



PSEG

Public Service
Electric and Gas
Company

80 Park Plaza, Newark, NJ 07101 / 201 430-8217 MAILING ADDRESS / P.O. Box 570, Newark, NJ 07101

Robert L. Mittl General Manager
Nuclear Assurance and Regulation

November 27, 1985

Mr. Karl Kniel
Division of Safety Technology
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Kniel:

SEISMIC QUALIFICATION OF EQUIPMENT
IN OPERATING POWER PLANTS -
NRC PROPOSED RESOLUTION,
50 FR 35884-35885

We have reviewed NUREG-1030, "Seismic Qualification of Equipment in Operating Nuclear Power Plants," and its related Regulatory Analysis and Draft Generic Letter, and concur with the approach being undertaken by the NRC staff and the Seismic Qualification Utility Group to resolve this issue. Public Service Electric and Gas Company is a member of the Seismic Qualification Utility Group.

We endorse the attached comments offered by the Seismic Qualification Utility Group, dated November 12, 1985, particularly those regarding the Generic Letter reference to the schedule for implementation of requirements (consistency must be maintained with pages 17 and 20 of the Regulatory Analysis) and the recommendation that completion dates be established on a plant-specific basis in the Regulatory Analysis (fourth paragraph of page 13), since 28 months may not be appropriate for all utilities.

Very truly yours,

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PDR NUREG
1030 C PDR

Attachment

C Richard E. Schaffstall - KMC, Inc.

Y601
1/1

The Energy People

Seismic Qualification Utility Group

801 18th Street NW Suite 300

Washington, D.C. 20006

NEIL P. SMITH

Chairman

November 12, 1985

Mr. Karl Kniel
Division of Safety Technology
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

RE: Draft NUREG-1030, Seismic Qualification of Equipment in
Operating Nuclear Power Plants and the Regulatory Analysis
for the Proposed Resolution of Unresolved Safety Issue (USI
A-46 Issued for Comment September 12, 1985.

Dear Mr, Kniel:

The Seismic Qualification Utility Group (SQUG) commends the NRC staff in the responsible approach reflected in the referenced documents to resolve USI A-46, Seismic Qualification of Equipment in Operating Nuclear Power Plants. The program leading to this resolution recognized the viability of using experience data to assure survivability and operability of equipment required for safe shutdown during and/or subsequent to a seismic event. These facts notwithstanding, SQUG is concerned that certain statements in the referenced documents need reconsideration and/or clarification in order that implementation of USI A-46 proceed in a manner which will be beneficial to the NRC staff and the industry. SQUG is therefore pleased to offer the accompanying comments.

Sincerely,



Neil P. Smith
Chairman

251180100

SEISMIC QUALIFICATION UTILITY GROUP LIST

American Electric Power Co.
Arkansas Power & Light Co.
Baltimore Gas & Electric Co.
Boston Edison Co.
Carolina Power & Light Co.
Commonwealth Edison Co.
Consolidated Edison Co.
Consumers Power Co.
Detroit Edison Co.
Duke Power Co.
ENEL ctn/NIRA
Florida Power Corp.
Georgia Power Co.
GPU Nuclear Corp.
INTERCOM/Electrobel
Iowa Electric Light & Power Co.
Maine Yankee Atomic Power Co.
Nebraska Public Power District
New York Power Authority
Niagara Mohawk Power Corp.
Northeast Utilities Service Co.
Northern States Power Co.
Omaha Public Power District
Philadelphia Electric Co.
Public Service Electric & Gas Co.
Rochester Gas & Electric Co.
Sacramento Municipal Utility District
Southern California Edison Co.
Tennessee Valley Authority
Toledo Edison Co.
Vermont Yankee Nuclear Power Corp.
Virginia Power Co.
Wisconsin Electric Power Co.
Wisconsin Public Service Corp.
Yankee Atomic Electric Co.

COMMENTS ON NUREG-1030
"SEISMIC QUALIFICATION OF EQUIPMENT
IN OPERATING NUCLEAR PLANTS"

1. The new or revised backfit rule, 10 CFR 50.109 which became effective October 21, 1985, has not been applied to the resolution of USI A-46. NUREG-1030 and its attendant Regulatory Analysis document does not properly quantify the benefits nor adequately estimate the costs of the proposed licensing requirements.
2. Recommend modification to the abstract to include the first paragraph of section 1.3 on page 1-3.
3. Page 1-3, top of page: "In February, 1984, SSRAP released its draft report...." Please include the word draft if February, 1984 is the date otherwise use February, 1985 for release of the SSRAP report. Please check the document for similar errors elsewhere.
4. Page 1-4, Section 1.3.1: It is recommended that the complete set of conclusions be presented here, including caveats and exclusions. Later sections could then refer to this section.
5. Pages 1-5: Paragraph 1.3.3, pertaining to equipment outside the scope of the seismic experience data base, implies that the scope of the equipment covered by the experience data base is limited to the initial eight equipment classes covered explicitly in the SQUG pilot program. This paragraph should be clarified consistent with our understanding of the

