



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

SEP 22 1986

TO ALL LICENSEES AND HOLDERS OF AN APPLICATION FOR AN OPERATING LICENSE

Gentlemen:

SUBJECT: INFORMATION RELATING TO COMPLIANCE WITH 10 CFR 50.49, "ENVIRONMENTAL QUALIFICATION OF ELECTRIC EQUIPMENT IMPORTANT TO SAFETY FOR NUCLEAR POWER PLANTS", (GENERIC LETTER 86-15)

Generic Letters, Bulletins, and Information Notices have been issued to provide guidance and clarify the intention of 10 CFR 50.49, "Environmental Qualification of Electric Equipment Important to Safety for Nuclear Power Plants". Generic Letter 85-15, issued August 6, 1985, provided information related to the deadlines for compliance with 10 CFR 50.49 and possible civil penalties should licensees operate in non-compliance with the rule. The purpose of this letter is to provide additional guidelines on appropriate licensee actions in situations where environmental qualification of equipment is suspect and on current NRC policy with regard to enforcement of 10 CFR 50.49.

When a licensee discovers a potential deficiency in the environmental qualification of equipment (i.e., a licensee does not have an adequate basis to establish qualification), the licensee shall make a prompt determination of operability, shall take immediate steps to establish a plan with a reasonable schedule to correct the deficiency, and shall have written justification for continued operation. This justification does not require NRC review and approval.

The licensee may be able to make a finding of operability using analysis and partial test data to provide reasonable assurance that the equipment will perform its safety function when called upon to mitigate the accidents for which it is needed. In this connection, it must also be shown that subsequent failure of the equipment under accident conditions will not result in significant degradation of any safety function or provide misleading information to the operator.

If the licensee is unable to demonstrate operability:

- A. For inoperable equipment included in systems covered by plant technical specifications, the licensee shall follow the appropriate action statements. This could require the plant to shut down within a limited period of time (or remain shut down).
- B. For inoperable equipment not covered by the plant technical specifications, the licensee may continue reactor operation:
 1. If the safety function can be accomplished by other designated equipment that is qualified, or
 2. If limited administrative controls can be used to ensure the safety function is performed.

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The licensee should also evaluate whether the findings are reportable under 50.72, 50.73, Part 21, the Technical Specifications or any other pertinent reporting requirements, particularly if equipment is determined to be inoperable.

Enclosed is a copy of enforcement guidance related to Generic Letter 85-15.

This letter does not require any response and therefore does not need approval of the Office of Management and Budget. Comments on burden and duplication may be directed to the Office of Management and Budget, Reports Management Room 3208, New Executive Office Building, Washington, D.C. 20503. Should you have any questions, the staff contacts are Gary Holahan for technical questions and Jane Axelrad for enforcement questions. Mr. Holahan can be reached on (301)492-4410 and Ms. Axelrad can be reached on (301)492-4909.

Sincerely,

Original Signed By:
Richard H. Vollmer

for Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Enclosure:
As stated

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NOTE:
SEE CONCURRENCES ON "GENERIC LETTER ON EQUIPMENT QUALIFICATION" AUGUST 6, 1986
MEMO FROM H. R. DENTON TO J. H. SNIEZEK.

ENFORCEMENT CRITERIA FOR EQ ENFORCEMENT

Application of the "Clearly knew, or should have known" test

The staff believes it is unlikely that licensees will be identified that "clearly knew" they had equipment for which qualification cannot be established. The staff believes from discussions with licensees that all licensees who were aware before November 30 that they had equipment for which qualification could not be established elected to shut down rather than operate in noncompliance under the daily penalty provision. Thus, the issue in most cases will be for the staff to determine whether the licensee "clearly should have known" that its equipment was not qualified. The staff will examine the circumstances in each case to make the determination. The factors the staff will examine include:

1. Did the licensee have vendor-supplied documentation that demonstrated that the equipment was qualified?
2. Did the licensee perform adequate receiving and/or field verification inspection to determine that the configuration of the installed equipment matched the configuration of the equipment that was qualified by the vendor?
3. Did the licensee have prior notice from any source that equipment qualification deficiencies might exist?
4. Did some licensees identify similar problems and correct them before the deadline?

