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Document Control Branch (Document Control Desk)

SUBJECT: Responds to 901025 Generic Ltr 89-10 Suppl 3 re
 consideration of results of NRC sponsored tests of motor
 operated valves.RWCU valve not tested & no deficiencies
 identified in RCIC valves.

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

P.O. Box 968 • 3000 George Washington Way • Richland, Washington 99352

March 12, 1991

G02-91-050

Docket No. 50-397

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Gentlemen:

Subject: NUCLEAR PLANT NO. 2, OPERATING LICENSE NPF-21
RESPONSE TO GENERIC LETTER 89-10, SUPPLEMENT 3
(TAC NOS. 75738 AND 77801)

- Reference:
1. NRC Generic Letter 89-10, Supplement 3, "Consideration of the Results of NRC Sponsored Tests of Motor-Operated Valves", dated October 25, 1990
 2. EPRI Report NP-7065, "Review of NRC/INEL Gate Valve Test Program", Prepublication Copy date January, 1991
 3. Letter, G02-90-204, GC Sorensen (SS) to NRC, same subject, dated December 12, 1990

Generic Letter 89-10, Supplement 3 requires that BWR licensees provide a written response to Reporting Requirement number two within 120 days of their receipt of the letter. The Supply System received the reference letter November 12, 1990. The purpose of this letter is to provide such response.

The 120 day reporting requirement requested:

- a.) Criteria, reflecting operating experience and the latest test data, that were applied in determining whether deficiencies exist in the specified HPCI, RWCU and RCIC motor-operated valves and in any MOV's considered to be more safety significant;
- b.) The identification of any MOV's found to have deficiencies; and
- c.) A schedule for any necessary corrective action.

The 30 day response previously submitted (Reference 3) indicated that no MOV's have been identified with greater safety significance than those previously identified in IE Bulletin 85-03. Containment isolation valves in the steam supply lines of the High Pressure Coolant Injection (HPCI) system are not applicable to WNP-2 since we do not have a HPCI turbine. Following is the response for the RWCU and RCIC valves.

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The Supply System is participating in the EPRI MOV Performance Prediction Program and other industry groups. Further review of these specific RWCU and RCIC valves will be completed as industry data becomes available.

RWCU Valves

A detailed comparison of the RWCU isolation valves to the INEL test valves has been made in Table 1. The RWCU isolation valves at WNP-2 are deemed to be very similar to INEL valves "B" and "2" with the exception of motor size and stem thread lead. The motors are rated at 40 foot pounds starting torque versus 25 foot pounds for the INEL operators providing 60% to 90% higher motor pullout torque capability. The larger stem thread lead for the WNP-2 valves results in a higher speed valve with less thrust for a given motor size. However, the thrust is compensated for by the larger motor size for the WNP-2 valves.

A review of the first blowdown isolation test for the two INEL valves indicates a maximum apparent disk factor of 0.35 for flow isolation. This valve disk factor will be used to determine the thrust setpoints for the WNP-2 RWCU valves using the standard industry equations. It is also noted that the thrust capability of the RWCU operators with the torque switch bypassed exceeds the required closing thrust provided in Information Notice 90-40.

The RWCU valves have not yet been diagnostically tested due to inaccessibility during plant operation. The valves are currently scheduled to be tested during the 1991 Spring Refueling Outage. The identification of any deficiencies and a schedule for any potential corrective actions will be reported within 30 days following the completion of that outage if any deficiencies are identified.

RCIC Valves

A detailed comparison of the RCIC inboard isolation valve at WNP-2, RCIC-V-63, to the INEL test valves has been made in Table 2. This valve is deemed to be similar to INEL valve "6" with the exception of operator size, unit ratio, stem thread lead, and motor speed.

After review of Reference 2, it appears all blowdown closure strokes for the test valve were performed with pre-existing damage to the body guide rails and the direct applicability of the apparent disk factor to the valve at WNP-2 is questionable.

RCIC-V-63 has been diagnostically tested as part of IE Bulletin 85-03. The torque switch has been verified to be bypassed for approximately 98% of valve stroke in the close direction. The thrust capability of the operator with the torque switch bypassed has been evaluated in response to Information Notice 90-40. The thrust capability greatly exceeds the required thrust reported in Table 1 of Information Notice 90-40 thus providing a high degree of assurance of valve isolation.

The outboard isolation valve at WNP-2, RCIC-V-8, is a 4 inch Velan flexible wedge gate valve. No valves of this size were tested in the blowdown test research program, therefore a comparison of this valve to any test valve data is not made.

RCIC-V-8 has been diagnostically tested as part of IE Bulletin 85-03. The thrust setpoint for RCIC-V-8 has been established using the standard industry equations with a valve factor of 0.3. The motor operator was set up and verified to meet the required thrust setpoint during diagnostic testing. In addition, the torque switch has been verified to be bypassed for approximately 98% of valve stroke in the close direction. This will allow full actuator stall torque capability during the bypass period thus maximizing the probability of valve isolation.

No deficiencies were identified for RCIC-V-63 or RCIC-V-8, and therefore no corrective actions are necessary.

As discussed above, we will inform the NRC of any deficiencies identified during diagnostic testing of the RWCU valves. This completes the Supply System's response to Generic Letter 89-10, Supplement 3.

