

AP 1001

Three Mile Island Nuclear Station
Special Operating Procedure

SIDE 1

Form 1001-8

SOP No. 7-115
(From SOP Log Index)

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

Unit No. 2

Date 5/8/79

1. Title RCS PRESSURE CONTROL USING A DECAY HEAT REMOVAL PUMP

2. Purpose (include purpose of SOP)
To control RCS pressure with a Decay Heat Removal Pump.

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 TSPG Date 5/8/79

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 MAA

(b) SOP is not valid after MAA
(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

Approved - Shift Supervisor _____

Reviewed - List members of PORC contacted R. W. B. B. 5-9-79 Date

W.C.C. _____ Date

63 w _____ Date

602 _____ Date

Approved - Unit Superintendent 5/9/79 Date

_____ Date

8. SOP is Cancelled

Shift Supervisor/Shift Foreman

Date

RCS PRESSURE CONTROL USING
A DECAY HEAT REMOVAL PUMP

Z-115 Rev. 0 5/8/79

1.0 PURPOSE

1.1 To control RCS pressure with a Decay Heat Removal Pump.

2.0 REFERENCES

2.1 Decay Heat Removal Pump Characteristics, Figure 1 and Figure 2.

2.2 Decay Heat Removal Operating Procedure 2104-1.3.

3.0 LIMITATIONS AND PRECAUTIONS

3.1 To ensure continuous operation of the DH system components, maintain the limits set forth in 2104-1.3 (reference 2.2).

3.2 RC system pressure will decay at a rate of 50 psig for each 20 gallons that leak or is letdown from the RC system. With letdown secured, this pressure decrease will be a function of RC system leakage.

3.3 If the BWST level decreases to 20 feet, shut DH-V108A and B and DH-V115 to prevent putting RB sump water in the BWST via the 720 gpm recirc.

3.4 If the BWST level is not maintained above >10 feet, the DHR Pump suction will be shifted to the containment sump.

4.0 PREREQUISITES

4.1 BWST level >20 feet.

4.2 BWST boron concentration = RCS boron concentration \pm 250 ppm.

5.0 SPECIAL EQUIPMENT

None.

6.0 METHOD

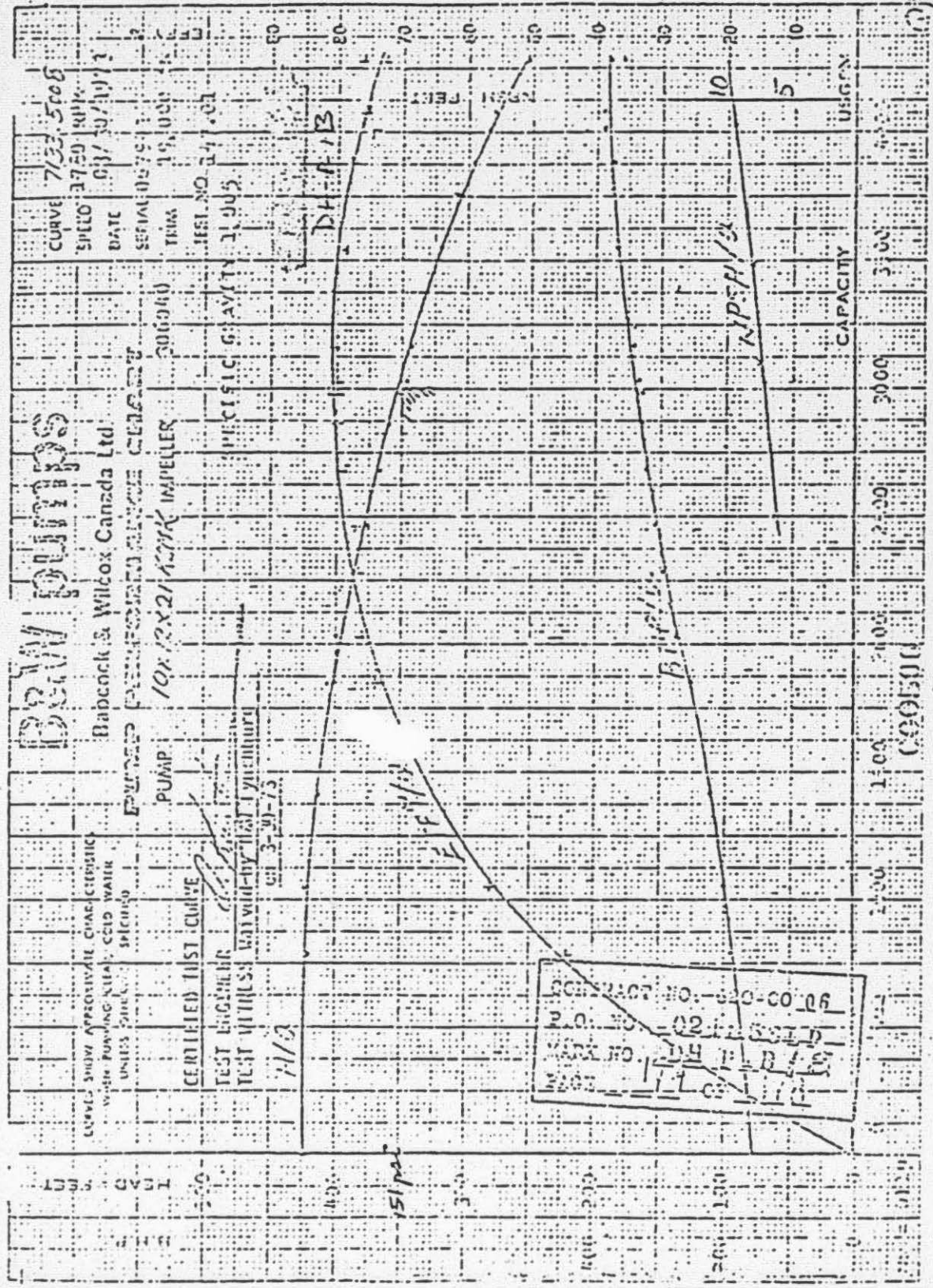
6.1 Prepare the Decay Heat system for RCS pressure control.

