(24)

DOCKET NUMBER
PROPOSED RULE PR -50
(47 FR2876)

DATE: March 18, 1982

TO: Secretary of the Commission
Attention: Docketing & Service Branch
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

'82 MAR 22 P1:19

emp

FROM: Catherine Quigg, research director
Pollution & Environmental Problems, Inc.
P.O. Box 309, Palatine, Illinois 60067

RE: NRC PROPOSED RULE ON ENVIRONMENTAL QUALIFICATIONS OF ELECTRICAL EQUIPMENT FOR NUCLEAR POWER PLANTS, FEDERAL REGISTER JANUARY 20, 1982

The members of Pollution and Environmental Problems, Inc. find no justification for the NRC's proposed rule on the environmental qualifications for electrical equipment for nuclear power plants. We find in this proposed rule another attempt on the part of the NRC to put the public in jeopardy in order to pacify the nuclear industry.

The proposed rule delays the present deadline of June 30,1982 for safety equipment qualification until 1984--with further allowances for extensions. Given that licensees and the NRC have been aware of these safety qualification problems since 1978, we object to any extension of the June 30, 1982 deadline. The NRC is responsible to the public for the safe operation of the nation's nuclear power plants. There is no way this kind of reassurance can be given, when the NRC fails to properly supervise utilities in the operation of these facilities and is seen by the public and the utilities as extremely lenient in its granting of extensions.

We support the position of Commissioners Bradford and Gilinsky that the rule should contain requirements for seismic and dynamic considerations. The importance of seismic qualification was demonstrated recently at the Diablo Canyon plant.

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Pollution and Environmental Problems, Inc. further objects to the limiting of equipment classified as "electrical equipment important to safety" to CLASS 1E equipment in IEEE national standards and some additional Class 1E equipment. We believe all safety-related equipment should be required to meet safety qualifications.

Since the IEEE standards do not list Class 1E components, we do not understand how licensees can decide which equipment falls in this category--and believe it is a fatal mistake to allow this decision to be made by licensees.

Moreover, we believe that the definition of "safety-related" systems should be expanded. The Three Mile Island task force reported that non-safety systems can affect the safety of a nuclear reactor. These non-safety systems should be identified and environmental qualifications and deadlines for compliance should be specified to licensees under this rule.

Finally, Pollution and Environmental Problems, Inc. submits that the proposed rule makes a mockery of lessons learned at Three Mile Island by weakening and delaying safety requirements for equipment designed to mitigate serious accidents. At a time when the NRC Staff considers fifteen to forty percent of electtical equipment in nuclear plants vulnerable to failure during an accident, the proposed rule threatens the public health and safety.

We strongly urge the NRC to support its own requirement that licensees be obliged to meet environmental qualfications for electrical equipment and safety-related equipment by June 30, 1982.

Respectfully submitted,

Catherine Quigg

Catherine Quigg
POLLUTION & ENVIRONMENTAL PROBLEMS, INC.
P.O. Box 309
Palatine, Illinois 60067

Duquesne Light

Nuclear Division
P.O. Box 4
Shippingport, PA 15077-0004

Telephone (412) 456-6000

'82 MAR 22 P2:24

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March 15, 1982

Mr. Samuel J. Chilk
Secretary of Commission
U. S. Nuclear Regulatory Commission
1717 H Street, NW
Room H-1137
Washington, D. C. 20555

DOCKET NUMBER PROPOSED RULE PR-50 (29) (47 FR 2876)

Reference: Beaver Valley Power Station, Unit No. 1
Docket No. 50-334, License No. DPR-66
Comments On Proposed Rule "Environmental Qualification Of Electric Equipment For Nuclear Power Plants"

Dear Mr. Chilk:

Duquesne Light Company has reviewed the proposed rule "Environmental Qualification Of Electric Equipment For Nuclear Power Plants" published January 20, 1982 in the Federal Register. The proposed rule, as discussed under supplementary information and written as new Section 50.49 "Environmental Qualification Of Electric Equipment For Nuclear Power Plants", is a significant extension to present regulation and practice containing elements we find objectionable.

We consider the following items as the major extensions to present regulation and practice:

1. Section [c]

   The requirement to identify and qualify the electric equipment needed to complete one path of achieving and maintaining a cold shutdown condition.

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2. Section [d, e]

   The requirements are for all electric equipment.

Addl S. Aggarwal

3. Section [f]

   The requirement that analysis in combination with partial test data is only allowed if the purchase order was executed prior to May 23, 1980.

Beaver Valley Power Station, Unit No. 1
Docket No. 50-334, License No. DPR-66
Comments On Proposed Rule "Environmental Qualification Of Electric Equipment For Nuclear Power Plants"
March 15, 1982

We believe that the above mentioned requirements are too restrictive when credit is taken for considerations such as the design and licensing basis of the plant, the architecture of the plant, the present state of the art, and the effect of environmental stresses on equipment subjected to the mild environment. In addition, Environmental Qualification "escalation" and the "time frame" in which plant was designed should have much more impact upon how this rule is written.

Our detailed comments are attached. We would be happy to discuss any questions.

Thank you for this opportunity to comment on this proposed rule.

Very truly yours,

J. J. Carey
Vice President, Nuclear

cc: Mr. D. A. Beckman, Resident Inspector
U. S. Nuclear Regulatory Commission
Beaver Valley Power Station, Unit No. 1
Shippingport, PA 15077

U. S. Nuclear Regulatory Commission
c/o Document Management Branch
Washington, D. C. 20555

Detailed Comments

1. Last Sentence of Item [c]: "Also included is equipment needed to complete one path of achieving and maintaining a cold shutdown condition."

   This is a very specific requirement, and should be deleted or clarified to take into account:

   1. Design and Licensing Basis of Plant
   2. The Architecture of the Plant
   3. Present State of the Art
   4. NRC Branch Tech. Position BTP RSB 5-1

2. Item [d] "The applicant or licensee shall prepare a list of all electric equipment covered by this section and maintain it in an auditable form. This list of equipment must as a minimum include:"

   There is no distinction between equipment located in the harsh and mild environment. Suggest the second sentence read "Equipment located in the harsh environment on this list must as a minimum include."

3. Item [e] "The Electrical Equipment Qualification Program must include the following:"

   There is no distinction between equipment located in the harsh and mild environment. Suggest the sentence read: "The Electrical Equipment Qualification Program for equipment located in a harsh environment must include the following:"

4. [F].[4].[ii] "By analysis of combination with partial type test data which adequately supports the analytical assumptions and conclusions, if the equipment purchase order was executed prior to May 23, 1980."

   This requirement is too restrictive. Analysis in combination with partial type test data should be a valid method to show qualification of electrical equipment. Suggest "if the equipment purchase order was executed prior to May 23, 1980" be deleted from [F].[4].[ii].

5. A definition of terms should be added to 50.49. Some terms to be defined are:

   1. Harsh Environment
   2. Mild Environment
   3. Normal Operation
   4. Abnormal Operation
   5. Design Basis Events

March 16, 1982

ALAN ROBERT CLEETON
MARION WICKERSHAM CLEETON

22 MACKINTOSH STREET
FRANKLIN, MASSACHUSETTS 02038

Area Code 617
528-2610

Secretary of the Commission
Att:Docketing and Service Branch
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

(30)

DOCKET NUMBER
PROPOSED RULE PR-50
(47 FR 2876)

Re proposed rule: 10 C.F.R. 50.49 Environmental Qualification of electrical equipment for nuclear power plants

Dear Sir:

This proposed rule seriously weakens the present Nuclear Regulatory Commission requirement for environmental qualification of electrical equipment for nuclear power plants. We are strongly opposed to this weakening.

Because of our concern for the health and safety of the people of this country, we hold that further STRENGTHENING of the environmental qualification of electrical equipment for nuclear power plants is needed.

The NRC itself has determined that much of the electrical equipment now in place in nuclear plants would be likely to fail in the event of an accident. We urge you not to pass this proposed rule, which, if passed, would place millions of persons in jeopardy.

