer (Miriam red oil).
- 5.6 All operable containment cooling fans should be operating during the containment inspection so they can be visually and audibly surveyed. This includes both normal and accident fans. Individual fan units may be left secured until they are inspected. This will minimize problems with the RCP seals.
- 5.7 Work orders must be written and referenced in the PC so that subsequent surveillance may be performed on any abnormality noted during the inspection. The white work order initiation tag should not be used in containment.

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- 5.8 The general comments for an area should include a statement concerning leaks, safety hazards, fire hazards, the condition of fire hose stations and cleanliness, if abnormal conditions exist
- 5.9 Review the last inspection to identify previous deficient areas and to determine if corrective actions have been accomplished or are outstanding.
- 5.10 Record the final flow setting and throttle valve position of the fan motor coolers during the previous inspection for comparison and/or compensation during this inspection.

NOTE: 2W-1A1, 2W-1B1, 2W-1C1, and 2W-1D1 are to be flushed every inspection.

2W-1A1	Valve position _____	Flow _____
2W-1B1	Valve position _____	Flow _____
2W-1C1	Valve position _____	Flow _____
2W-1D1	Valve position _____	Flow _____

- 5.11 The El. 66' personnel hatch is used for normal entry and exit of the containment. The El. 26' personnel hatch is available for emergency exit whenever personnel are in containment.
- 5.12 The Still Video Camera shall be bagged and left in the El. 66' personnel hatch during the containment inspection. Anytime that the use of the camera is warranted, it shall be retrieved and used appropriately. The pictures are intended to give a better description of the concern or defect so that corrective action may be planned without additional containment entry for work plan information. Camera uses include but are not limited to: Wet boric acid leaks, equipment problems, WOs, safety hazards or any abnormal conditions.

6.0 PROCEDURE

INITIALS

6.1 El. 66' Personnel Hatch

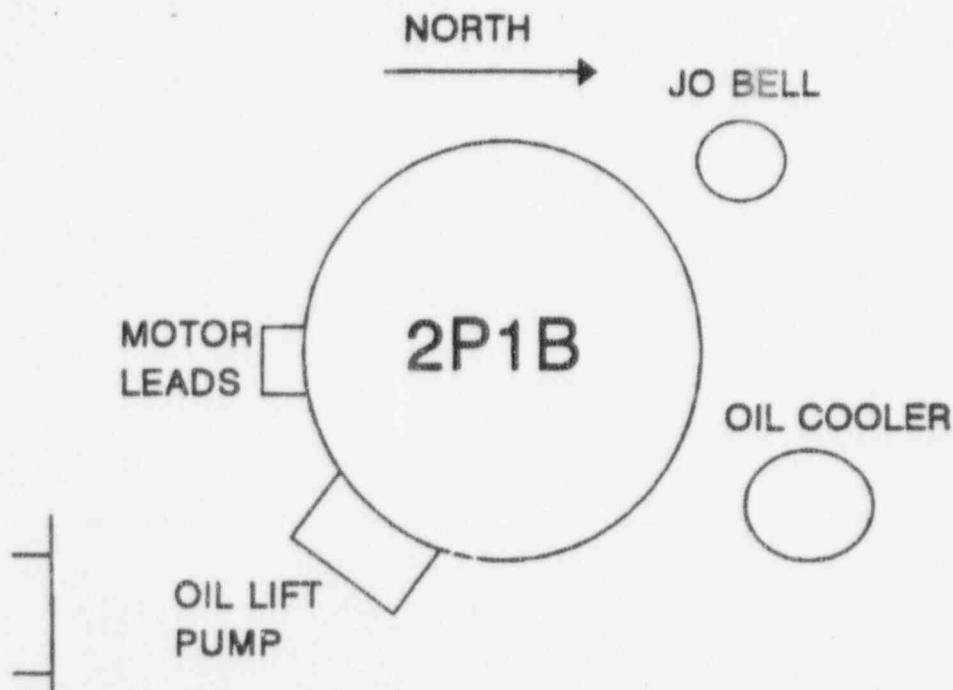
CAUTION THE OUTER THIRD DOOR MAY NOT BE LEFT IN AN UNLOCKED, UNATTENDED POSITION UNLESS A RED FLASHING LIGHT IS INSTALLED ANY TIME THE CONTAINMENT IS POSTED "HIGH RADIATION AREA."

