



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

50-482
50-483

MAY 17 1984

MEMORANDUM FOR: Vincent S. Noonan, Chief
Equipment Qualification Branch
Division of Engineering

FROM: Arnold Lee
Equipment Qualification Branch
Division of Engineering

THRU: Goutam Bagchi, Section Leader
Equipment Qualification Branch
Division of Engineering

SUBJECT: TRIP REPORT FOR SEISMIC QUALIFICATION REVIEW TEAM (SQRT)
PLANT SITE AUDIT - CALLWAY UNIT 1 AND WOLF CREEK UNIT 1

The Seismic Qualification Review Team (SQRT), consisting of staff from Equipment Qualification Branch (EQB), and from Idaho National Engineering Laboratory (INEL), the consultant, conducted a plant site audit, on December 5 through December 9, 1983, at Callaway 1 and Wolf Creek 1, each belonging to Standardized Nuclear Unit Power Plant System (SNUPPS). The purpose of the audit is two-fold: (1) to perform a plant site review of the seismic and dynamic qualification methods, procedures, and results for selected safety-related mechanical and electrical equipment and their supporting structure, and (2) to observe the field installation of the equipment in order to verify and validate equipment modeling employed in the qualification program.

The background, review procedures, findings and the required follow-up actions are summarized below. A list of attendees in the exit conference at Wolf Creek site is contained in Attachment I, and a list of the equipment selected for audit is shown in Attachment II.

I. Background

The SNUPPS has described the equipment qualification program in Sections 3.9 and 3.10 of the Final Safety Analysis Report, consisting of dynamic testing and analy-

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sis, used to confirm the ability of seismic Category I mechanical and electrical (includes instrumentation, control and electrical) equipment and their supports, to function properly during and after the safe shutdown earthquake (SSE) specified for the plant.

The plant site review was performed to determine the extent to which the qualification of equipment, as installed in Callaway 1 and Wolf Creek 1, meets the current licensing criteria described in IEEE 344-1975, "Recommended Practices for Seismic Qualification of Class IE Equipment for Nuclear Power Generating Stations," and Regulatory Guides 1.92, "Combining Modal Responses and Spatial Components in Seismic Response Analysis," 1.100, "Seismic Qualification of Electrical Equipment for Nuclear Power Plants," and the Standard Review Plan (NUREG-0800) Section 3.10. Conformance with these criteria is required to satisfy the applicable portions of the General Design Criteria in 1, 2, 4, 14, 18 and 30 of Appendix A to 10 CFR Part 50, as well as, Appendix B to 10 CFR Part 50 and Appendix A to 10 CFR Part 100.

II. Review Procedures

Prior to the site visit, the SQRT reviewed the equipment seismic qualification information contained in the pertinent FSAR sections and the reports referenced therein. A representative sample of 15 safety-related electrical and mechanical equipment, as well as instrumentation, included in both NSSS and BOP systems see Attachment II, was selected for audit at both Callaway and Wolf Creek plant sites. These selected equipment items covered both equipment in the SNUPPS scope as well as the Wolf Creek-specific equipment housed in its Essential Service Water Pump-house. The plant-site visits consisted of field observations of the actual, final equipment configuration and its installation. This was immediately followed by the review of the corresponding test and/or analysis documents

which the applicant maintains in his central files. Observation of the field installation of the equipment is required in order to verify and validate equipment modeling employed in the qualification program. Brief technical discussions were held during the review sessions to provide SQRT's feedback to the applicants on the equipment qualification. An exit conference was held to summarize and conclude the plant site visit.

III. Review Findings

The SQRT audit revealed that the applicants' equipment seismic and dynamic qualification program had been, in general, adequately implemented. For the 15 equipment items audited, the SQRT found their qualification to be acceptable with the exception of certain details which would need to be further clarified by the applicants. The only generic concerns that remained to be resolved by the applicants are the surveillance and maintenance program and the establishment of central filing systems for both of the SNUPPS plants, as are discussed in Section IV, Follow-Up Actions. Summaries of the SQRT review for each equipment item are presented in Attachment III, the INEL Evaluation Report.