Respectfully yours,

Rev. & Mrs. Alan Cleeton
Intervenors, Pilgrim II

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ADD:
S. Aggarwal

ISHAM, LINCOLN & BEALE
COUNSELORS AT LAW

1120 CONNECTICUT AVENUE, N.W. • SUITE 840
WASHINGTON, D.C. 20036
202 833-9730

EDWARD S. ISHAM, 1872-1902
ROBERT T. LINCOLN, 1872-1889
WILLIAM G. BEALE, 1885-1923

CHICAGO OFFICE
ONE FIRST NATIONAL PLAZA
CHICAGO, ILLINOIS 60603
TELEPHONE 312 558-7500
TELEX: 2-5288

March 22, 1982

(32)

Mr. Samuel J. Chilk
Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

ATTENTION: Docketing and Service Branch

RE: Comments on 10 CFR Part 50.49
Environmental Qualification of Electrical
Equipment for Nuclear Power Plants
(47 Fed. Reg. 2876)

Dear Mr. Chilk:

This law firm has been requested by Commonwealth Edison Company to submit comments on its behalf on the proposed rule on "Environmental Qualification of Electric Equipment for Nuclear Power Plants" published by the NRC on January 20, 1982.[1/] The proposed rule purports to "codify the Commission's current requirements for environmental qualification." 47 Fed. Reg. 2877. If this is what the proposed rule actually did, Commonwealth Edison would have no objection. Over the past three years Commonwealth Edison has expended more than $13 million in attempting to meet current NRC requirements, as reflected in NUREG 0588 and the DOR Guidelines. The Company has budgeted a total of $33.5 million to complete this effort. We believe the NRC Staff will confirm that Commonwealth Edison has acted diligently, and in good faith. But Commonwealth Edison is appalled to find that the proposed rule does not codify current requirements. In fact, the NRC apparently contemplates withdrawing current NRC guidance documents (the DOR Guidelines and NUREG 0588), and substituting a new rule which includes many new requirements.

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S. Aggarwal

1/ Commonwealth Edison is also a member of the Nuclear Utility Group on Equipment Qualification, which is submitting comments on the proposed rule. We have reviewed the Group's comments and we agree with them.

Current NRC guidance allows three acceptable levels of qualification, depending on the age of the plant and equipment to be evaluated. The three levels are 1) the DOR Guidelines, 2) NUREG 0588 Category II, and 3) NUREG 0588 Category I. The DOR Guidelines provide the most flexibility in showing qualification acceptability of equipment. Commonwealth Edison's operating plants, Zion, Dresden, and Quad Cities, have been required to meet the DOR Guidelines. NUREG 0588 Category II requires equipment to meet IEEE-323-1971 with some additional information on qualified life. Commonwealth Edison's LaSalle Station, a near-term operating license facility, was required by the NRC Staff to meet NUREG 0588 Category II. NUREG 0588 Category I essentially requires equipment to meet IEEE-323-1974 and will not generally accept analysis in lieu of testing unless there are substantial reasons to do so. This standard was applied by the NRC only to Commonwealth Edison's Byron and Braidwood units, which are under construction, and to retesting of equipment, where necessary, in Commonwealth Edison's other plants.

The proposed rule appears to be based solely on NUREG 0588 Category I. It does not recognize all the work that has been done by Commonwealth Edison to bring its operating plants and LaSalle to the standards set forth in the DOR Guidelines and NUREG 0588 Category II. The rule as presently written would require Zion, Dresden, Quad Cities and LaSalle to re-evaluate all the equipment previously found acceptable to either the DOR Guidelines or NUREG-0588 Category II. Moreover, as the rule is presently written it appears any equipment that does not meet NUREG 0588 Category I must be replaced by the second refueling outage after March 31, 1982. Sufficient time is not being allowed for equipment replacement if new standards are going to be imposed as indicated in the proposed rule.

Commonwealth Edison urges the Commission to adopt an equipment qualification rule similar to that adopted in the fire protection area, 10 CFR §50.48, which takes into account the detailed safety reviews which have already been conducted by licensees and the NRC Staff on a facility by facility basis. While the NRC Staff has not yet formally documented these reviews in safety evaluation reports for

each licensed facility, this paperwork could be completed in a few months. The completed SER's could then be referenced in the final equipment qualification rule. This procedure would be infinitely preferable to re-doing all the equipment qualification work which has already been done, using the new standards in the proposed rule.

Since the proposed rule does not merely codify current NRC environmental qualification requirements, it should have been accompanied by a value-impact statement. That statement should have honestly confronted the tremendous waste associated with requalifying plants already qualified to DOR Guidelines or NUREG 0588, Category II to the standards set forth in the proposed rule.

Commonwealth Edison has additional, detailed comments on the text of the proposed rule, which are attached. However, we want to re-emphasize, in closing, our dismay that a proposed rule of such importance was presented by the NRC as something that it is not, and that the NRC appears, at this late date, to have thrown away all the work that has been done in the last three years.[2/]

Sincerely,

Philip P. Steptoe (FCW)

One of the Attorneys for
Commonwealth Edison Company

2/ We are also upset that the NRC, at the strong urging of the Staff, denied Commonwealth Edison's request for a modest amount of additional time to comment on the proposed rule. This request was based on the Staff's six week delay in publishing their proposed revision to Reg. Guide 1.89, which according to the "Supplementary Information" accompanying the proposed rule was to be published "concurrently with the proposed rule," 47 Fed. Reg. 2877. Under the circumstances, the denial of Commonwealth Edison's request was unfair.

Commonwealth Edison
One First National Plaza, Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690

SPECIFIC COMMENTS TO THE NRC
PROPOSED RULE 10 CFR 50.49

1. The proposed rule includes a new requirement, not included in any of the previous environmental qualification documents (IEEE 323, DOR Guidelines, or NUREG 0588), which requires that all electric equipment required to complete one path of achieving and maintaining a cold shutdown condition be identified and qualified.

The requirement that each applicant for a license to operate a nuclear power plant identify and qualify the electric equipment needed to complete one path of achieving and maintaining a cold shutdown condition is not consistent with the licensing basis for the Commonwealth Edison power plants.

Zion, Byron and Braidwood, along with other plants which employ Westinghouse NSSS, have never committed to bring the unit into a cold shutdown condition using Class 1E equipment. The NRC has recently reviewed Byron/Braidwood's licensing basis, to bring the plant into a safe hot shutdown condition using only Class 1E equipment, and has accepted it. If the NRC plans to impose this new requirement in the proposed rule, a major redesign and equipment change out would be necessary in order to comply.

Commonwealth Edison believes hot shutdown is a safe acceptable state for the plant for an extended period of time. Edison believes if the Staff desire to impose this requirement it should be imposed at the time a construction license is issued so that it could be incorporated into the original design.

2. The proposed rule defines the electric equipment to be environmentally qualified as that equipment which is "commonly referred to as Class 1E plus some additional non-Class 1E equipment and systems whose failure under extreme environmental conditions could prevent the satisfactory accomplishment of safety functions by accident mitigating equipment." An extensive plant analysis of non-Class 1E equipment would be required to comply with this rule as worded. The scope of this review for non-Class 1E equipment could be limited without impacting safety benefits by limiting the review to non-Class 1E equipment located in a harsh environment whose failure could prevent the satisfactory accomplishment of safety functions.

3. Item d of the proposed rule states "licensee shall prepare a list of all electric equipment covered by this section and maintain it in an auditable form." This requirement applies to equipment located in harsh environments as well as mild environments. Commonwealth Edison agrees with this provision for harsh environments, however Commonwealth Edison feels that listing equipment in mild environments would be a massive and expensive paperwork project without a corresponding increase in safety. See item 10 below concerning Edison's comments on mild environments.

4. Item e.2, Humidity. The proposed rule requires qualification to "time-dependent variations of relative humidity." Qualification of equipment for humidity is at best state of the art technology. There are no detailed standards for how this type of testing should be performed. Until reasonable standards are developed for humidity consideration and testing, humidity should not be addressed by the rule.

5. Item e.7, Synergistic Effects. This provision also imposes a requirement which is not fully understood by anyone in the NRC Staff or the industry. How will test reports be reviewed for acceptability when considering synergistic effects? A qualification test and report done today would include known synergistic effects, however, the report may be reviewed in the future when additional synergistic effects are known. Does this invalidate the qualification of installed equipment? The NRC ought to focus its resources and those of the industry on ensuring that equipment can withstand first-order effects.