- 6.1.1 Notify control of the containment entry for inspection. _____

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- | | | |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 6.1.2 | Verify that the Control Room receives the containment door alarms during entry. | _____ |
| 6.1.3 | Verify that the outer third door locks upon entry. | _____ |
| 6.2 | <u>El. 66'</u> | |
| 6.2.1 | Time entered. _____ | _____ |
| 6.2.2 | Turn on containment lights, breaker operators on 21L, 23L and 88L are pointed yellow along with asterisks on Master Data Book lamination inside lighting panels. | _____ |
| 6.2.3 | 2HX-1B steam generator hydraulic snubber reservoir pressure _____ psig. | _____ |
| 6.2.4 | RCP 2P-1B compartment | |



Check motor for oil leakage and show location on sketch. The visible oil should be wiped up as much as possible during each inspection and so noted.

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6.2.5 Pressurizer compartment

a. 2RC-431A leakoff (hot, warm, ambient) _____

b. 2RC-431B leakoff (hot, warm, ambient) _____

c. Spray valve bellows pressure

1. 2RC-431A _____ psig _____

2. 2RC-431B _____ psig _____

d. Snubber leakage evidence

HS-29, Safety Valve Discharge (horizontal) _____

HS-30, Safety Valve Discharge (horizontal) _____

HS-2501R-49, PORV (vertical) _____

HS-2501R-21A, PORV (vertical) _____

HS-2501R-15, (horizontal) _____

HS-2501R-43, (horizontal) _____

HS-601R-37, PORV Header Downstream of PZR Safety
Valves Below Walking Deck at El. 2' _____

6.2.6 Containment Cooling Fans 2W-1B1 and 2W-1B2

a. Fans running _____

b. Vibration _____ Noise _____

c. Cooler air flow D/P 2DPI-4833 _____ " H₂O
Normal at 0.35 to 1.4" H₂O. _____

d. Motor cooler service water flow

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***CAUTION*:** DO NOT EXCEED 50 GPM FLOW TO THE MOTOR COOLER AT ANY TIME. OVERRANGING MAY AFFECT CALIBRATION.

NOTE 1: *If the as-found flow is between 20 and 40 gpm, and the FI null is <5 and not on the low peg, the final throttle valve position should be the same as the as-found throttle valve position. If the as-found flow is <20 gpm, set the final flow at approximately 40 gpm.*

NOTE 2: *If the FI null is >5 gpm or on the low peg, vent the FI sensing lines; if null is still >5 gpm or on the low peg, set the throttle valve for 3/4 turn open and WO the FI. If FI null, after venting, is <5 gpm and not on the low peg, the final throttle valve position should be the same as the as-found throttle valve position.*

NOTE 3: *Service water flow should be maintained >10 gpm under normal and accident conditions.*

As-found flow _____ gpm

As-found throttle valve position _____ turns open

Indicated FI null at zero flow _____ gpm

Flush cooling coil at ≤50 gpm for two minutes

Final flow setting _____ gpm

Final throttle valve position _____ turns open _____

6.2.7 Record spray valve nitrogen bottle pressure. If <500 psig, then replace the spray valve nitrogen bottle with one from the PORV system. Remove the low pressure bottle from containment and note in the remarks section that a full cylinder should be installed at the PORV operator during the next inspection.

2RC-431A&B _____ psig _____

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PMT

- 6.2.8 If the nitrogen bottle was replaced, then leak check the nitrogen bottle connections and ensure zero leakage _____
- 6.2.9 2HX-1B steam generator hydraulic snubber reservoir level (1/2-3/4) _____ level _____
- 6.2.10 2HX-1A steam generator hydraulic snubber reservoir level (1/2-3/4) _____ level _____
- 6.2.11 2HX-1A steam generator hydraulic snubber reservoir pressure _____ psig _____
- 6.2.12 Auxiliary feed line snubber, HS-21. _____
- 6.2.13 Containment Cooling Fans 2W-1A1 and 2W-1A2. _____
- a. Fans running _____
- b. Vibration _____ Noise _____
- c. Cooler air flow D/P 2DPI-4832 _____ " H₂O
Normal at 0.35 to 1.4" H₂O. _____
- d. Motor cooler service water flow _____

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INITIALS

CAUTION DO NOT EXCEED 50 GPM FLOW TO
THE MOTOR COOLER AT ANY
TIME. OVERRANGING MAY
AFFECT CALIBRATION.

