

ORIGINATING OFFICE PROCEDURES GROUP (NRR)

AUTHOR \_\_\_\_\_

DATE:(or time period covered) 3/31 - 4/11/79DESCRIPTION OF DOCUMENT CONTENTS: SPECIAL OPERATING PROCEDURES NOTES  
AND INFORMATIONOTHER IDENTIFYING PARTICULARS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

7905210079

144 250

P

Spa - Jan  
Mar 571 - Apr 1, 1979

## Significant Events

1. Sample taken from waste gas tank
2. Need Tech Spec Change to authorize isolating accum. while at elevated wash agrees draft sent written
3. Need to authorize pump back to carb from gas hold up tank.
4. Asked to have helicopter flights over reactor building to be held to minimum arms flights will hold to fly over cooling towers only applicant will do same state police will stop commercial flights over site
5. Need boron concentration of samples - 2.6 ppm uranium
6. Need to have another primary coolant samples? boron concentration.

3 PM to 5 PM  
March 31 -  
April 1

Significant Events

7 Concur if isolate CFT  
and rack out breaker -

Novak will notify if and  
when this is executed

U

Tasks to discuss w/ licensee

1. Status of Unit 1 sched?
2. Clean up aux bld'g  
and plan future actions  
install more pumps extra  
filters get rid of hot  
filters in aux bld'g

3.

Matt  
to Ross  
~~Friday~~ nite 3/31

1. ~~Why~~ ✓ Why not get down to 180° primary
2. ~~loss of block valve w/L of OS power~~  
✓ ~~right~~ ~~left~~ ~~bus~~ have a plan for quick placement on emergency bus
3. ✓ Add more RHR capacity  
pumps  
Heat exchangers  
Ion exchange systems  
Replaceable filters  
put them on in parallel  
fly them in now!
4. ✓ O<sub>2</sub> on top of makeup coolant —  
can it be replaced  
with nitrogen?
5. ✓ Look at catalyst to reduce  
radiolysis  
looked at adding N<sub>2</sub>  
to for ammonia — no good  
Berners
6. ✓ Procedure on use of incore  
coming to plant for core  
analysis.

7. ✓ Should we change the press & temp

2000 psi

better solubility of  $O_2$  &  $H_2$

no vessel problem

180 ° F

better heat transfer

no apparent Boron Sol. problem

8. ✓ Summarize equipment qualification question

outside, Contain - talk to B&W  
Bernaro

inside Contain - pump motor  
capacitor has  
environ qual  
(radiation)  
problem affecting  
its starting  
capability

Bernaro

will confirm

w/B&W.

~~9. scavengers.~~

10. ✓ what's happening w/ degasification  
& bubble size

+ 250 ft<sup>3</sup>  
uncertainty  
flaring

11. ✓ is component cooling water  
on to all pump.

12. ✓ should there be more water in the  
containment.

✓ 13) Put unit 1 in vessel  
head removed, highest  
water level, remote  
pump to river  
camera on water  
level

✓ 14) get robot into control  
room for post melt  
actions.

15) Dig a bunker  
for people who leave  
control room & still  
try to control  
melt (e.g. unit one  
and old behind shield).  
unobscured to that  
location for robot.

