Omaha Public Power District

1623 HARNEY ■ OMAHA NEBRASKA 68102 ■ TELEPHONE 536-4000 AREA CODE 402

May 3, 1982
LIC-82-187

Mr. Robert A. Clark, Chief
U. S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Licensing
Operating Reactors Branch No. 3
Washington, D.C. 20555

Reference: Docket No. 50-285

Dear Mr. Clark:

Subject: Environmental Qualification of Safety-Related Electrical Equipment at the Fort Calhoun Station

The Omaha Public Power District's letters dated March 25, 1982 and April 2, 1982 stated that System Component Evaluation Worksheets (SCEWS) for the Conax electrical seal aging and chemical spray qualification and for the containment hydrogen analyzer Valcor isolation valves would be provided by May 1, 1982. Accordingly, attached pages 6-59A, 6-78, and 6-78B provide the subject information. A revised Enclosure 13 to the District's qualification package, which reflects the most current information regarding outstanding items, is also attached. The attached SCEWS and revised Enclosure 13 should be incorporated into the District's qualification package transmitted to the Commission by letter dated August 26, 1981.

The District is aware of proposed regulations to extend the completion date for environmental qualification of safety-related electrical equipment beyond June 30, 1982. Several outstanding items to Enclosure 13 have completion dates of June 30, 1982, based on this requirement. If the date for environmental qualification is extended, the District may request extension of the completion date for several of these items.

Sincerely,

W. C. Jones
Division Manager
Production Operations

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Attachments

cc: LeBoeuf, Lamb, Leiby & MacRae
1333 New Hampshire Avenue, N.W.
Washington, D.C. 20036

Facility: Fort Calhoun 1
Docket No.: 50-285

C-300

SYSTEM COMPONENT EVALUATION WORK SHEET

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATON		QUALIFICATION METHOD	OUTSTANDING ITEMS
	Parameter	Specification	Qualification	Specification	Qualification		
System: Electrical Equipment Item No.: CONAX Electrical Conductor Seal Assemblies Component: All Manufacturer: CONAX Model No.: N/A Function: Sealing of wires for mtrs, L-Switches, pps, inst, vv oper, inst transmtrs, etc. Accuracy - Spec: N/A Demon: N/A Service: See function Location: Containment	Operating Time	Continuous	Continuous	-	2	Analysis	NONE
	Temperature °F	305°F	340°F	1	2	Type Test	NONE
	Pressure PSIg	60 PSIg	75 PSIg	1	2	Type Test	NONE
	Relative Humidity %	100%	100%	1	2	Type Test	NONE
	Chemical Spray	1700 ppm Boric Acid	Boron & NAOH Ph of 10.5 3000 ppm	1	3	Type Test	NONE
	Radiation	Note 1	Note 1 $2x10^8R$	1	2	Type Test	NONE
	Aging	N/A	40 yrs	N/A	3	Type Test	NONE
Flood Level Elev: 1000.9' Above Flood Level: Note 2	Submergence	N/A	N/A	N/A	N/A	N/A	NONE

Documentation References:
1) Enclosure #1.
2) CONAX Qualification Report, No. IPS-409 & IPS-325
3) CONAX letter from W. C. Fredrick to R. F. Mehaffey (OPPD) dated Feb. 5, 1982

Present Qualification:
IEEE 323-1974

Notes:
1) Worst Case containment radiation equals $3x10^7R$
2) See Item 4, Enclosure 13, for those limit switches that will be moved above the submergence level.

6-59A

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R7-1

SYSTEM COMPONENT EVALUATION WORK SHEET

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATON		QUALIFICATION METHOD	OUTSTANDING ITEMS
	Parameter	Specification	Qualification	Specification	Qualification		
System: H_2 Analyzer Item No.: HCV 820A HCV 821A HCV 883B HCV-884B Component: Solenoid Valve Manufacturer: Valcor Model No.: V 52660-5295-68 Function: H_2 Analyzer Iso valves Accuracy - Spec: N/A Demon: N/A Service: See function Location: Room 59	Operating Time	1000 hrs	45,000 cycles	Note 1	2	Type Test	NONE
	Temperature °F	N/A	N/A	N/A	N/A	N/A	NONE
	Pressure PSIg	N/A	N/A	N/A	N/A	N/A	NONE
	Relative Humidity %	N/A	N/A	N/A	N/A	N/A	NONE
	Chemical Spray	N/A	N/A	N/A	N/A	N/A	NONE
	Radiation	$8x10^5R$	$2x10^8R$	1	2	Type Test	NONE
	Aging	N/A	40 yrs	N/A	2	Type Test	NONE
Flood Level Elev: N/A Above Flood Level:	Submergence	N/A	N/A	N/A	N/A	N/A	NONE

