

ATTACHMENT 4

Consumers Power Company
Big Rock Point Plant
Docket 50-155

PROCEDURE T30-22

June 2, 1988

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PROCEDURE APPROVAL AND AUTHORIZATION

Procedure No. T30-22 Rev No. 30
Procedure Title EMERGENCY CORE COOLING SYSTEM VALVE TESTS

CURRENT REVISION STATUS

Author JDHoron Date 04/06/88 Quality Review Form No. 1347-87

APPLICABILITY ISSUE HISTORY

Revision No. 30 Date 04/06/88 Quality Review Form No. 1347-87

Approved for use

Procedure Sponsor/Designate _____ Date _____

Authorized Period of Use _____ through _____

NOTE: Authorized period shall not exceed two years from date of last Review for Applicability.

When applicable:

PROCEDURE IMPLEMENTATION HISTORY

Reviewed for System or Component Operability

Performed by		Completed/Reviewed by		Method of Verification
Title		Title		
Date	Time	Date	Time	<input type="checkbox"/> Functional Test
				<input type="checkbox"/> Physical Inspection
				<input type="checkbox"/> Administrative Review

MAINTENANCE ORDER NO. (if applicable) _____

T30-22
EMERGENCY CORE COOLING SYSTEM VALVE TESTS

1.0 PURPOSE

- 1.1 Verify the operability of MO-7051, MO-7061, MO-7066, MO-7070, MO-7071 and MO-7080 by remote manual operation.
- 1.2 Provide valve timing documentation per ASME Boiler and Pressure Vessel Code Section XI, IWV Testing.
- 1.3 Verify the deluge isolation valve, CV-4101 closes anytime a core spray valve opens and automatically reopens when all core spray valves are closed.
- 1.4 Verify that check valves VPI-303 and VPI-304 adequately seat, thereby preventing leakage from the high pressure coolant system into the low pressure core spray system.

2.0 PRECAUTIONS AND LIMITATIONS

- 2.1 When stroking motor-operated valves during this test, only one valve (of the valves being tested) may be open at a time.
- 2.2 During testing when MO-7051, MO-7061, MO-7070 and MO-7071 are opened, the substation deluge isolation valve CV-4101 will close to remove fire suppression capability for transformer sprays and the local trouble alarm will sound for FPS trouble.
- 2.3 If the fire main pressure increases to > 170 psig, as indicated on PI-338/PR-52, immediately close the core spray valve that was opened. A momentary pressure increase is normal, but a continued increase may indicate leakage of reactor coolant into the fire main.

- 2.4 The storm drain located northeast of the escape lock directs the discharge of the core spray heat exchanger to the lake. If the drain culvert becomes plugged, the discharge of the heat exchanger will flood out of the drain box into the yard. Under this condition, the capacity of the heat exchanger is not affected unless freezing conditions exist and the water in the drain box is allowed to freeze. If the culvert becomes plugged initiate a Maintenance Order to clean it out. If this condition occurs in freezing weather, steps shall be taken to prevent freezing and to remove the standing water from the drain box.

3.0 PREREQUISITES

- 3.1 The fire water system shall be operable and CV-4101 open.

(SS) _____

- 3.2 During refueling with MO-7070 and MO-7071 tagged out, delete Steps 5.23 through 5.32.

Yes _____ No _____

(SS) _____

- 3.3 INSTRUMENT CALIBRATION DUE DATES

PR-52 _____

PI-338 _____

PI-412 _____

(SS) _____

- 3.4 Shift Supervisor's permission to perform test.

(SS) _____

- 3.5 Stopwatch used for timing valves:

Serial Number _____

Calibration Due Date _____

(OP) _____

- 3.6 For the following motor-operated valves place the thermal-overload bypass keyed selector switch to the "inservice" position:

(✓)

MO-7066 (HS-5418-1) Core Spray Pump Room _____
MO-7070 (HS-B163-1) Behind 480V Load Ctr _____
MO-7071 (HS-B152-1) Behind 480V Load Ctr _____
MO-7080 (HS-3411-01) MCC 2B Breaker _____