6. Item e.8, Margins. The proposed rule requires that margins be applied to account for production variations and inaccuracies in test instruments. These margins must be applied in addition to margins applied during the derivation of the environmental conditions.

The application of margins in addition to the margin applied during derivation of the service conditions would be redundant if the previous margins had been quantified. If the margin applied during the calculation of specific plant parameters can be quantified, one should be able to take credit for this conservatism, along with whatever other margin exists, to show that an overall adequate level of margin is provided.

7. Item f.4.ii states analyses in lieu of testing is acceptable when the analysis is done in combination with partial type testing if the equipment was purchased prior to May 23, 1980. Analysis done in combination with partial type testing which adequately supports the analytical assumption and conclusions should not be restricted to equipment purchased prior to a set date. All justifiable methods of showing equipment qualification should be allowed.

8. Item h. "This schedule must establish a goal of final environmental qualification by the end of the second refueling outage after March 31, 1982." Edison assumes this means the second refueling outage starting after March 31, 1982.

9. Item j.4 states each licensee must perform an analysis to insure a plant can be safely operated pending completion of the environmental qualification of equipment. One acceptable interim justification is that the equipment completes its safety function prior to exposure to the ensuing accident environment and subsequent failure of the equipment does not degrade any safety function or mislead the operator. Paragraph "f" indicates each item of electric equipment must be qualified by some form of testing unless precluded by physical size or state of the art.

Paragraph f should be modified to include the above acceptable interim position that equipment which completes its safety function prior to exposure to the ensuing accident environment is exempt from qualification. Without this exemption large numbers of instruments and isolation valves will have to be replaced without a proven corresponding increase in safety. Instrumentation and its associated equipment which sense the initial change in reactor process variables and initiate a reactor SCRAM complete their design function in extremely short time frames. As long as the instrumentation has no long term accident monitoring function the instrumentation need only to be shown to be reliable for normal operating conditions. Isolation valves which receive the initial closure signal upon an appropriate containment isolation signal and have no long term accident recovery function also should not have to be environmentally qualified by test. Therefore exemption from environmental qualification for equipment which performs its function in a short period of time should be allowed for equipment already installed in the plants.

10. The proposed rule does not reflect any difference in qualification requirements for equipment located in mild environments versus equipment located in harsh environments. Industry experience with equipment located in a mild environment does not indicate that mild environments lead to common mode failure of redundant safety-related equipment, therefore mild environment equipment need not be subjected to the same requirements as equipment located in a harsh environment. In fact, providing detailed qualification records on equipment installed in redundant-single failure proof-designed systems in mild environment areas where they can be readily maintained would divert limited resources and manpower from more important safety issues one of which is getting qualified equipment installed in harsh environment areas.

This rule should be limited to that area where it will potentially result in a substantial safety improvement. The rule should address only equipment located in a harsh environment. Expanding the rule to cover mild environments does not substantially increase safety, however, it does substantially increase the paperwork and costs associated with environmental qualification of equipment.

PHILADELPHIA ELECTRIC COMPANY
2301 MARKET STREET
P.O. BOX 8699
PHILADELPHIA, PA. 19101
(215) 841-4502

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JOHN S. KEMPER
VICE-PRESIDENT
ENGINEERING AND RESEARCH

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March 19, 1982

Docket Nos. 50-277
50-278
50-352
50-353

(23)

DOCKET NUMBER
PROPOSED RULE PR-50
(47 FR 2676)

Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Attention: Docketing and Services Branch

Sujbect: Comments on 10CFR50.49; Environmental qualification of electric equipment for nuclear power plants

Gentlemen:

In response to your request for comments on the proposed 10CFR50.49, we have developed a number of general and specific comments.

In general, the time requirements stated in Sections 50.49(e)(1) through (4) are inconsistent and should be rewritten to require equipment to be qualified for the time it is required to remain functional. Attached, for your consideration, are our specific comments.

We believe the NRC has sufficient authority to compel compliance with current requirements without a rulemaking. If NRC deems codification necessary, it should be deferred pending completion of related qualification requirements (ie, seismic, mechanical equipment, operability).

Very truly yours,

John S. Kemper

Attachment

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S. Aggarwal

Philadelphia Electric Company
Comments on Proposed Rule 10CFR50.49; Environmental
Qualification of Electric Equipment for Nuclear Power Plants

Section 50.49(a) states that seismic and dynamic qualification requirements are not included in this section.

However, Section 50.49(g)(4) requires qualification by sequential test. Without direction on seismic and dynamic requirements sequential tests cannot be done. Therefore, this rule-making process should be delayed until such time that the seismic and dynamic qualification requirements can be included.

Section 50.49(c) states that equipment and systems subject to the provisions of this rule include the electric equipment and systems that are essential to emergency reactor shutdown, containment isolation, reactor core cooling, and containment and reactor heat removal or that are otherwise essential in preventing significant release of radioactive material to the environment.

To date, the only equipment requiring environmental qualification are those systems and equipment required to mitigate the effects of a loss-of-coolant-accident or a high energy line break and which are located in a potentially harsh environment. Since the requirement of this section seems to be much greater in scope than the previous requirement, the rule should identify (by system name) those systems which are included in this section.

Section 50.49(d) requires a list of all electric equipment covered by this section.

Under the definition in Section 50.49(c), this list would be 3 to 5 times greater than the list of equipment presently required under the scope of I&E Bulletin 79-01B. The equipment necessary to mitigate a loss-of-coolant-accident or a high energy line break and located in a potentially harsh environment should be listed; however, all other equipment should be exempted from this requirement.

Section 50.49(d)(1) and (2) requires certain performance characteristics (eg; voltage and frequency) be included under the environmental qualification program.

These performance characteristics are not environmental qualification parameters. These should be considered design verification parameters and subjected to standard industry requirements (ie; NEMA, IEEE, IPCEA, ISA, etc.). These performance parameters should be monitored, at some predetermined value, during environmental qualification to verify proper operation. The selected value should be conservative with respect to that parameter's ability to affect the equipments' safety function performance, however, to require the "range" to be qualified is overly restrictive, unnecessary, and will have a large cost impact on testing.

Section 50.49(d)(3) states that "chemicals" are included as an environmental condition.

The term "chemical" is too broad and should either be defined or specific chemicals named.

Section 50.49(d)(3) states that environmental conditions and the predicted variations of these conditions with respect to time at the equipment location must be considered in the qualification program.

"Predicted" implies detailed time dependent relationships must be established. Predicted variations are not necessary if extreme conditions are identified and used in the qualification program.

Section 50.49(e)(1) states that the temperature and pressure resulting from the most limiting of the applicable postulated accidents at the location of the equipment must be used as the basis for the qualification program.

Equipment should be qualified for the temperature and pressure associated with the event which the equipment is required to mitigate. Additionally, this qualification should only be for the length of time the equipment is required to operate plus some reasonable margin.

Some plant locations do not experience a significant change in temperature or pressure due to any postulated accident, time-dependent profiles should not be required for these areas.

Section 50.49(e)(2) states that time-dependent variations in relative humidity must be considered in the qualification program.

Time-dependent humidity variation effects on electrical equipment are beyond the state-of-the-art and, therefore, should not be included in a qualification program. The effects of humidity aging may be an appropriate subject for research, but certainly should not be a requirement for qualification. Only the effects of exposure to humidity above the condensable levels for long time periods should be included in qualification test programs.

Section 50.49(e)(4) requires dose type and dose rate to be addressed in a qualification program.

To require "dose and dose rate" for normal operation is overly restrictive. High dose rate effects may be an appropriate subject for research but certainly should not be a requirement for qualification. If the research identifies the need to address dose rate effects beyond a quantifiable level and for specific types of equipment or materials, the industry should be required to address this concern, however, the lack of low dose rate aging effects has been demonstrated over many reactor years of commercial nuclear plant operation. Dose rate qualification for equipment exposed to a 40 year total dose of 1.0E+5 rads or less should not be required. Acceptable source terms and equivalent types should be addressed.

Section 50.49(e)(5) requires equipment qualified by test must be aged to its installed end-of-life condition.

Pre-aging a device to its end-of-life condition is a destructive test. Since Section 50.49(g)(4) requires sequential testing, a device cannot be expected to pass any tests subsequent to end-of-life aging.