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final staff position endorsed by CRGR. Specifically, it should indicate that gathering of additional experience data on equipment not in the original eight classes of equipment may be done by documentation of engineering judgment that the eight classes studied in the SQUG pilot program are similar to and representative of a broader cross section of typical mechanical and electrical equipment. Documentation of specific extension of experience data to other classes of equipment by this method would be reviewed and concurred in by SSRAP and the NRC staff.

6. Page 2-2, Table 2.1-1: The list of SQUG members is out of date and contains errors. Please use the list provided as Enclosure 1 to these comments.

7. Page 2-29, top of page: Please revise as underlined.

Chairman - Robert P. Kennedy (Structural Mechanics
Associates)

Vice-Chairman - Walter A. von Riesemann (Sandia National
Laboratories)

8. Page 2-54, Section 2.1.4.3.1: The discussion of the questionnaire and the attendant responses tend to be misleading. Reporting of failures was not limited to the original 8 classes of the Pilot Program. Nor is it clear how the word "study" is being applied.
9. Page 2-56: There are no conclusions derived from the citing of the failures enumerated at the bottom of page 2-56. It appears that some explanation is in order.

10. Page 2-63 and 2-64, Section 2.1.5.6, Section 2.1.5.7: Data is being expanded to include results from Chilean earthquake. These sections should reflect that fact.

COMMENTS ON NUREG-1030

ATTACHMENT "REGULATORY ANALYSIS FOR

PROPOSED RESOLUTION OF USI A-46"

11. Page 4: The third paragraph on this page indicates that for replacement of equipment and/or parts in plants subject to A-46 requirements, future replacements must be verified for seismic adequacy either by using A-46 criteria and methods or as an option, qualification by current licensing criteria. In discussions with NRC and CRGR staff representatives in Williamsburg, Virginia, in July 1985, it was clarified that this requirement should apply to replacement of equipment and/or parts made necessary as a result of resolution of USI A-46, as well as to replacements performed for other reasons - both regulatory and non-regulatory. It is recommended that this paragraph be clarified to indicate that these alternative criteria apply to replacements made for any reason. This comment also applies to the first paragraph of page 6, Appendix A.
12. Page 4: Paragraph 2.(1) indicates that the seismic event does not cause a LOCA and a LOCA does not occur simultaneously with or as the result of a seismic event. This paragraph should be further clarified to indicate that main steam and other high energy line breaks are also not assumed to occur simultaneously with the seismic event.

13. Page 7, Section 3, third sentence: This statement appears to refer to passive not active components. The concern should not affect resolution of USI A-46. It is the basis for plant licensing considering single failure criteria.
14. NUREG 1030 and Appendix A to the proposed generic letter include SSRAP conclusions, caveats or exclusions. It should be made clear that these are typical and subject to change as more data are gathered and evaluated.
15. Page 3: Paragraph 3, Requirements for Plant Shutdown, lists four functions required to be performed in conjunction with an earthquake. These include bringing the plant to hot shutdown, maintaining support systems necessary for hot shutdown, maintaining control room functions, including instrumentation and controls, necessary to monitor hot shutdown and providing AC and DC emergency power. The latter function should not be included in the basic functions listed, since the need for AC and/or DC emergency power in order to meet the first three functions is a plant-specific consideration. As an example, AC emergency power may not be required to meet the basic safe shutdown functions in some plants for a considerable time after the earthquake. It is recommended that item (4) therefore be deleted from this paragraph.
16. Page 8: Paragraph 4 indicates that the results of the SQUG (Generic Group) study will be accessible to all utilities. It is not clear at this time that results of the SQUG program will be accessible to non-member utilities. Further, the

generic implementation procedures will likely not be available to non-member utilities. This paragraph should be revised accordingly.