(OP) _____

4.0 REFERENCES AND ATTACHMENTS

- 4.1 Big Rock Point Technical Specifications, Section 11.4.1.4a, Emergency Core Cooling System
- 4.2 Big Rock Point Technical Specifications, Section 9.3, Inservice Inspection and Testing Specifications
- 4.3 Big Rock Point P&ID 0740G40123, Fire System
- 4.4 Big Rock Point P&ID 0740G44008, Post-Incident System Valve Lineup
- 4.5 Big Rock Point P&ID 0740G44019, Fire Protection System Valve Lineup
- 4.6 Big Rock Point Volume 3, SOP-8, Post-Incident System
- 4.7 Letter From NRC To DABixel Dated January 16, 1978
- 4.8 Letter From DABixel To NRC Dated February 1, 1979
- 4.9 Big Rock Point Technical Data Book 15.5.E.1, MO-7070 vs MO-7071 Opening Times
- 4.10 ASME B&PV Code Section XI, Rules For Inservice Inspection of Nuclear Power Plant Components
- 4.11 Big Rock Point Procedure TV-30, ASME Boiler and Pressure Vessel Code Section XI, IWV & IWP Testing Program

- 4.12 EA-TV-30-02, Establishment Of Stroke Times For Valves In The ASME Section XI Valve Program
- 4.13 Letter From NRC Regarding SEP Topic V-11.A Dated August 12, 1982
- 4.14 Attachment 1, Independent Component Alignment Verification

5.0 PROCEDURE

- 5.1 Place the diesel fire pump control to the "Off" position. (OP) _____

- 5.2 Station an observer at the storm drain, located at the discharge canal west bank during stroking of MO-7066 and MO-7080. If the drain culvert cannot handle the flow, notify the Shift Supervisor (Refer to Step 2.4). (OP) _____

- 5.3 NOTE: Do not leave MO-7066 open any longer than absolutely necessary.

Stroke and time MO-7066 (RMC-5521).

	MO-7066 <u>Time</u>	Acceptance <u>Criteria</u>	Acceptable	
			<u>Yes</u>	<u>No</u>
Opening	_____	< 29 sec	_____	_____
Closing	_____	< 27 sec	_____	_____

(OP) _____

- 5.4 After the electric fire pump starts, place the diesel fire pump control to the "Auto" position.

(OP) _____

- 5.5 NOTE: Do not leave MO-7080 open any longer than absolutely necessary.

Stroke and time MO-7080 (RMC-5591).

	MO-7080 <u>Time</u>	Acceptance <u>Criteria</u>	Acceptable	
			<u>Yes</u>	<u>No</u>
Opening	_____	< 23 sec	_____	_____
Closing	_____	< 17 sec	_____	_____

(OP) _____

- 5.6 Record the initial pressure readings from, and standby, the diesel fire pump control panel to observe PI-338 and PR-52 during ECCS valve stroking.

PI-338 _____ psig

PR-52 _____ psig

(OP) _____

- 5.7 Close PT-186 instrument valve VIP-165, located in the inside cable penetration area.

(OP) _____

- 5.8 Block operation of MO-7061 by placing RMC-5501 in the "Pull-To-Stop" position.

(OP) _____

- 5.9 CAUTION: If fire main pressure increases to > 170 psig during this step, immediately close MO-7051 and abort the test after returning the system to normal.

Stroke and time MO-7051 (RMC-5519) and verify operation of substation deluge valve, CV-4101.

	MO-7051 <u>Time</u>	Acceptance <u>Criteria</u>	Acceptable <u>Yes</u> <u>No</u>		CV-4101 <u>Position</u>
Opening	_____	< 27 sec	___	___	Closed _____
Closing	_____	< 26 sec	___	___	Opened _____

(OP) _____

- 5.10 Core spray flow recorder "Red" light and chart drive "On."

(OP) _____

- 5.11 With MO-7051 closed verify that the leakage from the telltale between MO-7051 and MO-7061 has decayed to less than a steady stream, as observed from the hose at the sample sink in the recirc pump instrument room.

(OP) _____

- 5.12 Return RMC-5501 for MO-7061 to its neutral position and check the following:

MO-7051 Closed _____

CV-4101 Open _____

(OP) _____

- 5.13 Block operation of MO-7051 by placing RMC-5519 in the "Pull-To-Stop" position.

