AP 1001
Figure 1001-8

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

Three Mile Island Nuclear Station
Special Operating Procedure

REV 0

NRC

SIDE 1

SOP No. Z-111
(From SOP Log Index)

Unit No. TWO

Date 4/25/79

1. Title Temporary Feedwater Bypass Operation and Installation

2. Purpose (Include purpose of SOP)
To provide a procedure for installation/hydro testing/operating a temporary bypass system installed around the main feed pumps to the feed piping downstream of the FW regulating valves.

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

4. Generated by Jim Magers - TSPG Date 4/25/79

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 ______ ☐

(b) SOP is not valid after ______ ☐
(fill in circumstances which will result in SOP being cancelled)

NA

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 ☐

NA

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

NRC [signature]
EW NA
RA NA

Approved — Shift Supervisor [signature] 4/25/79 Date
Reviewed — List members of PORC contacted R P Warren 4/25/79 Date
[signature] 4/25/79 4/25/79 Date
[signature] 4/21/79
Approved - Unit Superintendent [signature] 4/25/79 Date

8. SOP is Cancelled

______ Shift Supervisor/Shift Foreman ______ Date

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1.0 PURPOSE

1.1 To provide a system to fill the existing and new temporary piping.

1.2 To provide a method for hydro testing the new temporary piping.

1.3 To provide a method to place into service new temporary piping to control OTSG level.

1.4 To provide a method for draining the necessary piping to cut into the 14"feedwater lines.

2.0 REFERENCES

2.1 Drawing 2005

2.2 Drawing 2008

2.3 Attachment 1

2.4 Attachment 2

3.0 LIMITS & PRECAUTIONS

3.1 If level in OTSG drops to 350" on Full Range level indication start ~~AFW~~ ~~Condensate pump~~ EFW Pump.

3.2 If level in OTSG rises to 450" on Full Range level indication close ~~the new temporary two (2) inch globe valve FW-TV-1.~~ FW-V17A.
~~If level is still increasing, "tweek" back on FW-V-17A.~~

3.3 Hydro pressure should be 300±10 psig.

3.4 If ~~EFW~~ is needed, trip the main turbine.

3.5 Ensure minimum condensate pump flow is 2000 gpm.

4.0 PREREQUISITES

4.1 Hydro pump is ready for use

4.2 OTSG level should be level and steady before ~~cutting in~~ placing in service the new temporary piping to determine new flow rates.

5.0 SPECIAL EQUIPMENT

5.1 Hydro pump

6.0 METHOD

6.1 System Fill
Note: Valve line-ups must be done in sequence

	Position	Initials
CO-V50B	Closed	
CO-V39B	Open	

6.2 Venting of existing feedwater heater string

6.2.1 Open CO-V172B
6.2.2 Open CO-V173B until no air is left, then close CO-V173B
6.2.3 Close CO-V-172B
6.2.4 Open CO-V166B
6.2.5 Open CO-V165B until no air is left, then close CO-V165B
6.2.6 Close CO-V166B

6.3 Filling of temporary piping

6.3.1 Perform the following valve line-up in sequence

Valve	Position	Initials
HV-V-52B	Open	
HV-V-73B	Open	
HV-V-49B	Open	
HV-V-70B	Open	
Co-V-168B	Open	
Co-V-167B	Open	
FW-V-63A	Closed	
FW-V-56A	Closed	
FW-V-62A	Closed	
FW-V-61A	Closed	

6.4 Venting of temporary piping.

6.4.1 Open FW-TV-2 temporary piping vent until all air is gone, then close FW-TV-2.

6.4.2 Open FW-TV-3 temporary piping vent until all air is gone, then close FW-TV-3.

6.5 Flushing of temporary piping
NOTE: It may be necessary to install layflat prior to flushing.

6.5.1 Open FW-TV-3 to flush temporary piping.

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6.5.2 Close FW-TV-3 when water sample ~~is within acceptable limits~~. shows no particulate. ie (water looks clear) no sample required [illegible]

6.6 Hydro of temporary piping

6.6.1 Close or verify closed, the following valves

HV-V-73B
HV-V-52B
HV-V-49B
HV-V-70B
CO-V-168B
CO-V-167B
FW-V-63A
FW-V-56A
FW-V-62A
FW-V-61A

6.6.2 Attach the hydro pump to FW-TV-4.

6.6.3 Begin hydro operation of temporary piping when hydro pump is ready by opening FW-TV-4. Pressurize to 3000 ± 10 psig. Hold pressure for 10 minutes and inspect welds.