*NOTE 1: If the as-found flow is between 20 and 40 gpm,
and the FI null is <5, and not on the low peg, the
final throttle valve position should be the same as
the as-found throttle valve position. If the as-
found flow is <20 gpm, set the final flow at
approximately 40 gpm.*

*NOTE 2: If the FI null is >5 gpm or on the low peg, vent the
FI sensing lines, if null is still >5 gpm or on the
low peg, set the throttle valve for 3/4 turn open
and WO the FI. If FI null, after venting, is <5
gpm and not on the low peg, the final throttle
valve position should be the same as the as-found
throttle valve position.*

*NOTE 3: Service water flow should be maintained >10 gpm
under normal and accident conditions.*

As-found flow _____ gpm

As-found throttle valve position _____ turns open

Indicated FI null at zero flow _____ gpm

Flush cooling coil at ≤50 gpm for two minutes

Final flow setting _____ gpm

Final throttle valve position _____ turns open _____

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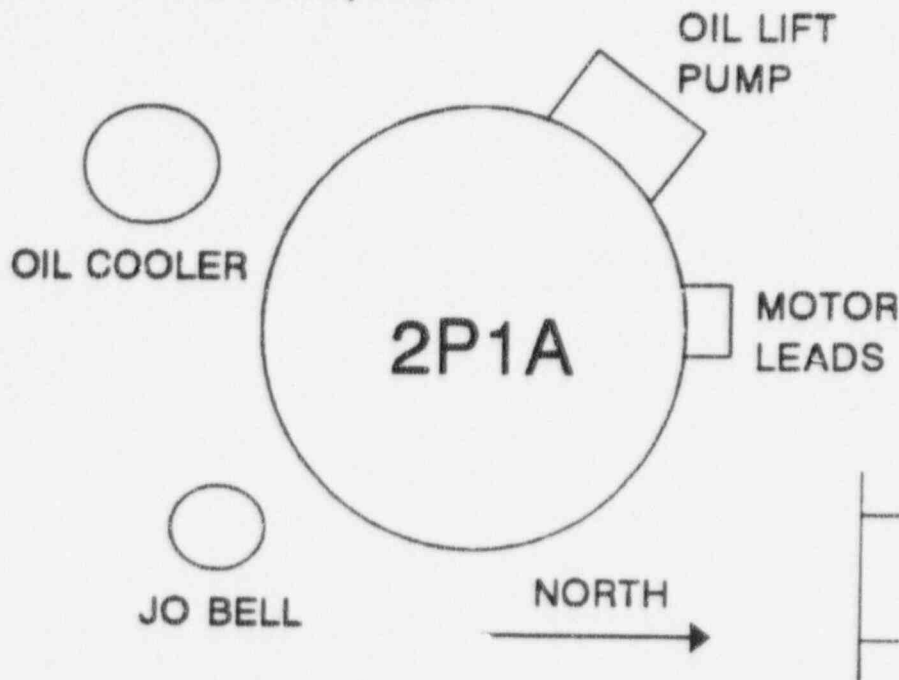
INITIALS

6.2.14 Incore detector drive helium gas bottles
(>300 psig) _____ psig

a. Helium manifold pressure (4-6 psig)
_____ psig

b. Flow meter reading (≥ 60 ml/min, but not
pegged) _____ ml/min

6.2.15 RCP 2P-1A compartment



Check motor for oil leakage and show location on sketch. The visible oil should be wiped up as much as possible during each inspection and so noted.