Documentation References:
1) "Implementation Methods and Schedules for NUREG-0578" Section 2.1.6B Page 18, Fig. 4.2-3 (December 1979)
2) Valcor Qual. Report QR52600-5940-2

Notes:
1) See Enclosure #14

Present Qualification:
IEEE 323-1974

6-78

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SYSTEM COMPONENT EVALUATION WORK SHEET

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATON		QUALIFICATION METHOD	OUTSTANDING ITEMS
	Parameter	Specification	Qualification	Specification	Qualification		
System: H_2 Analyzer Item No.: HCV 820B HCV 821B	Operating Time	Continuous	45,000 cycles	1	2	Type Test	NONE
	Temperature °F	305°F	346°F	1	2	Type Test	NONE
Component: Solenoid Valve Manufacturer: Valcor Model No.: V 526-5891-15	Pressure PSIg	60 PSIg	113 PSIg	1	2	Type Test	NONE
	Relative Humidity %	100%	100%	1	2	Type Test	NONE
Function: H_2 Analyzer Isolvalves	Chemical Spray	1700 ppm Boron	Boron Acid 9.5-10.5 ph Note 1	1	2	Type Test	NONE
Accuracy - Spec: N/A Demon: N/A Service: See function Location: Containment	Radiation	5.82x10^{5}R	2x10^{8}R	1	2	Type Test	NONE
	Aging	N/A	40 yrs	N/A	2	Type Test	NONE
Flood Level Elev: 1000.9' Above Flood Level: Yes	Submergence	N/A	N/A	N/A	N/A	N/A	NONE

Documentation References:
1) Enclosure #1.
2) Valcor Qual. Test Report QR52600-5940-2

Notes:
1) The only materials exposed to the spray solution are type 316 stainless steel (body), nickel plating (solenoid shell and cover), and the ethylene propylene O-rings which seal the interior solenoid assembly from the environment.

Present Qualification:
IEEE 323-1974

6-788

Enclosure 13
Outstanding Items

1. The aging and qualified life maintenance program will be implemented by June 30, 1982.

2.* FT-236 was relocated from a harsh environment to a "normal room environment" (the corridor outside of Room 13) during the 1981 refueling outage.

3. The Conax penetration testing will be completed by June 30, 1982.

4. The District has completed a submergence evaluation and expects to move the following electrical equipment above the flood level in containment during the 1982/1983 refueling outage:

Limit Switches and Solenoids	Limit Switches Only	Flow Transmitters
HCV-467A	HCV-238	FT-313
HCV-467C	HCV-239	FT-316
HCV-438A		FT-318
HCV-438C		FT-322
HCV-1387A		
HCV-1388C		

5. The District plans to re-evaluate the radiation dose received by equipment just above the containment flood level. This will be completed by June 30, 1982.

6. In investigating the effects of chemical spray, the FSAR value of 1700 ppm boron was used. In discussions with the plant staff, the concentration for the Safety Injection and Refueling Water Storage Tank is maintained at up to 2500 ppm boron. The District feels that this will not effect the equipment, however, the question is being re-evaluated. This will be completed by June 30, 1982.

7. To insure proper evaluation of the radiation effects in containment, the District requests the NRC's concurrence on its use of the DOR guidelines to establish containment radiation doses.

8.* The District has completed the radiation calculations for Auxiliary Feedwater Valves HCV-1107A and HCV 1108A due to their proximity to the RCS and has determined that the integrated dose received would be 4.96×10^6 RADS. This valve is much lower than the radiation qualification dose for these valves of 2.04×10^8 RADS.

   The District has completed the radiation calculations for VA-3A and VA-3B due to their proximity to the charcoal filters and has determined that the integrated dose received would be 8.64×10^6 RADS. This valve is much lower than the radiation qualification dose for these fan motors of 1.0×10^8 RADS.

9. The District will complete evaluation of FT 416, 417, 418 and 419 by June 30, 1982.

Enclosure 13
Outstanding Items (Continued)

10. The District plans to complete testing of the Fisher 304 limit switch by June 30, 1982.

11.* The limit switches and Valcor solenoid valves in containment were replaced with environmentally qualified components during the 1981 refueling outage.

12.* The solenoid valves and limit switch in the auxiliary building were replaced with environmentally qualified components during the 1981 refueling outage.

13. TE 866 and TE 867 will be replaced during the first refueling outage after receipt of qualified parts.

14. Qualified Safety Related Equipment will be identified and marked with orange in the control room and operator training will be completed by June 30, 1982.

15. The District is in the process of verifying the 100 day dose qualification for the Accident Monitoring Instrumentation Modifications items.

*These items are complete.