Section 50.49(e)(5) requires replacement of equipment at its end-of-qualified-life unless ongoing qualification of prototype equipment shows that the item has additional qualified life.

This requirement is cost prohibitive. Analysis should be allowed as a method of proving a device has additional qualified life. Equipment that is maintained on a regular basis or equipment that is not exposed to a significant environmental change due to a postulated accident should be excluded from the aging requirement.

Section 50.49(e)(7) requires that synergistic effects be considered during preconditioning and testing.

This concern should be a research subject, not a qualification requirement, unless "known synergistic effects" are published in this rule.

Section 50.49(e)(8) requires margins to be applied to account for production variations and test instrument inaccuracies in addition to any other margins.

This will result in an overly conservative qualification program and could cause undue additional cost. Margin should be applied to account for these variables but in a more reasonable manner.

GENERAL ELECTRIC

NUCLEAR POWER

SYSTEMS DIVISION

GENERAL ELECTRIC COMPANY, 175 CURTNER AVE., SAN JOSE, CALIFORNIA 95125
MC 682 (408) 925-5040

MFN 033-82

March 19, 1982

(17)

Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, DC 20555

DOCKET NUMBER
PROPOSED RULE PR-50
(47 FR 2876)

Attention: Docketing and Service Branch

Gentlemen:

SUBJECT: GE COMMENTS ON PROPOSED 10CFR50.49

This letter provides comments by the General Electric Company on the proposed rule for environmental qualification of electrical equipment for nuclear power plants as published in the Federal Register (Volume 47, No. 13) on January 20, 1982.

The requirement to consider environmental effects in the design of equipment and systems important to safety has been a part of 10CFR50 since 1971. Because of this, it appears that the only purpose of the proposed rule is to establish, as a regulation, specific qualification program elements and an implementation schedule. This being the case it is important that the electric power industry be given an opportunity to reconcile proposed specific implementation requirements (i.e., Revision 1 of Regulatory Guide 1.89) prior to providing our comments on the rule. This is important since the real impact of the proposed regulation lies in the application of the implementing Regulatory Guide.

We have identified several specific items which are discussed in the attachment. However, without an opportunity to resolve the specific implementation requirements, it is not possible to provide completely comprehensive comments on the proposed rule. It is General Electric's recommendation therefore, that the comment period be extended to allow resolution of the Regulatory Guide 1.89 Revision 1 comments prior to closure of the environmental qualification rule comment.

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ADD:
S. Aggarwal

Should you have any questions concerning our comments, please do not hesitate to contact Noel Shirley (408-925-1192) of my staff.

Very truly yours,

Glenn G. Sherwood, Manager
Nuclear Safety and Licensing Operation

GGS:lm/2F

ATTACHMENT

GENERAL ELECTRIC COMMENTS ON PROPOSED 10CFR50.49

1. The major impact of the imposition of the proposed 10CFR50.49 is the Staff's implementation of Revision 1 to Regulatory Guide 1.89. Before the comment period expires on the proposed 10CFR50.49, the NRC should be required to resolve industry and ACRS comments on the proposed revision to the implementation Regulatory Guide. Publication of the final rule and removal of the DOR guidelines and NUREG-0588 must occur concurrently with the issue of Regulatory Guide 1.89, Revision 1. Otherwise the industry is left with no official detailed guidance for electrical equipment qualification.

2. Since seismic and dynamic qualifications are an integral part of environmental qualification, it is inappropriate to codify environmental qualification and then to codify seismic qualification separately at a later date. Changing seismic qualification requirements after requalification to 50.49 has begun could result in an additional cycle of equipment qualification. The environmental qualification rule, and the seismic and dynamic rule, should be issued simultaneously.

3. The proposed rule does not differentiate between "mild" and "harsh" environment qualification requirements. This is inconsistent with the proposed revision to Regulatory Guide 1.89. The rule should be revised to clearly identify sections applicable to harsh environment and add any necessary sections to address equipment exposed to a mild environment. Harsh and mild should be clearly differentiated between in the rule.

4. The remainder of the rule uses the phrase "design basis events." For consistency "design basis events" should be used in paragraph (e)(1) rather than "postulated accidents."

5. Paragraph 50.49e(8) disallows use of margins applied during the derivation of environmental conditions for test margins. If the margin applied during derivation is quantifiable, and the derivation remains conservative with the margin separated, then this margin can be used in place of additional test margin. The paragraph should be altered accordingly.

6. In Paragraph 50.49f(4)(ii) delete "...if the equipment purchase order was executed prior to May 23, 1980."

   Partial type test and analysis should also be applied to equipment whose purchase orders were executed after May 23, 1980, specifically, to accelerate the simulation of the post-transient accident profile. This is particularly true for line breaks outside containment where the evironmental returns substantially to normal within minutes after the event.

NCS:rf/191D1
3/16/82

In addition, it must be recognized that some materials such a mica and ceramic do not age significantly due to temperature and radiation effects and therefore are appropriate candidates for a combined analysis - partial type test approach.

7. In Paragraph 50.49j replace "Insert Date" with "90 days after effective date". This would make paragraph (j) consistent with the 90 day date noted in the Section on Supplementary Information provided with this proposed regulation.

NCS:rf/1910D2
3/16/82

Iowa Electric Light and Power Company
March 17, 1982
LDR-82-076

'82 MAR 22 A10:12

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LARRY D. ROOT
ASSISTANT VICE PRESIDENT
NUCLEAR GENERATION

(18)

Mr. Samuel C. Chilk
Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, DC 20555
ATTENTION: Docketing and Service Branch

DOCKET NUMBER
PROPOSED RULE PR-50
(47 FR 2876)

Gentlemen:

This letter provides comments by Iowa Electric Light and Power Company on the proposed rule for Environmental Qualification of Electric Equipment for Nuclear Power Plants as published in the Federal Register on January 20, 1982.

It should be stated that for equipment located outside containment, the scope of this rule is limited to equipment essential for operation during and subject to the effects of a Loss Of Coolant Accident (LOCA) or High Energy Line Break (HELB). This would provide consistency with the scope of parent regulatory documents (IE Bulletin 79-01b, its three supplements, and NUREG-0588). Equipment essential for operation during accidents other than LOCAs or HELBs are not subject to harsh environmental effects and, therefore, do not require the extensive testing described in this proposed rule to ensure operability.

The effects of time dependent variations of relative humidity during normal operation cannot be considered for all equipment because the phenomenon is not well understood. The proposed rule should be modified, requiring this to be considered only in cases where it is known to be a problem, or alternatively, the NRC should provide guidance in how to evaluate this concern.

Thank you for this opportunity to comment on the proposed rule.

Very truly yours,

R. W. McDaugley for

Larry D. Root
Assistant Vice President
Nuclear Generation

DS10
s
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ADD:
S. Aggarwal

LDR/BWR/dmh*

cc: B. Reid
D. Arnold
L. Liu
S. Tuthill
NRC Resident Office

Westinghouse Electric Corporation
Water Reactor Divisions

Box 355
Pittsburgh Pennsylvania 15230

NS-EPR-2576
March 11, 1982

20

Mr. Samuel J. Chilk
Secretary of the Commission
Docketing and Service Branch
U.S. Nuclear Regulatory Commission
1717 H Street, NW
Room H-1137
Washington, D.C. 20555

Dear Mr. Chilk:

Westinghouse has reviewed the proposed rule 'Environmental Qualification of Electric Equipment for Nuclear Power Plants' published in the Federal Register on January 20, 1982 and welcomes the opportunity to provide comments. The attachment contains detailed comments aimed at improving the quality of the rule. However, we have some serious concerns with respect to the rulemaking process and schedules established by the Staff.

The proposed rule, together with the recently issued revision to Regulatory Guide 1.89 'Environmental Qualification of Electric Equipment for Nuclear Power Plants,' are designed to supercede the requirements previously imposed by the Commission's Memorandum and Order (CLI-80-21) and its endorsement of NUREG-0588 and IE Bulletin 79-01B. In order to adequately review whether these proposed requirements fulfill the Commission's intent, it is essential to review both the proposed rulemaking and the draft Regulatory Guide as one package. Unfortunately, the draft Guide was not published until February 23, 1982. As a consequence we strongly recommend an extension of the comment period for the proposed rulemaking to April 23, 1982 to make it consistent with the comment period for the draft regulatory guide.