(OP) _____

- 5.14 CAUTION: If fire main pressure increases to > 170 psig during this step, immediately close MO-7061 and abort the test after returning the system to normal.

Open and time MO-7061 (RMC-5501) and verify operation of substation deluge valve, CV-4101.

MO-7061 Opening Time _____ seconds;
Acceptance Criteria < 30 seconds.

CV-4101 Closed _____

Results Acceptable: Yes _____ No _____ (OP) _____

- 5.15 While MO-7061 is open, verify that check valve VPI-304 is adequately seated by checking for flow through telltale between MO-7051 and MO-7061.

Adequately Seated: Yes _____ No _____ (OP) _____

- 5.16 Close and time MO-7061 (RMC-5501) and verify operation of substation deluge valve CV-4101.

MO-7061 Closing Time _____ seconds;
Acceptance Criteria < 16 seconds

CV-4101 Opened _____

Results Acceptable: Yes _____ No _____ (OP) _____

- 5.17 Return RMC-5519 for MO-7051 to its neutral position and check the following:

MO-7061 Closed _____

CV-4101 Opened _____ (OP) _____

- 5.18 Remove the cap and attach a hose to the tee between VPI-185 and PT-186.

NOTE: Use a bucket to contain the flow expected in the next step.

(OP) _____

- 5.19 CAUTION: Flow through the hose may be rapid initially, but should subside to a few drops a second, or stop, after approximately one minute.

Slowly open PT-186 instrument valve VPI-165.

_____ Flow acceptable after 1 minute, go to Step 5.20.

_____ Flow substantial after 1 minute, close VPI-165 and notify the Control Room.

(OP) _____

- 5.20 Close PT-186 instrument valve VPI-165.

(OP) _____

- 5.21 Replace cap on tee located between PT-186 and its instrument valve VPI-165.

(OP) _____

- 5.22 Slowly open and then seal open VPI-165.

(OP) _____

- 5.23 Block operation of MO-7071 by placing RMC-5528 in the "Pull-To-Stop" position.

(OP) _____

- 5.24 CAUTION: If fire main pressure increases to > 170 psig during this step, immediately close MO-7070 and abort the test after returning the system to normal.

Stroke and time MO-7070 (RMC-5527) and verify operation of substation deluge valve CV-4101.

NOTE: Opening times < 12 seconds may indicate failure of full valve stroke. The valve is to be visually observed during subsequent restroking.

	MO-7070 <u>Time</u>	Acceptance <u>Criteria</u>	<u>Acceptable</u> Yes No		CV-4101 <u>Position</u>
Opening	_____	Step 5.32	N/A	N/A	Closed _____
Closing	_____	< 24 sec	_____	_____	Opened _____

Indicate whether MO-7070 was observed visually to verify full open travel and results:

_____ N/A _____
(OP) _____

- 5.25 With MO-7070 closed verify that leakage from the telltale between MO-7070 and MO-7071 has decayed to less than a steady stream of water as observed on the reactor deck.

(OP) _____

- 5.26 Return RMC-5528 for MO-7071 to its neutral position and check the following:

MO-7070 Closed _____

CV-4101 Open _____

- 5.27 Block operation of MO-7070 by placing RMC-5527 in the "Pull-To-Stop" position.

(OP) _____

- 5.28 CAUTION: If fire main pressure increases to
> 170 psig during this step, immediately
close MO-7071 and abort the test after
returning the system to normal.

Open and time MO-7071 (RMC-5528) and verify operation
of substation deluge valve, CV-4101.

NOTE: Opening times < 12 seconds may indicate
failure of full valve stroke. The valve is to
be visually observed during subsequent
restroking.

MO-7071 Opening Time _____ seconds
(Acceptance Criteria per Step 5.32)

CV-4101 Closed _____

Indicate whether MO-7071 was observed visually to
verify full open travel and results:

N/A _____
(OP) _____

- 5.29 While MO-7071 is open, verify that check valve
VPI-303 is adequately seated by checking for flow
through telltale located between MO-7070 and MO-7071.

Adequately Seated: Yes _____ No _____
(OP) _____

- 5.30 Close and time MO-7070 (RMC-5528) and verify
operation of substation deluge valve CV-4101.