6.1.1 Determine which Decay Heat Pump is to be used for RCS pressure control.

6.1.2 Perform valve lineup attachment 1, for pump "A" operation or valve lineup, attachment 2, for pump "B" operation.

- 6.1.3 Start the selected Decay Heat Pump.
- 6.1.4 Throttle open DH-V-116 until flow indicator DH-1-F11 for Decay Heat Removal Pump "A" or DH-1-F12 for Decay Heat Removal pump "B" indicates 720 gpm.
- 6.2 RC system pressure control.
 - 6.2.1 The Decay Heat system is now operational, if not secured, secure the following:
 - A. Secure any operating RC pumps.
 - B. De-energize all pressurizer heaters.
 - C. Secure the operating makeup pump.
 - D. Close seal return valve MU-V377 and secure letdown by closing MU-V5.
 - NOTE: RC system pressure will decay at a rate of 50 PSIG for each 20 gallons that leak or is letdown from the RCS. With letdown flow secured, this pressure decrease will be a function of RC system leakage.
 - 6.2.2 Record BWST level on Attachment 3.
 - 6.2.3 ~~do~~ open DH-V-4A if DHR Pump "A" was started or DH-V-4B if DHR Pump "B" was started ~~to~~ maintain the RCS at the discharge pressure of the DHR Pump *by throttling open DH-V120A or 120B.*
- 6.3 Continue to operate the Decay Heat Removal Pump to maintain RCS pressure.
- 6.4 BWST level maintenance.
 - 6.4.1 Maintain BWST as full as possible with borated water in accordance with plant technical specifications.
 - 6.4.2 A record of total borated water pumped to the RCS should be maintained so that an estimated containment sump level can be computed - see Attachment 3.
 - 6.4.3 If the BWST level decreases to 20 feet or more than 200,000 gallons is pumped to the containment sump shut DH-V=108A, DH-V109B, and DH-V116.
 - 6.4.4 If level can be re-established above 20 feet, open DH-V108A for pump A or DH-V108B for pump B and throttle open DH-V116 for 720 gpm as read on DH-1-F11 for DHR pump A or DH-1-F12 for DHR pump B.
 - 6.4.5 If BWST level decreases to 10 feet or 300,000 gallons has been pumped to the containment sump ensure that DH-V5A and DH-V5B are shut and DH-V6A for pump "A" or DH-V6B for pump "B" is open.
- 6.5 Continue to operate the DHR pump to maintain RCS Pressure.

447 Sect = 193 psi



"A" DECAY HEAT PUMP

<u>Valve</u>	<u>Position</u>	<u>Initials</u>
✓ DH-V-149	Open	_____
DH-V-8A	Closed	_____
DH-V-8B	Closed	_____
✓ DH-V-5A	Open	_____
✓ DH-V-6A	Closed	_____
✓ DH-V-102A	Open	_____
✓ DH-V-100A	Closed	_____
- DH-V-178A	Open	_____
✓ DH-V-128A	Open <i>closed</i>	_____
✓ DH-V-187 <i>182B instead</i>	Closed	_____
✓ DH-V-7A	Closed	_____
✓ DH-V-4A	Closed	_____
✓ DH-V-108A	Open	_____
- DH-V-109	Closed	_____
DH-V-104A	Closed	_____
✓ DH-V-116	Closed	_____

1. verify all valves in field

*1000 7
2/10/79*

"B" DECAY HEAT PUMP

<u>Valve</u>	<u>Position</u>	<u>Initials</u>
DH-V-149	Open	_____
DH-V-8A	Closed	_____
DH-V-38	Closed	_____
OH-V-58	Open	_____
DH-V-68	Closed	_____
DH-V-102B	Open	_____
DH-V-100B	Closed	_____
DH-V-178B	Open	_____
OH-V-128B	Open <i>closed</i>	_____
OH-V-187	Closed	_____
DH-V-78	Closed	_____
DH-V-48	Closed	_____
DH-V-108B	Open	_____
DH-V-109	Closed	_____
DH-V-104B	Closed	_____
DH-V-116	Closed	_____

Item 1 - Record BWST level per step 6.2.2
_____ feet or gallons.

Item 2 - Record all makeups to the BWST
_____ feet or gallons.

Item 3 - Present BWST level
_____ feet or gallons.

Item 1 + Item 2 - Item 3 = gallons of borated water pumped to the
containment sump.