Very truly yours,



G. C. Sorensen, Manager
Regulatory Programs

HLA/MRG/bk
Attachments

cc: JB Martin - NRC RV
NS Reynolds - Winston & Strawn
PL Eng - NRC
DL Williams - BPA/399
NRC Site Inspector - 901A

STATE OF WASHINGTON)
COUNTY OF BENTON)

Subject: GL 89-10, Supplement 3

I, A. G. HOSLER, being duly sworn, subscribe to and say that I am the Manager, WNP-2 Licensing, for the WASHINGTON PUBLIC POWER SUPPLY SYSTEM, the applicant herein; that I have the full authority to execute this oath; that I have reviewed the foregoing; and that to the best of my knowledge, information, and belief the statements made in it are true.

DATE 3-12, 1991

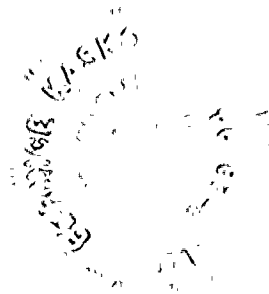
A. G. Hosler
A. G. Hosler, Manager
WNP-2 Licensing

On this date personally appeared before me A. G. HOSLER, to me known to be the individual who executed the foregoing instrument, and acknowledged that he signed the same as his free act and deed for the uses and purposes herein mentioned.

GIVEN under my hand and seal this 12th day of March 1991.

Bernie Kooko
Notary Public in and for the
STATE OF WASHINGTON

Residing at Kennewick WA
My Commission Expires 4/28/94



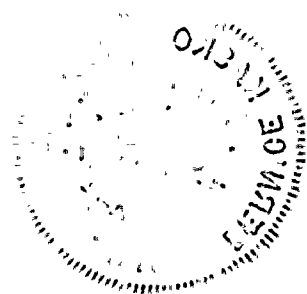


Table 1: RWCU Valve Comparison

Item	INEL Valve "B" and "2"	WNP-2 Valve RWCU-V-1 (Inboard Isolation)	WNP-2 Valve RWCU-V-4 (Outboard Isolation)
Manufacturer	Velan	Velan	Velan
Drawing Number	P2-70916-S01	P2-3311-N-4	P2-3311-N-4
Size (in.)	6	6	6
ANSI Class (lbs.)	900	900	900
Orifice Diameter (in.)	5.18	5.19	5.19
Disk Base Material	A-105	SA-216 WCB	SA-105
Disk Seat Material	Stellite 6	Stellite 6	Stellite 6
Disk Guide Material	Stellite 6 (B) , A-105 (2)	Stellite 6 or SA-105	Stellite 6 or SA-105
Body Guide Material	A-36	SA-36	SA-36
Seat Ring Base Material	A-216 WCB	SA-216 WCB or SA-105	SA-105
Seat Ring Material	Stellite 6	Stellite 6	Stellite 6
Stroke Length (in.)	5.75	5.75	5.75
Stem Diameter (in.)	1.75	1.75	1.75
Thread Type	Acme	Acme	Acme
Thread Pitch (in.)	1/4	1/4	1/4
Thread Lead (in./rev.)	1/4	1/2	1/2
Operator Model	SMB-0	SMB-0	SMB-0
Unit Ratio	34.9	34.96	41.33
Spring Pack No.	0501-184	60-600-0017-1	60-600-0017-1
Motor Pullout Torque @ Rated Voltage @ Degraded Voltage	314 ft-lbs 201 ft-lbs	503 ft-lbs 322 ft-lbs	595 ft-lbs 476 ft-lbs
Motor Speed	1800 rpm	1800 rpm	1900 rpm
Motor Voltage	460 VAC	460 VAC	240 VDC
Motor Starting Torque	25 ft-lbs	40 ft-lbs	40 ft-lbs
Operator Rated Torque	500 ft-lbs	500 ft-lbs	500 ft-lbs
Operator Rated Thrust	24,000 lbs	24,000 lbs	24,000 lbs
Valve Rated Thrust	Not Available	25,516 lbs	25,516 lbs

Table 2: RCIC Valve Comparison

Item	INEL Valve "6"	WNP-2 Valve RCIC-V-63 (Inboard Isolation)
Manufacturer	Velan	Velan
Drawing Number	P2-72916-S01	P2-3311-N-14
Size (in.)	10	10
ANSI Class (lbs.)	600	900
Orifice Diameter (in.)	7.88	7.87
Disk Base Material	A-105	SA-105
Disk Seat Material	Stellite 6	Stellite 6
Disk Guide Material	A-105	Stellite 6 or SA-105
Body Guide Material	A-36	SA-36
Seat Ring Base Material	A-105	SA-216 WCB or SA-105
Seat Ring Material	Stellite 6	Stellite 6
Stroke Length (in.)	8.75	8.5
Stem Diameter (in.)	2.5	2.5
Thread Type	Acme	Acme
Thread Pitch (in.)	1/3	1/3
Thread Lead (in./rev.)	2/3	1
Operator Model	SMB-1	SMB-2
Unit Ratio	56.6	95.58
Spring Pack No.	0701-212	60-600-0071-1
Motor Pullout Torque @ Rated Voltage	1222 ft-lbs	1806 ft-lbs
@ Degraded Voltage	782 ft-lbs	1156 ft-lbs
Motor Speed	1800 rpm	3600 rpm
Motor Voltage	460 VAC	460 VAC
Motor Starting Torque	60 ft-lbs	60 ft-lbs
Operator Rated Torque	850 ft-lbs	1250 ft-lbs
Operator Rated Thrust	45,000 lbs	70,000 lbs
Valve Rated Thrust	Not Available	57,782 lbs