To illustrate how these factors would be applied in specific cases, the staff will use as an example in the discussion which follows deficiencies in the qualification of the internal wiring of certain valve operators recently identified at several plants. Vendor EQ test reports provided to licensees were ambiguous regarding whether the internal wiring of the operators was qualified by the reports. It has now been determined that vendor EQ test reports did not include qualification of the internal wiring of the operators and that the wiring used in the test operators could be different than the wiring installed in production units. Subsequent wiring modifications by the valve manufacturer or by the installer have introduced additional wiring which was not covered by the operator qualification reports. Physical inspection has shown instances of unidentified or not qualified wiring installed in several valve operators.

These operators are used on a wide variety of valves at the plants and in many cases were used on valves which were part of systems covered by technical specifications (TS) such as containment isolation valves. The wiring in the operators should have been qualified by November 30, 1985. Thus, plants at which such significant deficiencies are identified after the deadline for which further testing or analysis is required to establish qualification and which operated in noncompliance are subject to a possible penalty of \$5,000 per item per day if such licensees clearly knew or clearly should have known of the deficiencies. In some plants, this could amount to a substantial penalty.

With regard to the first two factors, reliance on vendor-supplied information on testing of equipment and performance of receiving and/or field verification inspections, the licensees took the position that the EQ test reports provided by the vendor covered the wiring and did not perform adequate receiving or field verification inspections to positively identify the internal wiring. We and the licensees now know that the vendor test reports did not cover the wiring in the operators.

In addressing qualification by test, paragraph (f) of 10 CFR 50.49 requires that each item of electrical equipment important to safety must be qualified by testing an identical item or testing a similar item with supporting analysis that the equipment to be qualified is acceptable. It may not be reasonable to rely entirely on vendor-supplied information in establishing similarity since changes to complex equipment are likely to occur during the manufacturing process and/or installation. A comprehensive receiving and/or field verification inspection of the equipment by the licensees should be conducted to identify significant discrepancies between the as-installed vs. qualified configurations.

With regard to the third factor, prior notice of similar problems, the results of one field verification inspection of equipment prompted IE to issue an Information Notice in 1983 to alert licensees to several deficiencies affecting equipment qualification. This Notice discussed a construction deficiency report related to inspection of valve operators at a plant under construction. Among several specific qualification-related concerns, this Notice stated that "No identification was evident on certain materials internal to the valve operators (e.g., wiring, insulation, etc.)" and stated that "It is not presently known whether these types are qualified for the service conditions." This Information Notice also highlighted the fact that "Information obtained from purchase order files and qualification files does not agree with the installed components." Based on the above, the staff concluded this document provided prior notice of the potential problems with certain valve operators. Given this information, it was unreasonable for licensees to rely entirely on the vendor reports without doing additional work to ensure that the wiring was qualified.

With regard to the fourth factor, some licensees did identify and correct this problem before the November 30, 1985 deadline. The unqualified wiring was identified by these licensees as a result of walkdown verification of the installed equipment or comprehensive review of qualification files.

After consideration of all of these factors, the staff has concluded that in the case of the wiring, licensees "clearly should have known" that the vendor documentation was not adequate to support qualification.

Time Period to be Considered for Daily Civil Penalty

Once the staff concludes that the "clearly knew or should have known" test is applicable, the staff must determine the appropriate period over which to assess a daily civil penalty. The staff has concluded that the appropriate period is from November 30, 1985 to the time the licensee completes its evaluation and schedules corrective action. This approach should encourage timely identification and evaluations by licensees of the qualification of the equipment. A licensee should not be penalized for each day after the problem

is identified and appropriate corrective action is scheduled that it elects to operate until the problem is fixed assuming a reasonable determination was made that it was safe to allow continued operation. Imposing daily civil penalties until the violation is corrected would provide strong incentives for shutdown even though the licensee had determined that continued operation for some reasonable period of time is not unsafe. However, if the licensee's determination that it was safe to operate is later found to be in error, shutdown may be required and the licensee may be subject to daily civil penalties. Since such penalties are likely to quickly become abnormally high, particularly as the length of time between the November 30 deadline and the date of inspection increases, the staff has determined that some cap on the possible amount of the civil penalty should be imposed. The staff has determined that this is appropriate especially for those cases in which the "clearly should have known" test is applied as opposed to cases in which the licensee "clearly knew" that they were not in compliance. The staff has selected a cap of \$500,000 per item or approximately the amount that would be imposed for one item that was deficient for 100 days after the deadline. The mitigation factors would then be applied to mitigate from \$500,000 per item down if appropriate. Similarly, since the reasonableness of the schedule for corrective action is a factor to be considered for mitigation of the daily civil penalty, if the licensee fails to meet its schedule, additional civil penalties will be considered.