Future planning

1. Assume present cooling configuration  
where do you go  
What criteria  
Procedures

2. Assume present cooling  
is interrupted & go  
on ECCS with sump recirc.

Same as 1

3. Can other modes be  
found to continue core  
cooling

natural recirc.  
decay heat removal  
recovery pressure and  
get pump started

4. Other issues to future  
planning.

long term

emphasis

4/4 11:25 Mazetis in CR to Mattson

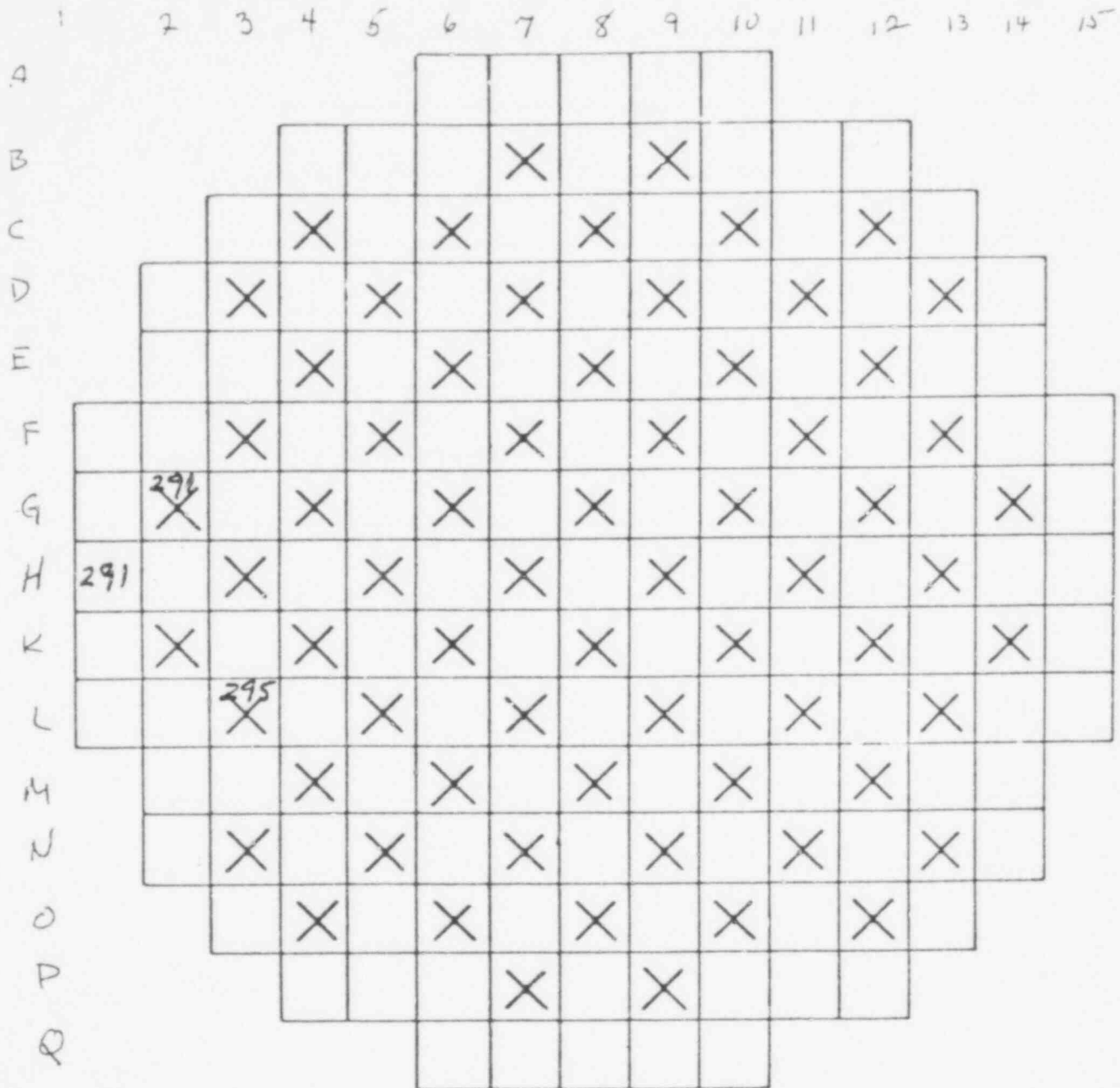
Boyce Grier, need to resolve  
question on tech spec violations:  
Does IE look &  
report to NRR for  
licensing decisions?

confusion in control  
room as to method  
of operation

Grier agreed & that this  
should be procedure -  
RTM should confirm  
w/ Mazetis

Done <sup>via</sup> ~~the~~ Chipman  
@ 11:45

File - procedures



2008 , 4/6

LOCATION OF FUEL ASSEMBLIES CONTAINING  
BURNABLE POISON RODS

THREE MILE ISLAND NUCLEAR STATION UNIT 2



259

FIGURE 4.3-2

Procedure Z-50 (Rev 3)

Test of Alternate Pressurizer Level Indication  
(attached)

If procedure is reviewed by ALARA/~~AE~~ & BSW  
and approved with no changes, John Olshinski  
gives his approval for NRC.