6.2.16 General Condition, El. 66'

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6.3 El. 46'

6.3.1 Seal table _____

6.3.2 Loop pressure; record maximum and reset.
_____ psig

6.3.3 Containment Cooling Fans 2W-1C1 and 2W-1C2

a. Fans running _____

b. Vibration _____ Noise _____

c. Cooler air flow D/P 2DPI-4834 _____ " H₂O
Normal at 0.35 to 1.4" H₂O.

d. Motor cooler service water flow _____

***CAUTION*:** DO NOT EXCEED 50 GPM FLOW TO
THE MOTOR COOLER AT ANY
TIME. OVERRANGING MAY
AFFECT CALIBRATION.

*NOTE 1: If the as-found flow is between 20 and 40 gpm,
and the FI null is <5, and not on the low peg, the
final throttle valve position should be the same as
the as-found throttle valve position. If the as-
found flow is <20 gpm, set the final flow at
approximately 40 gpm.*

*NOTE 2: If the FI null is >5 gpm or on the low peg, vent the
FI sensing lines; if null is still >5 gpm or on the
low peg, set the throttle valve for 3/4 turn open
and WO the FI. If FI null, after venting, is <5
gpm and not on the low peg, the final throttle
valve position should be the same as the as-found
throttle valve position.*

*NOTE 3: Service water flow should be maintained >10 gpm
under normal and accident conditions.*

As-found flow _____ gpm

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	As-found throttle valve position	_____	turns open	
	Indicated FI null at zero flow	_____	gpm	
	Flush cooling coil at ≤ 50 gpm for two minutes			
	Final flow setting	_____	gpm	
	Final throttle valve position	_____	turns open	_____
6.3.4	Check PRT relief lines. Note any warm lines or leaking reliefs.			
	_____			_____
	_____			_____
6.3.5	Snubber leakage evidence on HS-601R-95B, discharge for pressurizer safety and PORV header (vertical).			_____
6.3.6	2RH-720 leakoff (hot, warm, ambient)			_____
6.3.7	2SI-852A leakoff (hot, warm, ambient)			_____
6.3.8	Snubber leakage evidence (HS-23 behind 2SI-853A)			_____
6.3.9	General Condition of El. 46'			_____
	_____			_____
	_____			_____
6.3.10	Check Snubber HS-26 in east stairwell at Landing El. 36'.			_____
6.4	<u>El. 21'</u>			_____
6.4.1	2SI-852B leakoff (hot, warm, ambient)			_____
6.4.2	RCP 2P-1B No. 3 seal leakage	_____	dpm	_____
6.4.3	2CV-285 leakoff (hot, warm, ambient)			_____

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6.4.4	Loop B RTD bypass manifold flow 2FIC-459 _____ gpm	_____
<i>NOTE: Notify DSS if 2FIC-610 is <25 gpm.</i>		
6.4.5	Thermal barrier component manifold flow 2FIC-610 (Normal 25-40 gpm) _____ gpm	_____
6.4.6	Lower reactor coolant pump motor bearing component cooling flow (Normal 10-12 gpm) 2FI-611 _____ gpm	_____
6.4.7	Regenerative heat exchanger compartment	
	a. 2CV-200A, B, C leakoff (hot, warm, ambient)	_____
	b. 2CV-1298 leakoff (hot, warm, ambient)	_____
	c. HS-25 snubber, overhead above 2CV-200A. No leakage evidenced by oil on floor.	_____
6.4.8	Containment Cooling Fans 2W-1D1 and 2W-1D2	
	a. Fans running	_____
	b. Vibration _____ Noise _____	_____
	c. Cooler air flow D/P 2DPI-4835 _____ " H ₂ O Normal at 0.35 to 1.4" H ₂ O.	_____
	d. Motor cooler service water flow	

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***CAUTION*:** DO NOT EXCEED 50 GPM FLOW TO THE MOTOR COOLER AT ANY TIME. OVERRANGING MAY AFFECT CALIBRATION.