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S. Aggarwal

A more over-riding concern is with the Commission's proposal to have separate rulemaking for environmental and seismic qualification of electrical equipment. As you know, the subject of test sequence has been a sensitive issue with the Commission over recent years. The Staff endorses a qualification test sequence which requires aging before seismic testing, and seismic testing before simulated high energy line break testing. Thus, to leave the seismic and dynamic qualification rulemaking to some later date raises the potential for complete repeat testing due to changes in the seismic qualification requirements. Such an eventuality is unacceptable and Westinghouse strongly recommends that the proposed seismic and dynamic qualification rulemaking be made an integral part of this rulemaking.

Should you wish to discuss these recommendations or any of the attached comments, please call me or George Butterworth of my Staff on 412-373-5761.

Very truly yours,

E. P. Rahe, Manager
Nuclear Safety Department

GB/keg
Attachment

1832Q

Comments on Proposed 50.49 'Environmental
Qualification of Electrical Equipment for Nuclear Power Plants

- Federal Register Vol 47, No. 13, January 20, 1982 -

General Comments

1. The proposed rule has been written, in most instances, to reflect the requirements for qualification of equipment required to operate in a hostile environment. There is no consistent recognition of the less onerous requirements appropriate for qualification of equipment located in mild environments, as recognized by the NRC's draft Revision 1 to Regulatory Guide 1.89. Examples of this concern are identified in the detailed comment section below.

2. On page 2878, column 1, line 21 the NRC claims that the proposed rule imposes no new costs or obligations on utilities. This statement is blatantly not true. The increase in scope to include equipment needed to go to cold shutdown is just one of a number of new requirements introduced with this proposed rulemaking. Other new additional items are identified in the detailed comment section below.

3. The proposed rule does not reflect any alleviation in requirements for plants not originally committed to Regulatory Guide 1.89. In this state, it constitutes a major ratchet for these plants. Westinghouse strongly recommends the incorporation into the proposed rule of the flexibility recognized in Section D of the draft Regulatory Guide 1.89 issued for comment.

4. The draft rulemaking does not address the important subject of replacement parts.

Detailed Comments

p 2877, col 2, line 41 - The statement that the NRC will generally not accept analysis in lieu of testing is, we believe, the Staff's position for equipment required to operate in a hostile environment. This is confirmed by the subsequent discussion concerning design basis event conditions. We recommend this sentence be modified to read: 'NRC will generally not accept analysis in lieu of testing for equipment required to perform a safety function in a hostile environment.'

p 2877, col 3, line 14 - We presume that IE Bulletin 79-01B and supplements will also be withdrawn.

50.49, para c - The scope of equipment in paragraph c has been expanded to include equipment needed to complete one path of achieving and maintaining a cold shutdown condition while paragraph 1b requires each licensee to establish a program for qualifying all equipment in paragraph c. This is a major new ratchet and is in total conflict to the position on cold shutdown established in the Staff's letter to all

licensees dated January 19, 1981. Westinghouse maintains that the scope of the rulemaking should be limited to equipment required to reach and maintain safe shutdown following any design basis event, where 'safe shutdown' is defined by the original license conditions. Should the Staff insist on implementing this new requirement we request that the Staff follow appropriate regulatory procedures for backfit determination prior to implementation.

50.49, para d - We note that the Staff now requires the information identified in d.1 through d.3 for equipment in mild environments. This is a new requirement for plants not already committed to Regulatory Guide 1.89.

50.49, section d.1 - The inclusion of structural integrity is inapproprite. Rather, the safety-related performance requirements should be specified and ultimately demonstrated. Structural integrity may not be significant with respect to completion of the safety function.

50.49, section d.2 - Change 'can' to 'must' on last line.

50.49, section d.3 - The term 'where applicable' needs to be added after the list of environmental parameters to recognize that environmental parameters such as chemical spray are only applicable to equipment located inside-containment.

50.49, section e.1 - This section is inconsistent with section g.3. The licensee should be required to identify the time dependent parameters for each of the limiting accidents. Section g.3 then permits the flexibility of encompassing these events, by one single envelope or establishing separate test profiles.

50.49, section e.3 - This section should be re-written to require the licensee to address the time dependent variation in concentration of any chemicals used for accident mitigation as part of the qualification program, including any variations that can be postulated from a single failure in the spray system. The arbitrary requirement to use the most severe chemical concentration throughout the qualification program is not appropriate.

50.49, section e.5 - (i) This paragraph is inconsistent with the draft revision to Regulatory Guide 1.89 Section 5.a, since it does not recognize any alleviation in qualification requirements for equipment located in mild environments. (ii) The specific inclusion of aging requirements for electromechanical equipment is inappropriate in the rulemaking. Such details should be included in the revision to Regulatory Guide 1.89 in conjunction with discussions of other aging mechanisms.

50.49, section e.8 - This statement is in direct conflict with the Staff's response to comment number 70 contained in Part II of Revision 1 to NUREG-0588 where the Staff recognized the validity of conservatism in calculation models, under certain circumstances, to account for such items as variation in the commercial product.

50.49, para f - (i) This paragraph should be amended to state 'each item of electric equipment, as defined by paragraph c, must.... (ii) This paragraph does not recognize the alleviations permitted in Section 5a of the revised Regulatory Guide 1.89 for equipment located in mild environments.

50.49, para g - (i) This paragraph is written specifically for equipment employed for hostile environment applications and does not recognize alleviations appropriate for equipment located in mild environments. (ii) Strict application of these requirements will negate testing already completed for earlier plants. The alleviations recognized in Section D of the draft revision to Regulatory Guide 1.89 must be included.

50.49, section g.4 - The requirement to use the same piece of equipment throughout the test sequence is in conflict with IEEE 323-1974 (Section 6.3.2.(3)), the current and the proposed revision to Regulatory Guide 1.89.

50.49, para h - (i) This paragraph does not exclude equipment located in mild environments from the scope of the evaluation and notification which is required to be completed within 90 days of publishing the final rule. Inclusion of this scope of equipment for the first time will require a significant industry effort to assemble the appropriate documentation, complete the requisite evaluation and establish schedules for any equipment not qualified to the Staffs requirements. In which case, 90 days is totally inadequate for such an effort. (ii) On line 8 of paragraph h the word 'testing' should be replaced by 'qualification'. (iii) Westinghouse endorses the proposed extension of the deadline for resolving all issues associated with this rulemaking.

SOUTH CAROLINA ELECTRIC & GAS COMPANY
POST OFFICE BOX 764
COLUMBIA, SOUTH CAROLINA 29218

T. C. NICHOLS, JR.
VICE PRESIDENT AND GROUP EXECUTIVE
NUCLEAR OPERATIONS

'82 MAR 22 A10:15

March 18, 1982

Mr. Samuel J. Chilk
Secretary of the Commission
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

(19)
DOCKET NUMBER
PROPOSED RULE PR-50
(47 FR 2876)

Attn: Docketing and Service Branch

Subject: Virgil C. Summer Nuclear Station
Proposed Rulemaking
10 CFR 50.49

Dear Mr. Chilk:

On January 20, 1982, the Commission issued for comment proposed changes to 10 CFR Part 50. South Carolina Electric and Gas Company herein offers the attached comments to proposed rule 10 CFR 50.49, entitled "Environmental Qualification of Electric Equipment for Nuclear Power Plants."

If you have any questions concerning these comments, please let us know.

Very truly yours,

T. C. Nichols, Jr.

AJ:TCN:lkb

Attachment

cc: V. C. Summer
G. H. Fischer
H. N. Cyrus
T. C. Nichols, Jr.
M. B. Whitaker, Jr.
J. P. O'Reilly
H. T. Babb
D. A. Nauman
C. L. Ligon (NSRC)
W. A. Williams, Jr.
O. S. Bradham
J. L. Skolds
J. B. Knotts, Jr.
R. R. Mahan
NPCF
File

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ADD:
S. Aggarwal

ATTACHMENT

COMMENTS TO:
PROPOSED RULE
10CFR50.4

"Environmental Qualification of Electric Equipment for Nuclear Power Plants"

1. Exception is taken to the Regulatory Flexibility Statement, "this rule codifies existing requirements and imposes no new costs or obligations on utilities," because of the ambiguity in the proposed rulemaking as outlined in the comments below.