IV. Follow-Up Actions

In order to complete our review we have requested the applicants to take the following actions:

- (1) Confirm that all safety related IE and age sensitive mechanical components in both harsh and mild environments are covered in surveillance and maintenance program and also that qualified life of these equipment items are estimated.
- (2) Based on the procedure of document retrieval as presented during the site audit, inform the staff when such a filing system is in place, prior to the fuel load.
- (3) Provide resolutions to all the equipment specific concerns as identified during the site audit and as detailed in Attachment III, INEL Evaluation Report.

V. Conclusion

Based on the results of the site audit conducted at Callaway 1 and Wolf Creek 1,

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we conclude that an adequate seismic and dynamic qualification program has been defined for both SNUPPS plants which will provide adequate assurance that such equipment will function properly during and after the Safe Shutdown Earthquake. Our review of the applicants' qualification program will be continued until all the follow-up actions as indentified in Section IV of this report are completed to the SQRT's satisfaction.

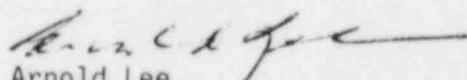
Arnold Lee
Equipment Qualification Branch
Division of Engineering

Enclosure: As stated

- cc: J. P. Knight (w/o enclosure)
- T. Novak (w/o enclosure)
- B. Youngblood (w/o enclosure)
- G. Bagchi (w/o enclosure)
- J. Holonich
- P. O'Connor
- J. Singh (INEL)
- G. Hofmayer (BNL)
- A. Lee
- PDR

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A. Lee

Attachment I
List of Attendees

Bharat Ajmani	Bechtel
John Canale	Bechtel
Harold Chernoff	KG&E
Dennis Egan	Bechtel
M. Fletcher	SNUPPS Staff
Joe Holonich	NRC--Licensing
Mark Kamenic	W NTD
Rick King	GSU
W. Koehler	UE
Arnold Lee	NRC/EQB
Vern Luckert	KG&E
T. Matty	W NTD
J. Marden	UE
J. McInerney	W NTD
Dennis Mears	UE
Pete McMahon	Bechtel
Greg Miller	EG&G Idaho, Inc.
V. Miselis	W NTD
V. Noonan	NRC/EQB
Jim Parello	W NTD
John Prebula	Bechtel
Rodney Robinson	KG&E
Tom Rahl	EG&G Idaho, Inc.
D. Reiff	NRC
Jag Singh	EG&G Idaho, Inc.
Candace Sprout	KG&E
Tony Tocci	Bechtel
J. Utt	Bechtel
D. T. Wingbermaehle	UE
Russ Werner	Bechtel
Bert Yates	UE
Otto Maynard	KG&E
D. Shafer	UE

Attachment II

Callaway & Wolf Creek

Equipment Selected for SQRT Audit
(12/5 - 12/8/83)

NSSS

1. Steam Generator A Loop 1 (BB-EBB01A)
2. RCS Crossover Leg Flow Transmitter Loop 1 (BB-FT-0416)
3. Pressurizer PORV (BB-PCV-0455A)
4. Pressurizer Level Transmitter (BB-LT-0459)
5. Reactor Coolant Pump (BB-PBB01A)
6. Wide Range Containment Pressure Transmitter (GN-PT-0938)
7. (Relief) Pressurizer Safety Relief Valve (BB-V-8010A)
8. Steam Generator Water Level (AE-LI-0504)

BOP

1. Main Steam Isolation Valve Loop 2
2. (Air) Turbine AF Pump Discharge to SG C (AL-HV-0012)
3. Essential Service Water Pump A & Motor (EF-1PEF01A & DPEF01A)
4. DG Engine Gauge Panel B (KJ-KJ122)
5. NB01 (SWGR)
6. NG 02B (Motor Control Center)
7. Electrical Penetration Assemblies (ZSE/ZSI)