Any changes will necessitate further  
review.

John A. Olshinski  
Ø13Ø 4/11/79

AP 1001

Three Mile Island Nuclear Station

SIDE 1

Figure 1001-8

Special Operating Procedure

SOP No. Z-50(Rev 3)  
(From SOP Log Index)NOTE: Instructions and guidelines in AP 1001  
must be followed when completing  
this form.Unit No. #Date 4/10/791. Title Test of Alternate Pressurizer Level Indication

2. Purpose (include purpose of SOP)

To compare pressurizer level calculated from alternate  
indicators with installed pressurizer level indication

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

See Attachment

B. Prerequisites

C. Procedure

4. Generated by TA O'Connor Date 4/10/795. 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 NA ☐(b) SOP is not valid after NA ☐  
(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 2 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

|       |                                           |       |            |
|-------|-------------------------------------------|-------|------------|
| Baw   | Approved - Shift Supervisor               | _____ | Date _____ |
| NRC   | Reviewed - List members of PORC contacted | _____ | Date _____ |
| ALARA |                                           | _____ | Date _____ |
| RAG   |                                           | _____ | Date _____ |
|       | Approved - Unit Superintendent            | _____ | Date _____ |

8. SOP is Cancelled

144 261

Shift Supervisor/Shift Foreman

Date

# Test of Alt. Per level Indication

## 1.0 Purpose

To compare alternate indication with installed pressurizer level indication.

## 2.0 Limits + Precautions

~~2.1 This procedure shall not be run concurrently with or following Z-57 when the RCS pressure has been reduced to  $\leq 509$  PSIG.~~

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

2.2.3 If dose rates in the general area exceed 1 Rem, remote monitoring equipment e.g. television cameras, should be used.

2.3.2.4 Communications with the Control Room shall be established such that the data is taken when CA-V1 or CA-V3 are opened and the gauge reading has stabil.

### 3.0 Prerequisites

3.1 Fill the STEAM and LIQUID lines to establish reference legs

3.1.1 Connect a high pressure pump hydro or other to the connection downstream of SN VT3

3.1.2 Perform the following valve line-up

|      |          |       |      |          |       |
|------|----------|-------|------|----------|-------|
| Open | SN V 181 | _____ | Shut | SN V 124 | _____ |
|      | SN V 1   | _____ |      | SN V 125 | _____ |
|      | SN V 4   | _____ |      | SN V 2   | _____ |
|      | SN V 101 | _____ |      | SN V 3   | _____ |
|      | SN V T 2 | _____ |      | SN V 5   | _____ |
|      | SN V T 1 | _____ |      | SN V 109 | _____ |
|      | SN V T 3 | _____ |      | SN V 6   | _____ |

3.1.3 Fill the pressurizer steam sample line

3.1.3.1 Start the pump and raise pressure to 50 psig greater than the highest reading in the control room for primary pressure. Check all new fittings for leakage.

CAUTION

DO NOT EXCEED

1500 psig as read on the Hydro pump test gage and on the Hebet gage.

3.1.3.2 Check close CA V 3 + CA V 6

Open CA V-1 and CA V 10

44 263

change ~ 3 gals of DI water into the  
pressurizer steam space while CONTINUOUSLY  
monitoring pressure on the gage and on the pump  
discharge.

3.1.2.4 Restart pump at same stroke setting  
for 15 secs. Stop pump and record gage  
reading.

3.1.2.5 Repeat this process until no change  
is observed in gage reading following  
the restart of pump.

3.1.2.5 Close CA V1

3.1.4 Fill pressurizer water sample line

3.1.4.1 Close CA V6 open CA-V3. 144 264

Adjust pump stroke to charge ~ 3 gal  
DI water

space while CONTINUOUSLY monitoring pressure  
on the Heis gage and on the pump discharge

3.1.4.2 Repeat steps 3.1.2, 4 & 5

3.1.4.3 Close CA V-3.

3.2

Alternate pressurizer level indication per SOP-Z-37 has been completed and leak checked per SOP Z-50.

3.3

Value lineup as described in SOP Z-37 is complete.

3.4

SN-V-T1 and T-2 and T-3 are closed.