2. The scope of the proposed rule does not clearly identify if the requirements pertain to harsh environments, mild environments, or both. Furthermore, this proposed rule does not define these two terms which were presented by NRC staff members at the July 7-10, 1981, Bethesda meeting on equipment qualification. Failure to address these concepts results in continued confusion over what is specifically being required by this rulemaking.

It is recommended that the proposed rulemaking be modified to provide a definition of "harsh" and "mild" environments. The rulemaking should provide the requirements for qualification of equipment in each environmental area and the Regulatory Guide should describe the methods acceptable to meet these requirements.

3. A conflict exists between the proposed rulemaking and the Reg. Guide 1.89 revision regarding the allowed methods of qualification, if the proposed rulemaking applies to mild environment equipment as defined in the proposed Reg. Guide revision. In the proposed rule, analysis is allowed to provide for qualification only in specific cases outlined in section (f) (4) (i) and (ii); however, the proposed Reg. Guide 1.89 revision allows for any mild environment equipment to be qualified using partial test data and analysis as stated in section C.5.a, page 9. These criteria are in conflict, thus promoting consternation over the scope of intended equipment to be covered by the proposed rulemaking.

4. The aging, documentation and submittal of analysis requirements outlined in the proposed rule, if applied to equipment in a "mild" environment, would be a very significant change to the requirements contained in DOR Guidelines and NUREG 0588.

5. The proposed rule does not address the requirements to maintain the Environmental Qualification over the lifetime of the equipment. This is addressed only in the proposed revision to Reg. Guide 1.89. The rulemaking should provide the requirements for maintaining qualification and Reg. Guide 1.89 should describe the methods acceptable to meet the requirements.

6. Exception is taken to the expiration of comments on 3/22/82, since Regulatory Guide 1.89 was stated to be published for comments concurrent with this proposed rule. Since Reg. Guide 1.89 was not published for comment until late February, it is requested that the expiration of comments for the proposed rulemaking be extended to that allowed for the proposed Reg. Guide 1.89 revision.

NRC-82-47

WISCONSIN PUBLIC SERVICE CORPORATION

P.O. Box 1200, Green Bay, Wisconsin 54305

'82 MAR 22 A11:34

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March 19, 1982

(21)

DOCKET NUMBER
PROPOSED RULE PR-50
(47 FR 2876)

Secretary of the Commission
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Docketing and Service Branch

Dear Sir:

Docket 50-305
Operating License DPR-43
Kewaunee Nuclear Power Plant

Subject: Proposed Rule 10 CFR Part 50
Environmental Qualification of Electric Equipment
for Nuclear Power Plants

We have reviewed the proposed rule, 10 CFR part 50, Environmental Qualification of Electric Equipment for Nuclear Power Plants, as published in the Federal Register of January 20, 1982 (47 F.R. 2876). The following comments are offered for your consideration:

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S. Aggarwal

Page 2878 states, under Regulatory Flexibility Statement, "This rule codifies existing requirements and imposes no new costs or obligations on utilities." We take exception to this statement. The qualification efforts underway now are based on NRC interim requirements. In addition, the inclusion of cold shutdown requirement is another major area of concern.

This proposed rule should recognize the fact that already completed qualification evaluations done in accordance with existing criteria satisfies this rule. The new rule significantly changes requirements for documentation, temperature and pressure profiles, aging and margin. This is especially true for those operating plants which are now required to meet only the DOR Guidelines. The new rule, as written, would mandate the requalification or replacement of a significant amount of equipment previously qualified to NRC imposed requirements.

A new issue introduced in the proposed rule is the requirement to qualify "equipment needed to complete one path of achieving and maintaining a cold shutdown condition." This is a significant issue as it proposed to modify the licensing basis for Kewaunee Nuclear Power Plant and other operating plants.

The proposed position on cold shutdown is contrary to the NRC position delineated in a January 19, 1981, letter from Darrell Eisenhut to All Licensees of Operating Plants and Applicants for Operating Licenses and Holders of Construction Permits. The referenced letter states, in relevant part, "Plants licensed to a hot safe shutdown condition are only required . . . to qualify the equipment necessary to achieve a hot shutdown . . . ." A change as proposed in the rule, at this advanced state of the industry's qualification effort, most certainly introduces significant new costs and obligations with no demonstrated improvement to safety.

We suggest a cost/benefit analysis be performed and that the many specific comments such as delineated in the attachment be resolved prior to issuance of the rule in final form.

We will gladly discuss any questions you may have concerning this subject.

Very truly yours,

E. R. Mathews

E. R. Mathews, Senior Vice President
Power Supply and Engineering

jac

Enclosure

cc - Mr. Robert Nelson, NRC Resident Inspector
RR #1, Box 999, Kewaunee, WI 54216

ENCLOSURE: Specific Comments

Item 1

Page 2878, paragraph 50.49 (c), last sentence, "Also included is equipment needed to complete one path of achieving and maintaining a cold shut down condition."

COMMENT: As stated in the cover letter, this sentence should be deleted.

Item 2

Page 2878, paragraph 50.49 (d)(1).

COMMENT: This rule pertains to environmental qualification, not "structural integrity requirements." This implys seismic and dynamic considerations which were "not included" per section (a). Loss of structural integrity is relevant only if it impacts performance characteristics and would be accordingly resolved through environmental qualification. We recommend the "structural integrity requirements" be deleted.

Item 3

Page 2878, paragraph 50.49 (d)(3).

COMMENT: Add the words "harsh" between "the" and "environmental conditions." Existing surveillance and maintenance practices provide adequate assurance that mild (non-harsh) environment located equipment will perform its intended safety function when required. Therefore harsh only need be addressed here.

Item 4

Page 2878, paragraph 50.49 (e)(2).

COMMENT: Humidity is traditionally considered in qualification testing by aging and type testing under high relative humidity to maximize any of its potential degrading effects. However, there is no known theory that can translate any observed effects to a true end-of-life condition at a quantified age. Since no valid method for accelerating the effects of humidity in any quantifiable way has been developed, it is especially unrealistic to require addressing time dependent variations of relative humidity. On the other hand, wet and dry conditions have been shown to cause degradation in some insulating materials, e.g., cable insulation, but tests for the susceptibility of insulations are short-time proof tests rather than accelerated aging tests. It is suggested that the time variations in humidity be addressed in the proposed rule in the same manner as synergisms (see section (e)(7)), since the state-of-the-art in both areas is at a similar stage of infancy.

The section should read "Humidity during normal operation and design basis events must be considered. The effects of time-dependent variations of relative humidity must be considered when these effects are known to have a significant effect on equipment performance."

Item 5

Page 2878, paragraph 50.49 (e)(5).

COMMENT: This sentence implies that "ongoing qualification of prototype equipment naturally aged in plant service" is the only acceptable means to show that an installed item has additional qualified life beyond that originally established. Actually, other means could be equally effective. For example, if measurements of actual ambient temperature at the equipment location during plant operation indicates an average temperature less than that assumed as a basis for age preconditioning in the original qualification tests, the preconditioning duration can be reinterpreted to yield an equivalent aged life greater than the original. Thus, the wording of the rule should be altered to reflect a broader range of acceptable options for extending qualified life.

The sentence should read "The equipment must be replaced at the end of its originally established qualified life unless new information based on testing or actual plant conditions is provided to demonstrate additional qualified life."

Item 6

Page 2878, paragraph 50.49 (e)(7).

COMMENT: As synergistic effects are identified through research, they could be accounted for via additional margin during testing procedures. This paragraph should be deleted.

Item 7

Page 2879, paragraph 50.49 (j)(1).

COMMENT: The requirement for satisfaction of the single failure criterion for justification for continued operation (JCO) is overly restrictive. If the alternative equipment referred to in this section did satisfy the single-failure criterion, then no JCO would be needed, because redundancy would exist to perform the required safety function. It is precisely because satisfaction of the single-failure criterion is in question because of incomplete qualification information that a JCO is needed. The JCO may include designation of alternative equipment that is qualified, but not necessarily single failure-proof. For example, if the containment isolation valves inside containment are not fully qualified, the JCO may designate the isolation valves outside containment to accomplish the safety function. These valves do not fail as a result of a harsh environment inside containment. The outside containment valves provide an alternative method of accomplishing containment isolation but, presuming failure of the inside valves, are not redundant. Items 1 through 5 provide sufficient assurance of continued safe operation during short-term interim operation even with the change recommended below.

