SNUPPS

Standardized Nuclear Unit Power Plant System

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Executive Director

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SLNRC 84-0021 FILE: 0278
SUBJ: Environmental Qualification of Equipment

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Docket Nos. STN 50-482 and STN-483

References: 1. NRC letter (B. Youngblood) to Kansas Gas & Electric (G. Koester) dated December 19, 1983: Supplement No. 4 to the Wolf Creek Generating Station, Unit 1 Safety Evaluation Report
2 SLNRC 83-0061, dated November 23, 1983: Same Subject

Dear Mr. Denton:

Reference 1 included the NRC staff evaluation of the environmental qualification program for the SNUPPS plants - Callaway Plant and Wolf Creek Generating Station. Reference 2 provided information regarding the SNUPPS qualification programs for electrical and mechanical equipment and addressed several of the issues identified in Reference 1.

The enclosure provides additional information to resolve the outstanding items identified in the conclusions section of the NRC staff's evaluation.

Very truly yours,

Nicholas A. Petrick

MHF/nld8a7
Enclosure

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Enclosure

ADDITIONAL INFORMATION TO RESOLVE OUTSTANDING ENVIRONMENTAL QUALIFICATION ITEMS

1. Qualification of TMI Action Plan Equipment

The NRC staff evaluation of the SNUPPS qualification program notes that the SNUPPS response to TMI Action Plan Item II.F.1, Attachment 1 is under review by the NRC staff. In Section 22 of Supplement 4 to the Wolf Creek Safety Evaluation Report, the NRC staff has concluded that the type, make and model, calibration, and operation of the SNUPPS high range post accident effluent monitors are acceptable and that TMI Action Plan Item II.F.1, Attachment 1 is complete.

2. Qualification of Regulatory Guide 1.97 Equipment

The SNUPPS response to this issue has been provided in the enclosure to SLNRC 83-0061, dated November 23, 1983, in item 1, "Compliance with 10CFR50.49(b)(3)".

3. Qualification of Mechanical Equipment

The status of the SNUPPS mechanical equipment qualification review was provided at approximately 50% program completion (SLNRC 83-0061, dated November 23, 1983). The program status at the present time is shown in the attached tables. Wolf Creek SER Supplement No. 4 indicates that the NRC staff will base an evaluation of program acceptability on a review of three equipment packages to evaluate the documentation supporting environmental qualification. The NRC staff has selected equipment packages M-088, J-517A, and J-301 for review. Based on the results of the NRC review and completion of the remaining packages a final report to support the scheduled Callaway fuel load will be provided by March 15, 1984.

4. Surveillance of Safety-Related Cables Inside Containment

The SNUPPS Utilities are planning to perform periodic surveillance which is capable of detecting age-related degradation of power cables. This has been described to the NRC in SLNRC 83-0042, dated July 28, 1983. Based on a review of cable types and materials, the previously described program does not envelope the types and materials of all safety-related cables inside containment. Therefore, a program will be implemented to periodically inspect selected cables inside containment. The cables will be selected by type and material to envelope SNUPPS instrument and control cables. The location or locations of the inspected cables will be selected in areas where higher temperature and radiation fields are anticipated. The inspection will be a visual check of the cables to identify signs of degradation, i.e., cracking, flaking, discoloration or powdering of

the exterior of the cable. Because all of the SNUPPS safety-related cables have undergone an IEEE-323-1974 qualification program, which included pre-aging, and all have a qualified life of 40 years, rapid degradation of the cables would not occur; and, therefore, the visual inspection will be periodically repeated once every five years. The first inspection (baseline) will be scheduled prior to commercial operation of the SNUPPS plants.

5. Implementation of Maintenance/Surveillance Programs

The SNUPPS response to this issue was provided in SLNRC 83-0061, dated November 23, 1983.

6. Outstanding Equipment - Justification for Interim Operation

A review of equipment qualification programs has been performed to identify those which will not be completed or for which identified follow-up actions will not be completed prior to fuel load. Based on this review, justifications for plant operation with outstanding qualification issues are necessary for certain programs. These justifications are being transmitted to the NRC via separate correspondence.

7. Equipment Requiring Additional Information and/or Corrective Action

Section 3.11.4.1.2 of Wolf Creek SER Supplement No. . discusses deficiencies in the qualification status of certain equipment types and notes that the applicant should resolve these deficiencies and document the resolutions in an auditable form.

The SNUPPS Utilities have reviewed the concerns identified in Section 3.11.4.1.2 and determined that, with some exceptions, either the concern is not applicable to the SNUPPS equipment or the qualification programs for the SNUPPS equipment adequately resolve the deficiencies and the resolution is in an auditable form. The fe exceptions have been evaluated and justifications for interim operation have been developed. These justifications are being transmitted to the NRC via separate correspondence.

The SNUPPS Utilities are awaiting the results of the NRC staff investigation of Rockbestos cable which is discussed in Section 3.11.3.4 and included in Section 3.11.4.1.2.

8. Audit Item - Completeness of Qualification Documentation

The SNUPPS response to this issue was provided in SLNRC 83-0061, dated November 23, 1983.

9. Audit Item - Equipment Installation

The SNUPPS response to this issue was provided in SLNRC 83-0061, dated November 23, 1983.

10. Audit Item - Pre-aging of Limitorque Switch Component

A justification for interim operation of the SNUPPS plants in accordance with 10CFR50.49(i) is being submitted to the NRC via separate correspondence to address this issue.