MO-7071 Closing Time _____ seconds;
Acceptance Criteria < 24 seconds

CV-4101 Opened _____

Results Acceptable: Yes _____ No _____
(OP) _____

- 5.31 Return RMC-5527 for MO-7070 to its neutral position
and check the following:

MO-7071 Closed _____

CV-4101 Open _____

(OP) _____

- 5.32 MO-7070 and MO-7071 have met the Acceptance Criteria as shown on Table 15.5.E.1 of the Big Rock Point Technical Data Book, Volume 15.

Yes _____ No _____ N/A _____

(OP) _____

- 5.33 Check VPI- 9 locked open.

(OP) _____

- 5.34 Turn core spray flow recorder selector switch to the "Reset" position.

_____ Red Light Extinguished

_____ Chart drive stopped. Return core spray flow recorder selector switch to "Auto" position.

(OP) _____

- 5.35 Record pressure reading from PI-412, core spray ring header pressure.

_____ psig

NOTE: A pressure > 170 psig may indicate leakage from the primary system through MO-7061.

(OP) _____

- 5.36 Stop the electric fire pump.

(OP) _____

- 5.37 Reset auto test clock on RDS Cabinet "SCA", and RDS auto test fault alarm if applicable.

(OP) _____

- 5.38 Ensure "FPS" deluge isolation valve CV-4101 is open.

(OP) _____

- 5.39 Return the thermal overload keyed selector switches to the "Bypassed" position for the following (Refer to Step 3.6):

_____ MO-7066

_____ MO-7080

_____ MO-7070

_____ MO-7071

(OP) _____

- 5.40 Have a second Operator independently check component alignment and complete Attachment 1.

(OP) _____

- 5.41 Test Completed By:

(OP) _____ Date _____

(OP) _____ Date _____

(OP) _____ Date _____

6.0 REVIEWS

- 6.1 List all corrective actions necessary to complete this procedure (ie, MOs, DRs, ERs, etc).

_____ None _____

(SS) _____

- 6.2 Test logged in TV-30.

(SS) _____ ace _____

6.3 Test reviewed by:

(SS) _____ Date _____

(OTA) _____ Date _____

(OPS SUPV/SUPT) _____ Date _____

6.4 Route completed procedure to ISI Coordinator for data trending and review for compliance with ASME B&PV Code IWV-3413(C).

(ISI COORD) _____ Date _____

ATTACHMENT 1
INDEPENDENT COMPONENT ALIGNMENT VERIFICATION

<u>Component</u>	<u>Name</u>	<u>Position</u>	<u>Initial</u>
MO-7051	Primary Core Spray	Closed	_____
MO-7061	Primary Core Spray	Closed	_____
MO-7070	Back-Up Core Spray	Closed	_____
MO-7071	Back-Up Core Spray	Closed	_____
MO-7066	Core Spray Heat Exchanger Cooling Inlet	Closed	_____
MO-7080	MO-7066 Bypass	Closed	_____
RMC-5519	MO-7051 Handswitch	Normal (Not Pulled)	_____
RMC-5501	MO-7061 Handswitch	Normal (Not Pulled)	_____
RMC-5527	MO-7070 Handswitch	Normal (Not Pulled)	_____
RMC-5528	MO-7071 Handswitch	Normal (Not Pulled)	_____
RMC-5521	MO-7066 Handswitch	Normal (Not Pulled)	_____
CV-4101	Substation Deluge Isolation	Open	_____
FR-2108	Core Spray Flow Recorder Selector Switch	Auto	_____
HS-5418-1	Thermal Overload For MO-7066	Bypassed	_____
HS-B163-1	Thermal Overload For MO-7070	Bypassed	_____
HB-B152-1	Thermal Overload For MO-7071	Bypassed	_____
HS-3411-01	Thermal Overload For MO-7080	Bypassed	_____
1CS	Diesel Fuel Pump Control Switch	Auto	_____
VPI-165	PT-186 Instrument Valve	Sealed Open	_____
Test Tee	PT-186 Sensing Line Vent	Capped	_____

COMPLETED BY: (OP) _____ Date _____
(OP) _____ Date _____