Delete the words "and satisfies the single failure criterion."

UNITED STATES

NUCLEAR REGULATORY COMMISSION

'82 MAR 22 P2:13

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Proposed Rule: 10 C.F.R. 50.49 re:)
Environmental Qualification of Electrical)
Equipment for Nuclear Power Plants,)
47 Fed. Reg. 2876 (Jan. 20, 1982))

(27)

DOCKET NUMBER
PROPOSED RULE PR - 50 (47 FR 2876)

COMMENTS BY THE NEW ENGLAND COALITION ON NUCLEAR POLLUTION

The New England Coalition on Nuclear Pollution has studied the proposed rule which purports to "clarify and strengthen" the criteria for environmental qualification of electrical equipment and to "codify the environmental qualification methods and clarify the Commission's requirements in this area".

As an intervenor in the Nuclear Regulatory Commission process for review of Operating License and Construction Permits for several New England nuclear plants, and as full party also to generic rulemakings and court challenges on various nuclear safety issues, the New England Coalition has known for several years in some detail the meaning and importance of environmental qualification. NECNP is , therefore, surprised at the statements in Supplemental Information, in the Federal Register notice of 1/20/82, made in such bland language , we believe, as to becloud the intense urgency of the situation which exists with regard to nuclear plant safety vis à vis the ability of critical systems and components to withstand the insults of temperature and pressure, humidity, chemicals, radiation, and aging, singly or in combination, and still retain the ability to function as required to protect the public in the event of a severe accident.

DSP 1/0
Add: S. Aggarwal.

As we read on, we discover that not only is a sense of urgency not apparent but, we must conclude, the proposed rule would relax, not strengthen, the criteria and

allow substantial delays in utility development of programs for qualification, rather than require concerted and imminent action to correct the deficiencies in this most serious area of nuclear plant safety.

We believe that the Commission's directive, issued after two years of efforts to get licensees to comply with its request to implement environmental qualification at the plants,

> that the DOR Guidelines and NUREG-1588 form the basis for the requirements licensees and applicants must meet until the rulemaking has been completed,

and the Commission's Memorandum and Order CLI-80-21 which directed that

> the environmental qualification of electric equipment in operating nuclear power plants be completed by June 30, 1982,

should be left in place, as the problems have been known since 1978.

We disagree with reduction of the scope of the rule which, as proposed, "does not include all electrical equipment important to safety in its various gradations of importance". Safety equipment is safety equipment, and several nuclear plant accidents have pointed up all too clearly that the unexpected is sure to happen at the least desirable moment , and not in a prescribed course.

If the proposed extended deadline for compliance were adopted (the "second refueling outage after March 31, 1982"), and some electric equipment important to safety left out of review, then the New England Coalition would have to conclude that the result would be a decrease in protection of the public.

Examples of understanding by recognized federal agencies or committees of serious nuclear safety problems are several .One will suffice here.

The report of the Reactor Safety Research Review Group, chaired by Norman C. Rasmussen and Herbert J. C. Kouts, submitted in September 1981 to the President's Nuclear Safety Oversight Committee, Governor Bruce Babbitt, Chairman, referred at several points to the need for safety systems to work as planned to mitigate the consequences of a serious nuclear accident. We cite three.

A. Internal Initiators
The main cooling system of a light water reactor (LWR) contains water at high temperature and pressure. If the pressure system boundary should leak or fail, water and steam would be rapidly ejected and a loss-of-coolant accident would be initiated. The outcome of such an event would depend upon the effectiveness of the emergency safety features of the plant on coping with the event.
(Page I-1. Emphasis added.)

C. Decay Heat Removal Systems
Following shutdown of a nuclear plant, the radioactivity in the core continues to generate substantial amounts of heat. To prevent fuel damage, this heat must be removed. The decay heat removal system has this function. Risk analysis indicates that potential failure of this system is an important contributor to the overall risk. (Page II-3. Emphasis added.)

A. The Fuel Damage Process
...Serious failures of the cooling system could result in various degrees of overheating that would lead to gross cladding failure and eventually to deterioration and melting of the fuel itself.

The possibility of damage to the fuel is a major safety issue... ...(A)ny large release of ...fission products would be preceded by serious damage to the fuel. (Page III-1)

It is obvious that failure of safety systems can be caused by failure of electrical equipment to withstand the multiple insults of an accident environment and that such failure would jeopardize the health and safety of the public. If not, there would be no rulemaking. However, when an NRC Staff report shows that 80% of nuclear plant electrical equipment remains unqualified, with from 15 to 40% of that expected to fail and needing replacement, the rational for delay in implementing even minimum safety requirements utterly escapes us. We doubt any can exist.

A fatal flaw in the proposed rule is the removal of Staff supervision of plant safety analysis, instead allowing the utilities to make their own judgments as to what is safe or safe enough re. environmental qualification.

Perhaps the most telling sentence in the proposed rule is found in the Regulatory Flexibility Statement:

...(T)his rule... imposes no new costs or obligations on utilities.

We believe that it goes much farther than that and would seriously reduce even those

safety gains (inadequate though they are) which the Commission has been able to achieve to date in the area of environmental qualification.

The New England Coalition would oppose any loophole in the proposed rule which would allow an applicant for operating license to avoid physical testing to prove environmental qualification of safety equipment, knowing, as it would have for several years, that such testing was a requirement.

We urge the Commission not to adopt the proposed rule and thereby retreat from its firm safety stance on environmental qualification. We urge the Commission instead to maintain and continue the essential process toward greater safety, to remember the lessons which came out of the accident at Three Mile Island Unit II (now but days from the third anniversary of its beginning) which produced enhanced, and badly needed, awareness of this and many other serious outstanding safety issues. In view of the known deficiencies in existing equipment, and the mandate of the Atomic Energy Act to provide "reasonable assurance of safety", the Commission can do no less.

Respectfully submitted,

Diana P Sidebotham

Diana P. Sidebotham
President
New England Coalition
on Nuclear Pollution, Inc.
Box 637
Brattleboro, Vermont 05301

March 19, 1982

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

'82 MAR 22 P1:58

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Proposed Rule: 10 CFR Part 50	)
	)
Environmental Qualification of	)
Electrical Equipment for	)
Nuclear Power Plants	)
	)
47 F.R. 2867	)
January 20, 1982	)

(26)

DOCKET NUMBER
PROPOSED RULE PR-50
(47FR2876)

COMMENTS BY FLORIDIANS UNITED FOR SAFE ENERGY

INTRODUCTION

On January 20, 1982, the Nuclear Regulatory Commission published a proposed rule at 47 F.R. 2876. The proposed rule is intended to codify and clarify the Commission's requirements in the area of environmental qualification for electrical equipment.

Electrical equipment requiring environmental qualification is safety grade equipment needed to mitigate the effects of potentially catastrophic nuclear reactor accidents. Environmental qualification signifies that the equipment has been designed and tested to withstand and function in the hostile environment of a nuclear reactor accident.

I. The Proposed Rule Diminishes Public Safety.

The commercial nuclear reactor industry represents the greatest physical threat, to the American people, of all civilian industries. The singular, worst possible accident is a core melt, which will conceivably result in the deaths of thousands of Americans. Instead of aggressively pursuing the safest possible operation of nuclear reactors, the NRC is abandoning its safety practices and abandoning the American people.

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S. Aggarwal

The proposed rule adds an additional two years to the time period in which environmentally qualified electrical equipment would not be required in operating nuclear power plants. The proposed rule also allows indefinite extensions of this time period to utilities that are not in compliance with 10 CFR Part 50.49.

The NRC is also abandoning its practice of requiring environmental qualification of all safety grade electrical equipment. The proposed rule proffers "gradations of importance to safety", a confusing and hitherto unknown category of electrical equipment. This proposed rule can only lead to wrangling between the NRC and the utilities, differences of interpretation, delays in implementation, and obfuscation of the clear directives of CLI-80-21.