6.6.4 When hydro of temporary piping is completed, stop the hydro pump.

6.6.5 Open FW-TV-2 to vent off pressure.

6.6.6 When pressure has been bleed off, close FW-TV-2.

6.6.7 Close TW-TV-4 when hydro pump is ready to be removed from service.

6.7 Verify temporary piping will maintain OTSG level.

6.7.1 Perform the following valve line-up in sequence.

Valve	Position	Initials
HV-V-52B	Open	_____
HV-V-73B	Open	_____
HV-V-49B	Open	_____
HV-V-70B	Open	_____
CO-V-168B	Open	_____
CO-V-167B	Open	_____
FW-TV-4	Closed	_____
FW-V-17A	Open	_____
FW-V-14A	Closed	_____
FW-V-61A	Open	_____
FW-V-62A	Open	_____
FW-TV-1	~~Open~~ Closed	_____

6.7.2 Before proceeding with the next step, be sure the OTSG level is steady.

NOTE: Open FW-TV-1 perhaps 2 turns and to see if level increases. If level increases too fast, close FW-TV-1 and then reopen FW-TV-1 one turn. If level increases too fast again, close FW-TV-1 and reopen FW-TW-1 one-half (½) turn. Repeat this procedure until a very slow, controlled, and measurable increase is observed in order to determine flow rate.

6.7.3 When OTSG level is steady, closely observe OTSG level increase while throttling open FW-TV-1.

6.7.4 Open FW-V-63A and open FW-V-56A. Observe OTSG level increase.

6.7.5 Close FW-V-26A

6.7.6 If OTSG level is still increasing, throttle back on FW-TV-1.

6.7.7 Throttle OTSG level from this point on with Start-up Feedwater Valve FW-V-25A.

6.7.8 If OTSG level is dropping and cannot be raised by FW-V-25A, then open FW-TV-1.

NOTE: Operate in this method of operation for at least two (2) hours to verify OTSG level can be controlled.

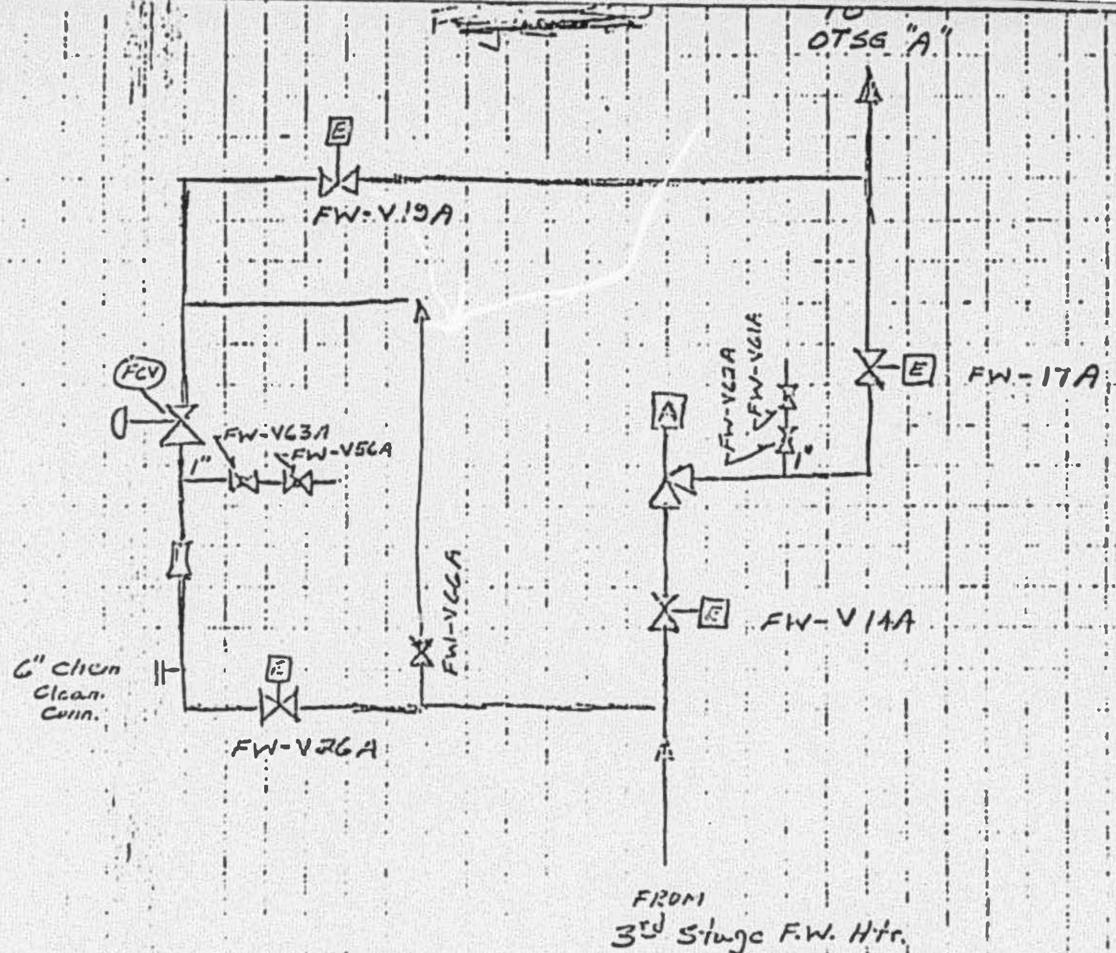
6.7.9 Verify closed FW-V-26A and FW-V-14A when construction is really ready to cut into the feedwater piping.