17. Page 9: Figure 1 identifies review of relays and other equipment needed for functional capability as an essential part of the A-46 implementation. It is suggested that relays are the only types of equipment whose only functional capability needs to be verified as part of the implementation of A-46. Functional capability of other equipment is covered by the SQUG data base. Examples of such equipment include motors, power operated valves, pumps, motor generator sets, etc. It should be made clear that these equipments do not require additional functional capability review.
18. Page 11: A statement should be added after the first sentence on this page which indicates that "This list is based on SQUG polls of member utilities and is expected to include all of the types of safe shutdown equipment in nuclear power plants; plant-specific lists to be generated as part of the implementation of A-46 are expected to be shorter."
19. Page 11: The discussion regarding use of floor response spectra on this page should recognize that SQUG is considering efforts to extend application of SSRAP bounding spectra to equipment installed at elevations greater than 40 feet above grade by the use of appropriate amplification factors. This approach should be permitted for equipment mounted over 40 feet above grade with SSRAP/NRC approval.

Examples of those power operated relief valves which are represented in conventional power plants include solenoid actuated valves and Dresser/Crosby type electromatic relief valves.

26. Page 15: The discussion of requirements for replacement parts should be clarified to indicate that replacement parts installed as a result of the A-46 review or for other reasons may be verified using A-46 criteria or as an option, qualification by current licensing criteria.
27. Page 16: Comment 19 above applies to the third paragraph on this page regarding treatment of equipment mounted greater than 40 feet above grade.
28. Page 17, first paragraph: Comment 20 applies to this paragraph as well in regard to use of "all."
29. Page 17: Paragraph 6 (3) indicates that the Generic Group will assume responsibility for the implementation and will make provision for systematic and consistent plant-specific reviews. Since it is not possible for the Generic Group to assume responsibility for the implementation on specific plants, this should be revised as follows: "The Generic Group would develop generic implementation procedures for the systematic and consistent plant-specific reviews." Similarly, Subparagraph (a) of this paragraph should indicate that the Generic Group would submit to the NRC a generic schedule for development of implementation procedures and for training seminars for participating utilities, in lieu of requiring

the Generic Group to submit a generic schedule for implementation of A-46 requirements.

30. Page 18: Paragraph (g) This paragraph seems to state that JCO's are required for all identified deficiencies. This should be clarified in that it is anticipated that most deficiencies will not present a serious safety concern and therefore should not require JCO's. This comment also applies to paragraph (4) on Page 8, Appendix A.
31. Page 19: Subparagraph (h) specifies certification requirements for the Generic Group. Since each participating utility is responsible for his own plant, the requirement for Generic Group certification of the completion of walk-through certification or the completion of walk-through inspections by individual utilities is not considered appropriate. The Generic Group would provide a report of audits performed and results of these audits. Similarly, rather than requiring endorsement of the Generic Group audit report by SSRAP, it is suggested that SSRAP should be required to report on results of any reviews and audits performed by them.
32. Page 19: The generic resolution plan should indicate whether plant-specific SERs will be prepared by the NRC staff.
33. Page 20, Last Paragraph: Again the word all. Not only does the staff appear unwilling to simplify plant walkdowns (see comment 20), it appears bent on conducting complete plant reviews. This appears unnecessary. Suggest deleting the word all.

34. Pages 26-35: Present cost estimates which are part of the NRC cost-benefit analysis. While we agree that the selected approach offers considerable advantages over meeting current licensing requirements, we concur with the comment in the first paragraph of page 30 that the NRC cost estimates are low by a substantial amount.
35. Page 38: The estimated schedule requirements given on this page are considered optimistic and are not justified. It is recommended that schedules for implementation of A-46 be based on discussions with the Generic Group and ultimately with individual utilities. Imposition of specific completion dates is inconsistent with NRC policy on integrated schedules as indicated in Generic Letter 83-20 dated May 9, 1983, and is not warranted by the safety importance of this unresolved safety issue.
36. Appendix A: In general, the comments outlined above also apply to the draft Generic Letter and its enclosure which are included as Appendix A to the NRC regulatory analysis. In addition, the draft Generic Letter should be clarified to indicate the following:
 - ° Submittal for a schedule for implementation of requirements should be compatible with that specified on pages 17 and 20 of the Regulatory Analysis.
 - ° The technical basis for the NRC's conclusion that seismic adequacy of equipment must be verified is

documented in Reference 3, not References 1 and 2, the SQUG/SSRAP reports.

- ° The statement that the requirement for verification of seismic adequacy is based principally on work performed by SQUG is not correct. Instead, the statement should be revised to indicate that the technical resolution of USI A-46 is based principally on work performed by SQUG.

The SQUG program results do not support the NRC requirement for verification of the seismic adequacy of equipment in operating nuclear power plants.

37. Appendix A, Page 3, Last Paragraph: It should be clarified that all members of the inspection team are not required to participate in all parts of the walk-through.