In the case of the valve operators described above, in one hypothetical situation, suppose that a Resident Inspector notified one licensee two weeks after the deadline that the qualification of the valve operators was suspect. That licensee evaluated the situation and concluded that the qualification of the wiring could not be verified. The licensee performed a final evaluation two weeks later justifying continued operation with the unqualified equipment and planned to replace the equipment at the next scheduled refueling outage in two months. The staff would conclude that this licensee would be subject to a daily civil penalty of \$5,000/item/day for 28 days.

Application of the Mitigation Factors

Once it has been determined that a licensee may be subject to a daily civil penalty under this test, Generic Letter 85-15 specifies that the staff should apply certain mitigation factors to determine the amount of the proposed penalty. The factors specified in the letter were:

1. Did the licensee identify and promptly report the noncompliance with 10 CFR 50.49?
2. Did the licensee apply best efforts to complete environmental qualification within the deadline?
3. Has the licensee proposed actions which can be expected to result in full compliance within a reasonable time?

These factors are self-explanatory. In addition, the staff would consider the circumstances of each particular case including the significance of the deficiencies identified, the opportunities available to identify and correct

them, the time taken by the licensee to make a determination, the quality of the supporting analysis, and the length of time the deficiencies existed before identification. The following discussion illustrates how these mitigation factors would be applied in the hypothetical case of a licensee which identified the valve operator problem.

We assume that the licensee identified the potential problem with qualification of the internal wiring of valve operators after conversations with the NRC Resident Inspector. We assume that it immediately initiated a timely investigation, determined that qualification of its valve operators was not fully supported due to problems with the internal wiring, and notified the NRC of this determination via telephone and continued to evaluate the problem. Within two weeks of becoming aware of the problem, the licensee submitted a 10 CFR Part 21 report to the NRC. Included in this submittal was the licensee's justification for continued operation of the plant and a plan for corrective action.

Further we assume that the licensee actively worked to achieve its 10 CFR 50.49 deadline of the second refueling outage after March 31, 1982 and was able to meet it except for some items of equipment for which justifications for continued operation (JCOs) had been approved. Later, NRC was notified by telephone that all work on equipment scheduled for replacement and/or relocation and covered by the previously approved JCOs had been accomplished. Therefore, all equipment within the scope of 10 CFR 50.49 was believed to be qualified well before the November 30, 1985 deadline.

Finally, we assume that this licensee's 10 CFR Part 21 report submitted to the NRC included a schedule for corrective actions to establish qualification of the wiring of all valve operators within the scope of 10 CFR 50.49 and that this schedule called for the replacement of existing wiring with qualified wiring on all affected operators within two months.

The staff has concluded that this licensee would be entitled to complete mitigation under these factors. However, to be fair and equitable to those licensees who either took appropriate actions prior to November 30 or shut down on November 30 in order to be in compliance, some civil penalty should be imposed. Thus, the staff has concluded that the daily civil penalty should be adjusted in accordance with the factors but the civil penalty levied should not be lower than \$50,000, the base civil penalty for an ordinary Severity Level III violation, in any case in which significant deficiencies remained at the close of the inspection for which further testing or analysis was required to establish qualification and which the licensee "clearly knew or should have known" existed before the November 30 deadline.

Other Enforcement Regarding Violations of EQ Requirements Identified at Plants Operating After November 30

If violations of the EQ rule identified during first-round ^{1/} inspections at plants operating after November 30, 1985 apparently existed before the deadline, then the "clearly knew or should have known" test should be applied. If the

^{1/} First-round inspections are special team inspections to review licensees' compliance with 10 CFR 50.49.

licensee meets the test, enforcement should be taken as described above. If the licensee does not meet this test, no enforcement action should be taken. If the licensee could not have reasonably been expected to discover the problem before the November 30 deadline, presumably the noncompliance could not have been avoided and enforcement action to deter future noncompliance would serve no purpose.

If the violations of the EQ rule identified after November 30, 1985 do not relate back to action or lack of action before the deadline; e.g., a modification was made in January 1986 that created the violation, or are identified after first-round inspections are completed, enforcement should be taken under the current Enforcement Policy. The present policy states as an example of Severity Level III: "2. A system designed to prevent or mitigate a serious safety event not being able to perform its intended function under certain conditions (e.g., safety system not operable unless offsite power is available; materials or components not environmentally qualified)." Thus, no changes to the Enforcement Policy are necessary to take into account EQ violations. Consistent with the interpretations of the Enforcement Policy in other areas, less significant violations that indicate a programmatic breakdown can also be grouped and categorized as Severity Level III violations.

