

NRC

AP 1001

Three Mile Island Nuclear Station
Special Operating Procedure

SIDE 1

Form 1001-8

SOP No. 2-50 Rev 7
(From SOP Log Index)

NOTE: Instructions and guidelines in AP 1001 must be followed when completing this form.

Unit No. 2

Date 4/16/79

1. Title Test of Alternate PZR Level Indication

2. Purpose (include purpose of SOP)
To compare PZR level calculated from alternate indicators with installed PZR level indicators.

3. Attach procedure to this form written according to the following format.

- A. Limitations and Precautions
 - 1. Nuclear Safety
 - 2. Environmental Safety
 - 3. Personnel Safety
 - 4. Equipment Protection
- B. Prerequisites
- C. Procedure

Attached

Generated by C P DeHate Date 4/16/79

5. Duration of SOP - Shall be no longer than 90 days from the effective date of the SOP or (a) or (b) below - whichever occurs first.

- (a) SOP will be cancelled by incorporation into existing or new permanent procedure submitted by N/A
- (b) SOP is not valid after _____
(fill in circumstances which will result in SOP being cancelled)

- 6. (a) Is the procedure Nuclear Safety Related?
If "yes", complete Nuclear Safety Evaluation. (Side 2 of this form) Yes No
- (b) Does the procedure affect Environmental Protection?
If "yes", complete Environmental Evaluation. (Side 3 of this form) Yes No
- (c) Does the procedure affect radiation exposure to personnel? Yes No

NOTE: If all answers are "no", the change may be approved by the Shift Supervisor. If any questions are answered "yes", the change must be approved by the Unit Superintendent.

7. Review and Approval

B&W <u>Sturman</u> Approved - Shift Supervisor	<u>[Signature]</u>
NRC <u>[Signature]</u> 4/16/79	Reviewed - List members of PORC contacted <u>R. Warren</u> 4/16/79 <input type="checkbox"/>
AARA <u>[Signature]</u> 4/16/79 1000	<u>R. W. Bernal</u> 4-16-79 <input type="checkbox"/>
Approved - Unit Superintendent	<u>[Signature]</u> 4-16-79 <input type="checkbox"/>

8. SOP is Cancelled

Shift Supervisor/Shift Foreman _____ Date 130 312

TEST OF ALTERNATE PRESSURIZER LEVEL INDICATION

1.0

PURPOSE

To compare alternate pwr level indications with installed pwr level indication.

2.0

LIMITS AND PRECAUTIONS

2.1

Enter high radiation areas only when necessary to read pressure indications. Proceed to lower radiation areas when not taking data.

2.2

If radiation levels in the general area exceed 1 rem/hr., remote monitoring equipment (e.g. television cameras) should be used for routine readings.

2.3

Communications with the control room (CR) shall be established such that the data is taken when CA-V1 and CA-V3 are opened and the gage readings have stabilized.

2.4

A RCS sample cannot be taken with this procedure in effect.

2.5

Installed pwr level indication must be $> 117.5''$

2.6

Test gage and pressure transmitter isolation valves SNV-T5 and SNV-T4 respectively, are to be SHUT when hydro pump is operating. If SNV-T3 is shut and the hydro pump is not operating, SNV-T4 and/or SNV-T5 may be opened to obtain readings.

3.0

PREREQUISITES

3.1

A hydro pump must be available for use in filling the pwr steam and water space sample lines. The pump must have the following attached equipment or characteristics:

3.1.1

Adjustable stroke for flow control.

3.1.2

Calibrated pressure gage and relief valve per attached dwg.

3.1.3

DI water source.

3.2

During conductance of test, attempt to minimize variations in pwr level and pressure.

3.3

Attach the hydro pump in 3.1 as follows:

3.3.1

Check shut the following valves:

CA-V1 _____	CA-V10 _____
CA-V3 _____	SN-V-T3 _____
CA-V6 _____	SN-V-T1 _____
	SN-V-T2 _____

3.3.2 Connect the high pressure hydro pump in 3.1 to the connection downstream of SN-V-T3. See attachment 1 for test rig installation.