11. Audit Item - Test Acceptance Criteria

The SNUPPS response to this issue was provided in SLNRC 83-0061, dated November 23, 1983. The reevaluation of qualification status of terminal blocks and Limitorque switches has been completed. The terminal blocks are discussed in item 14 below, and the switches were discussed in item 10 above.

12. Audit Item - Completeness of Equipment Installation

The SNUPPS response to this issue was provided in SLNRC 83-0061, dated November 23, 1983.

13. Audit Item - Sealing of Limitorque Actuators

The SNUPPS response to this issue was provided in SLNRC 83-0061, dated November 23, 1983.

14. Audit Item - Qualification of Terminal Blocks

Based on a reevaluation of the test acceptance criteria for terminal blocks, the SNUPPS Utilities are currently installing splices in instrument circuits to bypass the terminal blocks. The applicable terminal blocks are those located inside containment for SNUPPS Specifications E-028 and E-035B. The splice materials and design are qualified for in-containment use at the SNUPPS plants under Specification E-01013.

MECHANICAL EQUIPMENT QUALIFICATION SUMMARY (1)

Specification	Description	Review Status	Review Results	Follow-Up Act. Req'd.	Comments
C-Sump	Containment Sump Screen	IP			
C151/C153	Containment Hatches	IP			
J301	Pressure Transmitters	C	Q	No	
J359	Hydrogen Monitoring System	C	Q	No	Qualified under electrical equipment program
J425	Flow Element	C	Q	No	
J517A	Pressure Switches and Indicators	C	Q	No	
J555/J558/ J558B	Thermowell	C	Q	No	
J603A	Check Valves	C	NQ	Yes	See Follow-Up Action Table
J705	Instrument Valves	C	Q	No	
M088	Pump	C	Q	No	
M105B	Tanks, ASME III	C	Q	No	
M109A	Tanks	C	Q	No	
M140	Safety Valves	C	Q	No	
M141-1	Relief Valves	C	Q	No	
M141-2	Relief Valves	C	Q	No	
M153	Eductor	C	Q	No	

Mechanical Equipment Qualification Summary (1)

Specification	Description	Review Status	Review Results	Follow-Up Act. Req'd.	Comments
M155	Spray Nozzles	C	Q	No	
M218A	Mechanical Snubber	IP			
M221	Valves	C	Q	No	
M223A	Valves	C	Q	No	
M223B	Valves	C	Q	No	
M223C	Valves	C	Q	No	
M224A	Valves	C	Q	No	
M224B	Valves	C	Q	No	
M225	Valves	C	Q	No	
M231A	Valves	C	Q	No	
M231B	Valves	C	Q	No	
M231C	Valves	C	Q	No	Active vlv.limit-orque oper.qual. via elec. prog.
M236	Valves (Butterfly)	C	Q	No	Qualified under elec. equip.prog.
M237	Valves (Butterfly)	C	Q	No	Qualified under elec. equip.prog.
M240	Valves	C	Q	No	
M243	Valves	C	Q	No	
M612	Room Coolers	IP			
M627A	Ventilation Dampers	C	Q	No	

MECHANICAL EQUIPMENT QUALIFICATION SUMMARY (1)

Specification	Description	Review Status	Review Results	Follow-Up Act. Req'd.	Comments
M628	Valves (Main Steam Isolation)	C	Q	No	Active func. qual.via elec. prog.
M630	Valves (Main Feedwater Isolation)	C	Q	No	Active func. qual.via elec. prog.
M703	Reactor Vessel Internals	C	Q	No	
M705	Reactor Flux Thimbles	C	Q	No	
M706	Reactor Vessel	C	Q	No	
M709	Control Rod Drive Mechanism	C	Q	No	
M711	Steam Generator	C	Q	No	
M712	Reactor Coolant Pump	C	NQ	Yes	See following action table
M713	Pressurizer	C	Q	No	
M717	Hydraulic Snubbers	IP			
M721	Pumps (NSSS)	IP			
M722	Heat Exchangers	C	Q	No	
M723	Filters and Tanks (3 sub-packages)	IP			
M724	Valves (NSSS, 12 sub-packages)	IP			
M725	Resistance Temperature Detector Manifold	C	Q	No	
M771	Transmitters and Switches (NSSS)	IP			
W(ESE-21)	Pressure Sensor	C	Q	No	Qual. under elec. equip. program

MECHANICAL EQUIPMENT QUALIFICATION SUMMARY (1)

Specification	Description	Review Status	Review Results	Follow-Up Act. Req'd.	Comments

Notes:

(1) The following symbols are utilized in the indicated columns of this table:

Review Status:

C = Complete
IP = In Progress
NS = Not Started

Review Results:

Q = Qualified
NQ = Not Qualified

FOLLOW-UP ACTION

SPECIFICATION	FOLLOW-UP ACTION
J-603A	O-rings sealing seat to disc and body to bonnet not qualified to in-containment worst case radiation and temperature. Vendor has been requested to provide his qualification basis. Alternatives include possible replacement with Silicone (as in EQWP J-603A) or location specific temperature and radiation dose calculations.
M-712	Available data do not show shaft seal non-metallic compounds to be qualified for in-containment worst case post-accident radiation. Vendor has been requested to provide qualification basis. Alternatives include assessment of leak impact if and when failure occurs.