The proposed rule creates an absurd situation where "technical judgement" for compliance with environmental qualification is taken from the NRC Staff and given to the utilities. This proposal is akin to allowing the batters in baseball games the opportunity to call their own balls and strikes.

II. <u>The Proposed Rule Diminishes the Public's Confidence in the NRC.</u>

The NRC has come under close scrutiny since the accident that destroyed the reactor at Three Mile Island. The Kemeny Commission Report and the NRC's own Rogovin Report severely criticize the poor management and poor safety practices utilized by the NRC. The criticisms of unacceptable practices appear not

only to be accurate, but also to be precursors of worse things to come.

The proposed rule strikes at the very heart of the NRC's Congressional mandate to assure the safety of the American public.

III. The Proposed Rule Exacerbates Other Technical Failures.

There is growing evidence that reactor safety is being greatly reduced by the deterioration of safety grade components in operating reactors. Steam generator failures are commonplace in the industry with Surry, Turkey Point, Palisades, San Onofre, Ginna, and Three Mile Island-1 being the first of many reactors to feel detrimental effects. Another technical failure is the premature embrittlement of the reactor pressure vessel. Embrittlement occurs as the neutron bombardment from the core causes deterioration of the reactor pressure vessel walls. The walls no longer have the ability to quickly distribute changes of temperature. During accident modes, the reactor vessel is in danger of cracking if coolant water drops the inside temperature too quickly.

The combination of steam generator failure, embrittlement, and environmentally unreliable safety grade electrical equipment create a situation whereby nuclear reactors present a greater danger to the American people, than has ever occured at any time in history.

CONCLUSION

Floridians United for Safe Energy urge the Commission to

reject the proposed rule and aggressively pursue the safety practices set forth in CLI-80-21. Adoption of the proposed rule decreases reactor safety and diminishes the Nuclear Regulatory Commission's ability to assure the public's safety.

Respecfully submitted,

Mark P. Oncavage

Dated: March 19, 1982

Miami, Florida

Mark P. Oncavage
President,
Floridians United for
Safe Energy
12200 S.W. 110th Avenue
Miami, Florida 33176

PROPOSED RULE PR-50 (25)
(47 FR 2876)

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

In re: Proposed Rule, 10 C. F. R. 50.49 (Environmental Qualification of Electric Equipment for Nuclear Power Plants, 47 Fed. Reg. 2876, Jan. 20, 1982)

COMMENTS BY JOHN F. DOHERTY, J. D., OF HOUSTON, TEXAS

On January 20, 1982, the Nuclear Regulatory Commission published in the Federal Register (47 Fed. Reg. 2876), "to clarify and strengthen" the Commission criteria for environmental qualification of electrical equipment in nuclear power plants. John F. Doherty, J. D., of 4327 Alconbury Lane, Houston, Texas 77021 now offers the below comments on the proposed rule.

First, the proposed rule represents a retreat to pre-TMI-2 attitudes with regard to regulation. It indulges the utilities in granting them far more time than necessary to bring their plants, which are a source of danger to us, up to the requirments of 10 CFR. App. A, General Design Criteria 4.

The firmness of the Commission's order (CLI 80-21, 11 NRC 707, 1980) has been effectively scuttled in the proposed rule, reflecting the changed members of the Commission since the arrival of the big business favoring Reagan administration. There are two conclusions to be drawn from the proposed rule by comparing it to the earlier CLI-80-21: Public Safety is a political matter, and this means that as in prior to TMI-2, and the Browns Ferry fire of 1975, the mice are being trusted once more to guard the cheese.

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ADS:
S. Aggarwal

Section 50.49(h) as proposed gives utilities until the second refueling outage after March 31, 1982 to complete environmental qualification plus, section 50.49(h), (i), and (j) make provision for even more time. One can only conclude the NRC is scared to require a shutdown of a plant to get the environmental qualification done. These sections should have fines established for each day beyond a fixed deadline, with shutdown after an ultimate date. So long as the Commission will not shut down, the utilities won't conform. The current rule is an unmistakable signal to the utilities that, "We're afraid of you." The proposed rule is toothless: the plants will remain with environmentally unqualified equipment indefinitely. The Proposed Rule needs a section that states under no circumstances will a plant be permitted to operate if by a definite date all equipment is not environmentally qualified. That would be one tooth.

The Commission has already been laughed at by the utilities, as is shown in CLI 80-21 (supra.)at 712, which states: "The history of the qualification issue since our April 13, 1978 order indicates that some licenses (sic) have ignored the responsibility we emphasized in our original order. Further prodding through the Inspection and Enforcement Division to get the utilities to tell the NRC what equipment was or was not qualified failed. (CLI 80-21, (supra.) at 713) This history is absolutely embarassing in its disregard of a government regulatory body.

The proposed rule should be stripped of the exceptional case power at the end of proposed 10 CFR 50.49(h). And in line with this, 10 CFR 50.49 (i) should be worded to require notification of any qualification problem by a fixed date, rather than retain the "when it is discovered" language it now contains.

It is alarming the Commission has established a new class of equipment which need not be environmentally qualified because it lacks the necessary "gradation" of importance. The new class is another loop-hole through which utilities will evade environmental qualification. Just how hard will it be to get certain items of equipment declared not important enough to require environmental qualification because although important to safety it does not reach a necessary gradation of safety someone had in mind?

The proposed rule generates no confidence in me for the Commission. It is an escape from the responsibility of confrontation of those ignoring the Commission and the public good. The rule is hence irresponsible.

Respectfully,

John F. Doherty, J.D.

John F. Doherty, J.D.

PP&L Pennsylvania Power & Light Company
Two North Ninth Street • Allentown, PA 18101 • 215 / 770-5151

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emp

Norman W. Curtis
Vice President-Engineering & Construction-Nuclear
215 / 770-5381

March 19, 1982

(22)

DOCKET NUMBER
PROPOSED RULE PR-50
(41 FR 2876)

Secretary of the Commission
Attention: Docketing and Service Branch
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUSQUEHANNA STEAM ELECTRIC STATION
COMMENTS ON PROPOSED RULE 10 CFR PART 50.49
ENVIRONMENTAL QUALIFICATION OF ELECTRICAL
EQUIPMENT FOR NUCLEAR POWER PLANTS
ER 100450 FILE 841-9
PLA-1040

Docket Nos. 50-387
50-388

Dear Sir:

This letter is in response to a Federal Register Notice published Wednesday, January 20, 1982, requesting comments on proposed rule 10 CFR Part 50.49 entitled Environmental Qualification of Electric Equipment for Nuclear Power Plants.

Specific comments to the proposed rule are listed below. These comments address specific sections of the proposed rule and are numbered the same as the section addressed.

d(1) This section is unclear; as written it specifically excludes seismic and dynamic requirements. The section speaks of structural integrity but it is not clear if this is limited to the integrity of the pressure boundary. Is this requirement limited to "structural integrity" or is the wording synonymous with "performance of safety function".

e(1) The use of the time-dependent temperature and pressure at the location of the equipment as the basis for the environmental qualification should not be required if that piece of equipment is not required to perform its intended safety function under those conditions.

e(5) The last sentence of this section is too restrictive as it only permits one course of action. This statement also suggests that the Arrhenius Method is no longer endorsed by the NRC.

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s/o
Attn:
S. Aggarwal

e(7) This section requires that preconditioning and testing consider "known synergistic effects" when these effects are known to have a significant effect on equipment performance. As written, this section implies that these effects have been identified and demonstrated and that the industry is aware of them.

g(3)i The option presented in this paragraph is excessive in its limitations. The envelope should not be that which results from any design basis event during any mode of operation but rather the envelope that results during any mode of operation during which the subject equipment must perform its safety function.

f(4)ii The wording of this section is unclear. Is a purchase order revision made after May 23, 1980 considered the same as a purchase order placed after May 23, 1980.

j(1) The phrase "and satisfies the single failure criterion" is unclear as used in this section. Also, define the term "adequately qualified".

An effective review of this rule is dependent upon a concurrent review of revised Regulatory Guide 1.89. Late publication of the revised regulatory guide has had an impact on our review. It is, therefore, suggested that any actions taken on this rule be delayed until comments are received on the revised regulatory guide.

Very truly yours,

N. W. Curtis
Vice President-Engineering & Construction-Nuclear

WWW/mks