3.5

CA-V6 is closed

#### 4.0 Procedure:

4.1 Insure SN-V8, SN-V163 and SN-V176 are closed.

4.2 Trend pressurizer level on the computer for 10 minutes before starting data taking. Continue trending during entire test.

4.3 Open CA-V10

4.4 Open CA-V1

and primary pressure  
Pt 391

44.266

~~4.5 Check SN-V101 open~~

~~4.6 Check ~~SN~~ VT3 shut and capped~~

~~4.7 slowly open SN-VT2~~

~~4.8 Crack open SN-VT1~~

4.9 Allow pressure on the Heise gauge to stabilize. ~~for 5 minutes~~ <sup>TAC</sup>

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

4.10 Record gage pressure reading and time.

Pressure \_\_\_\_\_

Time \_\_\_\_\_

4.11 Advise Control Room of data.

4.12 Close CA-V1

4.13 Open CA-V3 and allow pressure to stabilize

4.14 Record pressure gauge reading and time:

|        | Pressure | Time |
|--------|----------|------|
| 4.15   |          |      |
| 4.15.1 |          |      |
| 4.16   |          |      |
| 4.17   |          |      |
| 4.18   |          |      |
| 4.19   |          |      |
| 4.20   |          |      |

4.15 Advise Control Room of values.

4.15.1 Shut SN-V101

4.16 Close CA-V3

4.17 Close CA-V10

4.18 Close CA-V1

4.19 Calculate pressurizer level by using attachment #1 to convert gauge  $\Delta p$  to level.

4.20 Compare calculated level vs control room indication.

# Pressurizer Level Measurement Heise Calibration

| READING<br>No | Data                                 |                                      | Method            |                           | CONTROL<br>Room<br>PZR<br>PRESSURE |
|---------------|--------------------------------------|--------------------------------------|-------------------|---------------------------|------------------------------------|
|               | CONTROL<br>Room<br>PZR LEVEL<br>LT-2 | CONTROL<br>Room<br>PZR LEVEL<br>LT-3 | PZR<br>TEMP<br>°F | HEISE<br>READING<br>CA-VI | HEISE<br>READING<br>CA-V3          |
| 1             |                                      |                                      |                   |                           |                                    |
| 2             |                                      |                                      |                   |                           |                                    |
| 3             |                                      |                                      |                   |                           |                                    |
| 4             |                                      |                                      |                   |                           |                                    |
| 5             |                                      |                                      |                   |                           |                                    |
| 6             |                                      |                                      |                   |                           |                                    |
| 7             |                                      |                                      |                   |                           |                                    |
| 8             |                                      |                                      |                   |                           |                                    |
| 9             |                                      |                                      |                   |                           |                                    |
| 10            |                                      |                                      |                   |                           | 144 269                            |
| 11            |                                      |                                      |                   |                           |                                    |