For licensees that were not in compliance with the rule before the November 30, 1985 deadline and did not submit timely requests for extension, but which did not operate in noncompliance after the deadline, consistent with the Commission's direction in response to SECY 85-220, (Memorandum from S. J. Chilk to W. J. Dircks, August 27, 1985) the staff will exercise enforcement discretion after considering whether adequate JCO's were provided and whether an extension would have been granted if timely filed.

LIST OF RECENTLY ISSUED GENERIC LETTERS

Generic Letter No.	Subject	Date of Issuance	Issued To
GL 86-14	OPERATOR LICENSING EXAMINATIONS	08/20/86	ALL POWER REACTOR LICENSEES AND APPLICANTS
GL 86-13	POTENTIAL INCONSISTENCY BETWEEN PLANT SAFETY ANALYSES AND TECHNICAL SPECIFICATIONS	07/23/86	ALL POWER REACTOR LICENSEES WITH CE AND B&W PRESSURIZED WATER REACTORS
GL 86-12	CRITERIA FOR UNIQUE PURPOSE EXEMPTION FROM CONVERSION FROM THE USE OF HEU FUEL	07/03/86	ALL NON-POWER REACTOR LICENSEES AUTHORIZED TO USE HEU FUEL
GL 86-11	DISTRIBUTION OF PRODUCTS IRRADIATED IN RESEARCH REACTORS	06/25/86	ALL NON- POWER REACTOR LICENSEES
GL 86-10	IMPLEMENTATION OF FIRE PROTECTION REQUIREMENTS	04/28/86	ALL POWER REACTOR LICENSEE AND APPLICANTS
GL 86-09	TECHNICAL RESOLUTION OF GENERIC ISSUE NO. B-59 (N-1) LOOP OPERATION IN BWRs AND PWRs	03/31/86	ALL BWR AND PWR LICENSEES AND APPLICANTS
GL 86-08	AVAILABILITY OF SUPPLEMENT 4 TO NUREG-0933, "A PRIORITIZATION OF GENERIC SAFETY ISSUES"	03/25/86	ALL LICENSEES, APPLICANTS AND CONSTRUCTION PERMIT HOLDERS
GL 86-07	TRANSMITTAL OF NUREG-1190 REGARDING THE SAN ONOFRE UNIT 1 LOSS OF POWER AND WATER HAMMER EVENT	03/20/86	ALL LICENSEES AND APPLICANTS
GL 86-06	IMPLEMENTATION OF TMI ACTION ITEM II.K.3.5, "AUTOMATIC TRIP OF REACTOR COOLANT PUMPS"	05/29/86	ALL LICENSEES AND APPLICANTS OF CE DESIGN NSSS
GL 86-05	IMPLEMENTATION OF TMI ACTION ITEM II.K.3.5, "AUTOMATIC TRIP OF REACTOR COOLANT PUMPS"	05/29/86	ALL LICENSEES AND APPLICANTS OF B&W DESIGN NSSS

FOR: All Project Managers
FROM: Harold R. Denton, Director
Office of Nuclear Reactor Regulation
SUBJECT: GENERIC LETTER PROVIDING INFORMATION RELATED TO COMPLIANCE WITH
10 CFR 50.49, "ENVIRONMENTAL QUALIFICATION OF ELECTRIC EQUIPMENT
IMPORTANT TO SAFETY FOR NUCLEAR POWER PLANTS"

The enclosed generic letter is being sent to all licensees and holders of an application for an operating license to provide additional guidelines, which have been approved by the Commission, on appropriate licensee actions in situations where environmental qualification of equipment is suspect and on current policy with regard to enforcement of 10 CFR 50.49. No explicit action or reporting is required by licensees or applicants as a result of this letter. Therefore, no MPA will be established nor will schedule negotiations be necessary.

Project Managers should read the letter and become familiar with the appropriate actions to be taken by licensees when suspect or known deficiencies in environmental qualification are discovered. Each Project Manager should develop an appreciation for the enforcement considerations, but, since enforcement is primarily a regional matter, you need not become completely familiar with the enforcement criteria.

Original Signed By:
Richard H. Vollmer

for Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Enclosure: Generic Letter

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