NOTE: If tie in can not be made after two (2) hours, then, if desired, go to the following valve line-up.

6.7.10 Open FW-V-26A
Close FW-V-17A
Close FW-V-63A

6.7.11 When construction is ready to tie into the 14" feedwater line then perform the following valve line-up.

Open FW-V-63A
Open FW-V-17A
Close FW-V-26A



(Fig [illegible] For 2-VII REV C)

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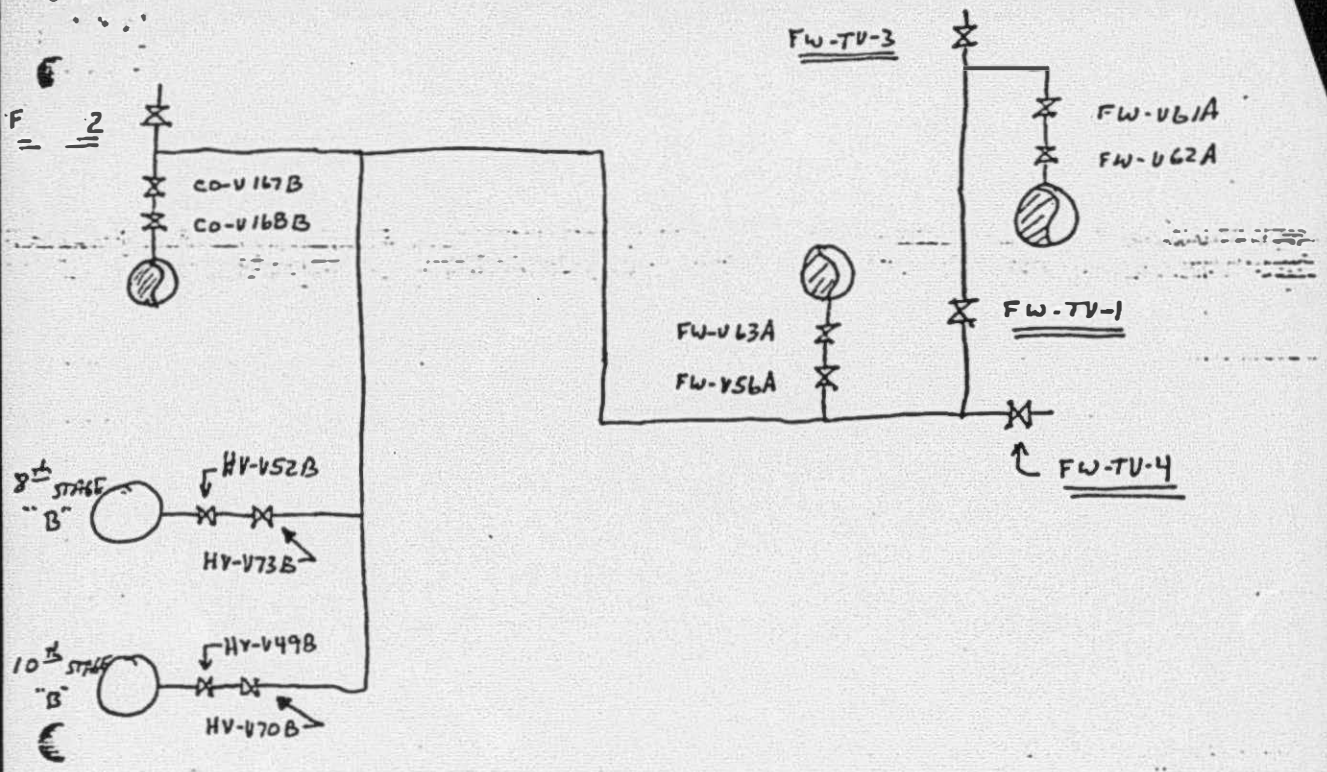
FW-TV-3
FW-V61A
FW-V62A
F 2
CO-V167B
CO-V168B
FW-V63A
FW-V56A
FW-TV-1
FW-TV-4
8th STAGE "B"
HV-V52B
HV-V73B
10th STAGE "B"
HV-V49B
HV-V70B

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