Attachment #1 FINAL

EMERGENCY PRESSURIZER LEVEL CALIBRATION USING HEISE TEST GAGE ON THE WATER & STEAM SAMPLE 1

NOTE: LINES MUST BE FILLED USING HYDRO PUMP PRIOR TO TAKING HEISE GAUGE READINGS

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

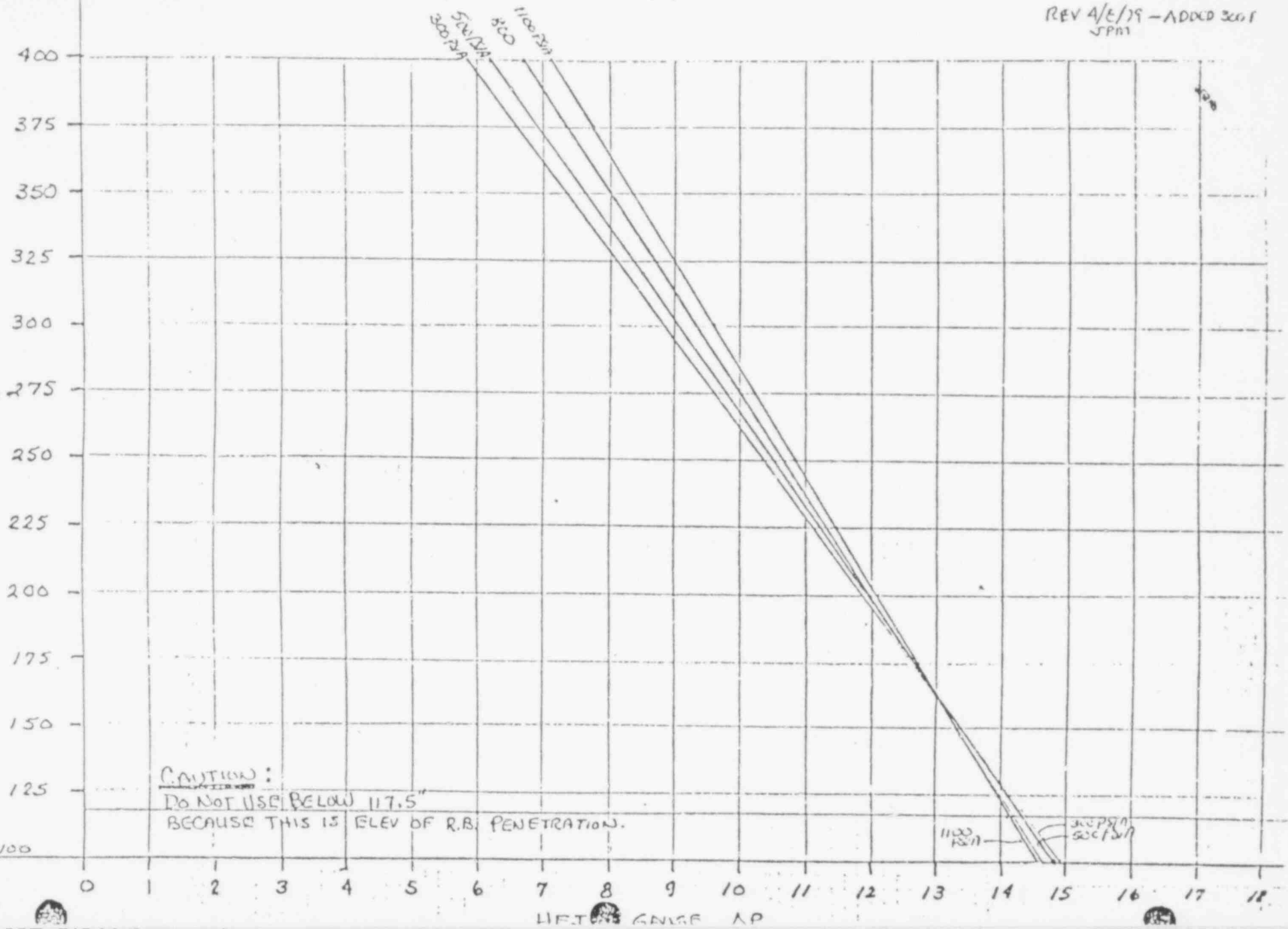
4/7/79

J.P. MOORE

REV 4/8/79 - ADDED 300 F  
JPM

PRESSURIZER LEVEL - INCHES

144.270



# Alternate Pressurizer Level Indication

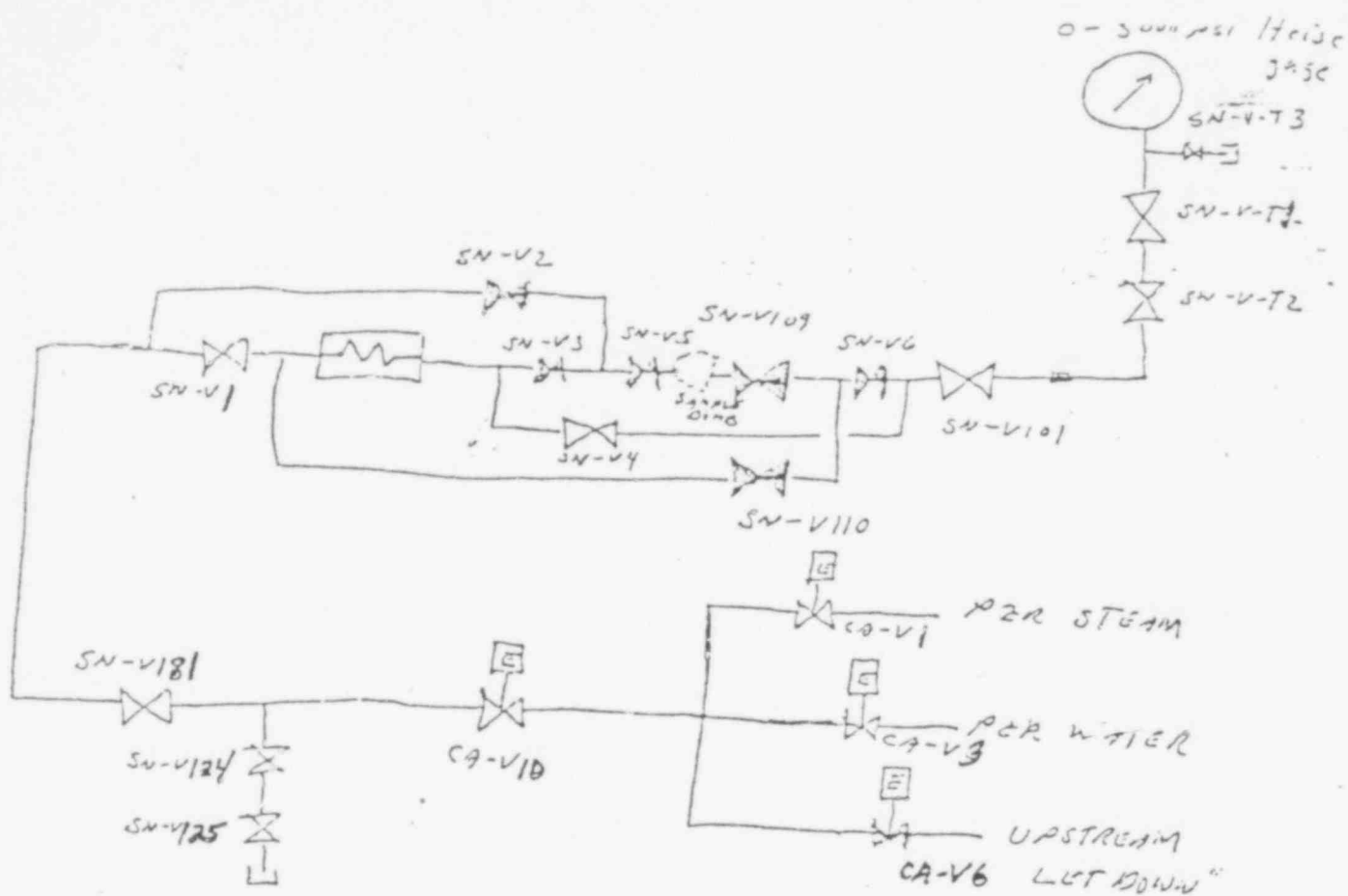


Figure 1

# Pressure Reduction Criteria

A. Thader

4/7

Criteria  
58

Limit

| Item                                      | Initial Condition | Final Condition | Limit                 |
|-------------------------------------------|-------------------|-----------------|-----------------------|
| 1) Reactor Coolant Pump P/T               |                   |                 | P/T Co                |
| 2) " " " Vibration                        |                   |                 | 30 m/s                |
| 3) " " " flow Oscillation                 |                   |                 | Need<br>Check         |
| 4) " " " Current                          |                   |                 | Need                  |
| 5) Core Parts Monitoring                  |                   |                 | Need                  |
| 6) Noise Monitoring                       |                   |                 | If burst<br>2.5 m/s   |
| 7) Thermocouple Temp Limit                | Hottest           |                 | Tset - 10<br>Pset + 1 |
| 8) Pressurizer Level                      |                   |                 | 2.55'                 |
| 9) Pressurizer Heaters                    |                   |                 |                       |
| 10) RCS Pressure, Temp, and mass transfer | x                 | x               |                       |
| 11) Make up tank P, T, Level, Venting     | x                 | x               |                       |
| 12) Containment Conditions                | x                 | x               | x                     |
| Temp                                      |                   |                 |                       |
| Press                                     |                   |                 |                       |
| H <sub>2</sub> Conc.                      |                   |                 |                       |