CAUTION: Place poly bottle on discharge of relief valve.

3.4 Trend pZR level (LT2 or 3) and RCS Pressure (RC-3A-PT4)

3.5 Perform the following valve lineup:

OPEN: SN-V181 _____	SHUT: SN-V214 _____
SN-V1 _____	SN-V215 _____
SN-V4 _____	SN-V2 _____
SN-V101 _____	SN-V3 _____
SN-VT2 _____	SN-V5 _____
SN-VT1 _____	SN-V109 _____
SN-VT3 _____	SN-V6 _____
	SN-V8 _____
	SN-V161 _____
	SN-V174 _____
	SN-V10 _____
	SN-V110 _____
	SNV-T5 _____
	SNV-T4 _____

3.6 Check the temporary piping/fittings for leakage by starting the hydro pump and raise pump discharge pressure to 50 psig greater than the higher RCS pressure reading in the C.R.

Stop pump, check all new piping/fittings for leakage.

Slowly open SNV-T5 and check fittings on Heise gage for leaks.

Close SNV-T5. Slowly open SNV-T4 and check fittings on the pressure transmitter for leaks. Shut SNV-T4.

CAUTION: DO NOT EXCEED 1500 PSIG AS READ ON THE HYDRO PUMP TEST GAGE OR ON THE HEISE GAGE.

3.7 The operator recording Heise gage pressure & time should synchronize his watch with the plant computer.

4.0 PROCEDURE

(for sample line fill and test) (See Section 5.0 for routine pZR level measure.)

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This section shall be followed if the p2r sample legs have not been filled in 24 hours, or if the p2r has been vented since last sample leg fill.

4.1 Fill the p2r steam sample line.

4.1.1 Check shut CA-V3, CA-V6, SN-VT3, SN-VT4, SN-VT5. Check open SN-VT1 and SN-VT2.

4.1.2 Open CA-V1 and CA-V10; slowly crack open SN-VT5 and record Heise gage pressure _____ psig.

Shut SNV-T5 after taking readings.

Slowly crack open SN-VT4 and record pressure transmitter pressure _____ psig. Shut SN-VT4 after taking readings.

CAUTION: Test gage and pressure transmitter isolation valves SNV-T5 and SNV-T4, respectively, are to be SHUT when hydro pump is operating. If SNV-T3 is shut and if the hydro pump is not operating, SNV-T4 and/or SNV-T5 may be opened to obtain readings.

4.1.3 Open SN-VT3 and start the hydro pump; monitor for the level of the supply tank to determine the rate of adding water to the reference leg. DO NOT exceed 1/2 gal/min. and charge for ten (10) minutes while continuously monitoring pressure on the pump discharge pressure gage.

4.1.4 Stop the pump, shut SN-VT3, slowly crack open SN-VT5 and SN-VT4, and record the pressure on the Heise gage and the pressure transmitters & the time. Shut SN-VT4 and SN-VT5 after taking readings. Open SN-VT3.

4.1.5 Measure and record the DI water temperature used to fill the steam sample line. _____ °F

4.1.6 Restart hydro pump at same stroke setting for ten (10) minutes. Stop the pump, shut SN-VT3, crack open SN-VT4 and SN-VT5 and record the pressure on the Heise gage, and the pressure transmitter, and the time. Shut SN-VT4 and SN-VT5 after taking readings. Open SN-VT3.

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- 4.1.7 Repeat step 4.1.6 until no significant change is observed in the Heise gage and press transmitter readings following stopping the pump.
- 4.1.8 Shut CA-V1 and CA-V10.
- 4.2 Fill the p2r water sample line.
- 4.2.1 Check shut CA-V6 and CA-V1.
- 4.2.2 Open CA-V3 and CA-V10, shut SN-VT3, ^{slowly Crack} open SN-VT5 and SN-VT4 and record Heise gage pressure _____ psig and pressure transmitter pressure _____ psig, Shut SN-VT4 and SN-VT5 after taking readings. Open SN-VT3.
- 4.2.3 Start the hydro pump and adjust the stroke to 1/4 gpm and charge for ten (10) minutes with DI water into the p2r water space while continuously monitoring pressure on the pump discharge pressure gage.
- 4.2.4 Stop the pump, shut SN-VT3, ^{slowly} crack open SN-VT5 and SN-VT4 and record the pressure on the Heise gage, and the pressure transmitter and the time. Shut SN-VT4 and SN-VT5 after taking readings. Open SN-VT3.
- 4.2.5 Restart hydro pump at same stroke setting for ten (10) minutes. Stop pump, shut SN-VT3. Crack open SN-VT4 and SN-VT5 and record the pressure on the Heise gage and the pressure transmitter, and the time. Shut SN-VT4 and SN-VT5 after taking readings. Open SN-VT3.
- 4.2.6 Repeat step 4.2.5 until no significant change is observed in the Heise gage and pressure transmitter readings following stopping the pump.
- 4.2.7 Shut CA-V3 and CA-V10, and SN-VT3.
- 4.3 Calculate P2R level by using Attachment 01 and the Dp determined in steps 4.1 and 4.2

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NOTE: that the stabilized pressure from the PZR steam space
(determined in step 4 should be the higher pressure)

4.4 Compare PZR level calculated in step 4.3 with C.R. indication.

5.0 PROCEDURE (for routine PZR level measurement).

NOTE: If PZR steam and water space sample lines have not been filled using step 4.0 within 24 hours, or the PZR has been vented since last sample leg fill, or where it is felt that the reference leg has evaporated, step 4.0 shall be followed.

5.1 Verify that Section 2.0 and 3.0 have been completed, and that Section 4.0 has been completed within the previous 24 hours.

5.2 Verify the valve lineup in step 3.5, except that valve SN-V-T3 is shut and any discharge valves on hydro pump are shut.

5.3 Trend PZR level (LT2 or 3) and RCS pressure (RC-3A-PT4) on the computer for 10 minutes before starting data taking. Continue trending during PZR level measurement.

5.4 Open CA-V1 and CA-V10, slowly crack open SN-VT4 and SN-VT5 and allow Heise gage pressure and pressure transmitter pressure to stabilize.

CAUTION: Minimize stay time while taking gage readings.
Operator should remain outside the area until necessary to read gage or manipulate valves.

5.5 Record Heise gage and pressure transmitter pressure readings and time, and notify CR of same. Shut SN-VT4 and SN-VT5.

	_____	psig	_____	psig
Heise	_____	time	_____	time Press. Transmitter

5.6 Shut CA-V1.

5.7 Open CA-V3, slowly crack open SN-VT4 and SN-VT5 and allow Heise gage and pressure transmitter pressure to stabilize.

5.8 Record Heise gage and pressure transmitter pressure reading and time,
and notify CR of same. Shut SN-VT4 and SN-VT5.

	_____	psig		_____	psig
Heise	_____	time	Pressure Transmitter	_____	time

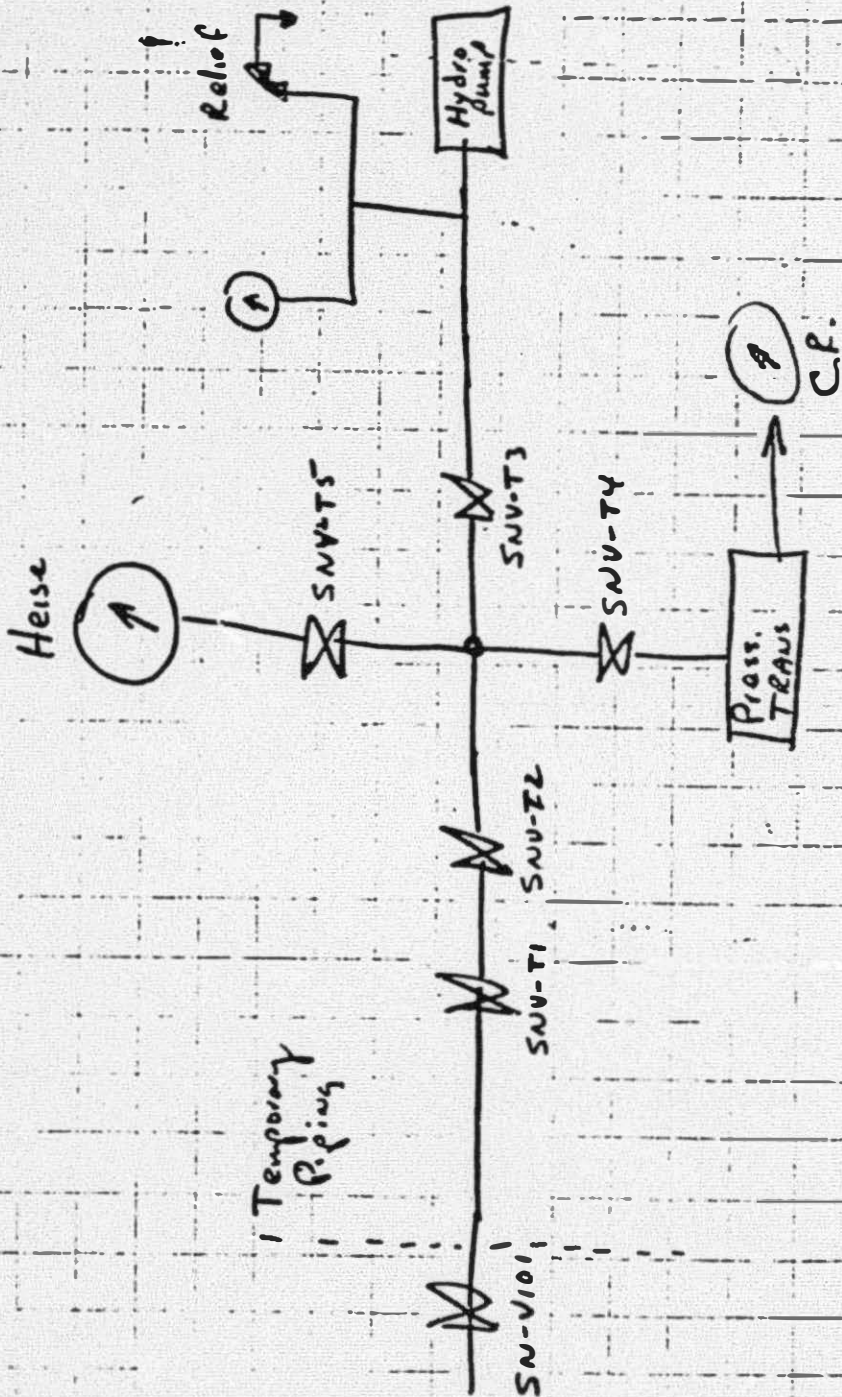
5.9 Shut CA-V3, CA-V10 and SN-VT1 & SN-VT2.

5.10 Calculate PZR level by using Attachment #2 and the C_p determined
in steps 5.5 and 5.8.

NOTE: that the stabilized pressure from the PZR steam space (determined
in step 5.8) should be the higher pressure.

5.11 Compare calculated PZR level (from step 5.10) with CR indication.

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As of 1570 4/18/79
 C.P. Dettke
 From: S. Kalenovich

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Attachment 1

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Rev. 7
 4/18/79

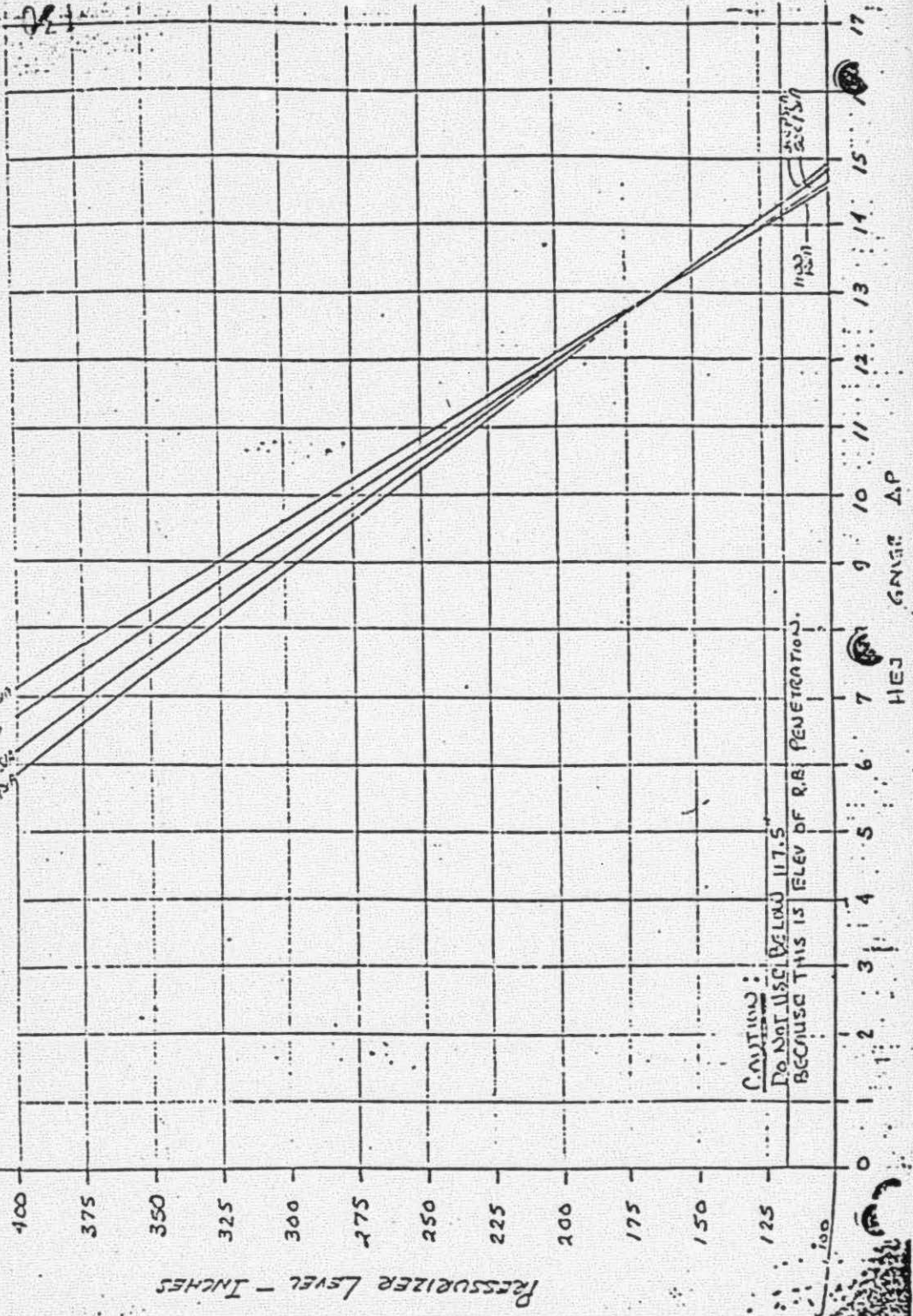
Attachment - 2 FINAL

EMERGENCY PRESSURIZER LEVEL CALIBRATION USING HEISE TEST GAGE ON THE WATER & STEAM EXAMPL.
NOTE: LINES MUST BE FILLED USING HYDRO PUMP PRIOR TO TAKING HEISE GAUGE

4/1/79
J.P. MOORE

THIS CALIBRATION WAS VERIFIED BY RT CHISHOLM ON 4/8/79 - JPM.

REV 4/8/79 - ADG
JPM



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