NOTE 1: *If the as-found flow is between 20 and 40 gpm, and the FI null is <5, and not on the low peg, the final throttle valve position should be the same as the as-found throttle valve position. If the as-found flow is <20 gpm, set the final flow at approximately 40 gpm.*

NOTE 2: *If the FI null is >5 gpm or on the low peg, vent the FI sensing lines; if null is still >5 gpm or on the low peg, set the throttle valve for 3/4 turn open and WO the FI. If FI null, after venting, is <5 gpm and not on the low peg, the final throttle valve position should be the same as the as-found throttle valve position.*

NOTE 3: *Service water flow should be maintained >10 gpm under normal and accident conditions.*

As-found flow _____ gpm

As-found throttle valve position _____ turns open

Indicated FI null at zero flow _____ gpm

Flush cooling coil at ≤50 gpm for two minutes

Final flow setting _____ gpm

Final throttle valve position _____ turns open

6.4.9 SI check valve back leakage from RCS:

a. 2SI-845A (hot, warm, ambient) _____

b. 2SI-845B (hot, warm, ambient) _____

c. 2SI-845C (hot, warm, ambient) _____

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d.	2SI-845D (hot, warm, ambient)	_____
e.	2SI-845E (hot, warm, ambient)	_____
f.	2SI-845F (hot, warm, ambient)	_____
6.4.10	2SI-841B leakoff (hot, warm, ambient)	_____
6.4.11	2SI-841A leakoff (hot, warm, ambient)	_____
6.4.12	2RH-701 leakoff (hot, warm, ambient)	_____
6.4.13	Draw a 500 ml representative sample from Accumulator A.	_____
6.4.14	Draw a 500 ml representative sample from Accumulator B.	_____
6.4.15	A loop RTD bypass manifold flow 2FIC-458 _____ gpm	_____
NOTE: Notify DSS if 2FI-614 is <25 gpm.		
6.4.16	Thermal barrier component cooling flow (Normal 25-40 gpm) 2FI-614 _____ gpm	_____
6.4.17	Lower RCP motor bearing component cooling flow (Normal 10-12 gpm) 2FI-615 _____ gpm	_____
6.4.18	RCP 2P-1A No. 3 seal leakage. _____ dpm	_____
6.4.19	Check Snubber HS-24 (overhead near keyway entrance).	_____
6.4.20	Check Sump A condition.	_____
	_____	_____
	_____	_____

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6.4.21 General Condition, El. 21'

6.5 El. 8'

6.5.1 Check the area under Loop A.

6.5.2 Check the "A" RCP oil catch tank drain for oil.

6.5.3 Check Sump B inner and outer screens free from debris and no structural damage or abnormal corrosion present.

6.5.4 Check the area under Loop B.

6.5.5 Check the "B" RCP oil catch tank drain for oil.

6.5.6 Check the RCDT temperature and, if hot, investigate the two-inch loop area leakoff/seal outlet lines as required

Additional leakoff discrimination is available under Loop B south for 2RH-720, 2SI-852A and 2CV-427

6.5.7 General Condition, El. 8'

7.0 GENERAL UPON EXITING

7.1 Ensure that the crane power is off.

7.2 Turn off the containment lights as marked on 21L, 23L, and 88L.

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- 7.3 Check the personnel air lock condition (rust, moisture) and note any door/valve interlock problems.

- 7.4 All equipment used for the inspection must be properly stored or removed from containment per HP 3.2.2.

NOTE: *If Operations is not the last group exiting the containment (i.e., Maintenance, I&C), then ensure HP personnel assume responsibility for the lead doors and N/A Step 7.5.2.*

7.5 Containment Exit

- 7.5.1 Inner door and vent properly closed.

/

- 7.5.2 Lead door properly closed.

/

- 7.5.3 Still Camera removed from personnel hatch.

- 7.5.4 Outer hatch door and vent properly closed.

/

- 7.5.5 Outer (third) door locked upon exit.

/

- 7.6 Inform the Control Room that the inspection is complete and that the containment ventilation coolers may be returned to normal.

- 7.7 Containment exit time.

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- 7.8 Return the containment key, the high radiation key and Still Video Camera to the Health Physics station. _____
- 7.9 Notify the DSS of all discrepancies noted during this inspection. For safety-related equipment, operability must be considered. (i.e., snubbers, containment fan cooler units, etc.) _____

Record any WOs written as a result of the inspection.

Remarks: