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July 24, 2002

5/13/02
67 FR 32069
(3)

Michael T. Lesar, Chief
Rules and Directives Branch
Office of Administration
U. S. Nuclear Regulatory Commission
Washington, DC 20555

RE: Comments on Draft Regulatory Guide DG-1118, "Application of the Single-Failure Criterion to Safety Systems," 67 Fed.Reg. 32,069 (May 13, 2002)

Dear Mr. Lesar:

In the referenced *Federal Register* Notice, the U.S. Nuclear Regulatory Commission ("NRC") Staff requested comments concerning proposed revisions to its regulatory guidance on application of the single-failure criterion. 67 Fed. Reg. 32,069 (May 13, 2002). The comments provided herein are submitted on behalf of the Nuclear Utility Backfitting and Reform Group ("NUBARG")[1] as part of our ongoing monitoring of NRC regulatory reform efforts and application of the backfitting rule to regulatory actions.

Proposed NRC Action

The Staff proposes to revise Regulatory Guide ("RG") 1.53, "Application of the Single-Failure Criterion to Nuclear Power Plant Protection Systems," June 1973. Draft Regulatory Guide DG-1118, "Application of the Single-Failure Criterion to Safety Systems," would delete references to IEEE 379-1972 and add references to IEEE 379-2000.[2] By

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1 NUBARG is a consortium of utilities, operating a substantial number of U.S. nuclear power reactors. NUBARG was formed in the early 1980s and actively participated in the development of the NRC's backfitting rule in 1985. NUBARG subsequently has monitored the NRC's implementation of the backfitting rule and NRC regulatory reform efforts.

2 Institute of Electrical and Electronic Engineers ("IEEE") Trial-Use Guide 379-1972, "Application of the Single-Failure Criterion to Nuclear Power Generating Station Protection Systems," and IEEE Standard 379-2000, "Application of the Single-Failure Criterion to Nuclear Power Generation Station Safety Systems."

Tompkins = ADM-013

E-RIDS = ADM-03
Cald = A Bernek (AFB)
S K. Aggarwal (SKA)

referencing the updated standard, the revised regulatory guide would expand the scope of the single-failure criterion regulatory guidance with respect to the electrical power, instrumentation, and control portions of nuclear power plant *safety systems*.[3] As discussed below, NUBARG is concerned that the proposed language could lead a Staff reviewer to believe that it would be acceptable to apply the guidance in a manner that would conflict with a plant's current licensing basis for plant *safety systems*. Such an action would exceed the agency's current regulatory authority over operating nuclear power plants set forth in 10 C.F.R. § 50.55a(h), "Protection and Safety Systems," as well as that described in existing regulatory guidance set forth in the current RG 1.53; thus, the draft guide should be revised to clarify that the guidance applies to currently operating plants' *protection systems*.[4] Therefore, clarifying language is being suggested by NUBARG to minimize the likelihood that a backfit would be inappropriately suggested by reviewing NRC Staff.

Backfitting Concern

NUBARG agrees with the proposed regulatory guidance revisions as applied to new plants (*i.e.*, applications filed on or after May 13, 1999). NUBARG is concerned, however, with the specific wording in DG-1118, Section D, "Implementation," and how it might be interpreted for currently operating plants. The draft guide proposes the following:

> Except in those cases in which an applicant or licensee proposes or has previously established an acceptable alternative method for complying with specified portions of the NRC's regulations, the method to be described in the final guide (reflecting public comments) will be used in the evaluation of submittals in connection with applications for construction permits, design certifications, operating licenses, and combined licenses. *Licensees of operating nuclear power plants* will have the *option* to use for safety system modifications (1) the June

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[3] Section B of DG-1118 states the following concerning electrical *safety systems* addressed by IEEE 379-2000: "The systems include the actuation and protection systems, as well as the sense, command, and execute features of the power system." IEEE 379-2000 states that the "standard covers the application of the single-failure criterion to the electrical power, instrumentation, and control portions of nuclear power generating station safety systems." IEEE 379-2000 at 1.

[4] "Protection systems" are those systems "designed (1) to initiate automatically the operation of appropriate systems including the reactivity control systems, to assure that specified acceptable fuel design limits are not exceeded as a result of anticipated operational occurrences and (2) to sense accident conditions and to initiate the operation of systems and components important to safety." 10 C.F.R. Part 50, Appendix A, General Design Criterion 20.

> 1973 issue of Regulatory Guide 1.53 (which endorses IEEE Std. 379-1972 with exceptions) *and be subjected to review by the Staff on a case-by-case basis* or (2) this Revision 1 that endorses IEEE Std. 379-2000 with no exceptions.

Emphasis added. DG-1118 at 3.

As to Staff review, the guidance could be read by an NRC reviewer to allow the NRC to require application of IEEE 379-2000 through the case-by-case review without necessary 10 C.F.R. § 50.109 analyses being performed. This is of concern to NUBARG because currently operating plants may not have applied IEEE 379-1972, or later editions, to all *safety systems*, but only to *protection systems*, in accordance with the guidance in the current RG 1.53.[5] In this circumstance, the final regulatory guide should clearly require the Staff to perform a backfitting analysis that justifies such application of the updated standard to the broader scope of equipment.

Recommendations

To avoid Staff from inadvertently imposing a backfit upon currently operating nuclear power plants, we recommend that the final revision of RG 1.53 clarify that for operating plants, the regulatory guidance applies only to *plant protection systems*, and that any application to *safety system* modifications (other than *protection systems*) is voluntary, or in accordance with a plant's current licensing basis. Otherwise, the regulatory guide revision should be subject to the provisions in 10 C.F.R. § 50.109, "Backfitting." To clarify the guidance, NUBARG suggests the following modification to the above-quoted "Implementation" section of DG-1118:

> Except in those cases in which an applicant or licensee proposes or has previously established an acceptable alternative method for complying with specified portions of the NRC's regulations, the method to be described in the final guide (reflecting public comments) will be used in the evaluation of submittals in connection with applications for construction permits, design certifications, operating licenses, and combined licenses. *For operating nuclear plants, it is important for the Staff to understand which regulatory provisions of 10 C.F.R. § 50.55a(h) apply to a particular plant, according to the date of the construction permit or application, as appropriate. Licensees of operating nuclear power plants as of May 13, 1999, may continue to meet applicable regulatory requirements and comply with a plant's current licensing basis for plant protection system and plant safety system modifications, or may optionally use (1) the June 1973 issue of Regulatory Guide 1.53 (which endorses IEEE Std. 379-*

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[5] NUBARG previously commented on the broader scope when the NRC incorporated by reference IEEE 603-1991 into 10 C.F.R. § 50.55a(h). Copies of NUBARG's comments are attached for reference.

1972 with exceptions) or (2) this Revision 1 that endorses IEEE Std. 379-2000 with no exceptions.

(Emphasis on suggested changes.) We also recommend that, prior to issuance, the Committee to Review Generic Requirements review the final regulatory guide.

Please contact us if you have any questions regarding this matter. As noted above, for your convenience, we are enclosing a copy of NUBARG's previous comments regarding the incorporation by reference of IEEE 603-1991.

Sincerely,

Original signed by Patricia L. Campbell

Thomas C. Poindexter
Patricia L. Campbell
Counsel to NUBARG

Enclosures
cc: C. Ader, CRGR Chairman

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43, RUE DU RHONE
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December 1, 1997

Mr. John C. Hoyle
Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Attention: Rulemakings and Adjudications Staff

Dear Mr. Hoyle:

On behalf of the Nuclear Utility Backfitting and Reform Group, we are submitting these comments to address the direct final rule regarding IEEE Std. 603-1991, "Criteria for Safety Systems for Nuclear Power Generating Stations." The direct final rule would require licensees to comply with IEEE Std. 603-1991 for future modifications to safety-related protection systems in lieu of IEEE Std. 279, "Criteria for Protection Systems for Nuclear Power Generating Stations," which is part of the licensing bases for many plants. The scope of IEEE Std. 603-1991 is substantially broader than IEEE Std. 279 and addresses additional functional and design requirements that are not addressed in IEEE Std. 279. For example, IEEE Std. 603-1991 establishes requirements for the "sense-and-command," "execute," and "power supply" functions for all safety-related systems, while IEEE Std. 279 only addresses the "sense-and-command" function for reactor protection systems and engineered safety feature actuation systems.

Under 10 C.F.R. § 50.109, the direct final rule would appear to constitute a backfit for the reasons discussed below, and therefore a backfitting analysis should be performed prior to the rule becoming effective. As also discussed below, the use of a direct final rule to impose new standards on licensees appears inconsistent with the Administrative Procedure Act (APA). The use of a direct final rule is typically limited to issues which have no substantial impact.

10 C.F.R. § 50.55a(h) currently requires licensees with construction permits issued after January 1, 1971 to comply with the revision of IEEE Std. 279 in effect on the date of the application for a construction permit. The proposed revision to 10 C.F.R. § 50.55a(h) would require changes to protection systems initiated on or after January 1, 1998 to comply with the additional requirements of IEEE Std. 603-1991. IEEE Std. 603-1991 also requires adherence to additional IEEE standards referenced in IEEE Std. 603-1991. However, the revisions of the IEEE standards referenced in IEEE 603 Std. 1991 are not necessarily the revision that licensees are currently committed to. The additional requirements of IEEE Std. 603-1991 would thus

impose a change to the current licensing basis of plants, and for that reason, would represent a backfit.

The rule would also result in changes to plant procedures, and therefore would constitute a backfit as defined in Section 50.109(a)(1). Due to the broader scope of IEEE Std. 603-1991 in comparison with IEEE Std. 279, licensees would be required to make changes to their existing procedures that administratively control the power source and instrumentation and control functions of protection systems.[1]

The NRC concluded that a backfit analysis for the implementation of IEEE Std. 603-1991 was not necessary because it apparently considered future changes to protection systems to be "voluntarily initiated by the licensee. . . ." 62 Fed. Reg. at 53,934. We recognize that it may be appropriate, in some circumstances, for licensees to use new criteria or standards for plant changes initiated by the licensee, such as changes that involve advances in design or operations. However, to mandate the use of new criteria for all future plant changes would constitute a backfit. For example, the NRC has long recognized that using criteria more stringent than the Standard Review Plan (SRP) would be a backfit except in limited circumstances. See NRC Manual Chapter 0514 (Appendix at pp. 1-2). In addition, the NRC's assumption that all changes are voluntarily initiated is not necessarily accurate. Changes made on account of equipment obsolescence, planned maintenance, or scheduled replacement would not be voluntary. Nevertheless, under the proposed rule, these changes would have to comply with IEEE Std. 603-1991.

Historically, most licensees have relied on IEEE Std. 279 as their current licensing basis for changes to protection systems. The proposed rule could result in dual licensing bases. For example, if a licensee replaced a single component in a protection system, the replaced component would comply with IEEE Std. 603-1991, but the remainder of the system would comply with IEEE Std. 279.

In addition to the backfitting issues identified above, we have other concerns regarding whether or not the use of a direct final rule in this manner is consistent with the APA. Typically, a direct final rule can only be used when there is no significant impact. The additional requirements imposed by IEEE Std. 603-1991 could have significant impacts as noted above. Moreover, we note that the "good cause" exemption of Section 553(b)(3)(B) of the APA (which

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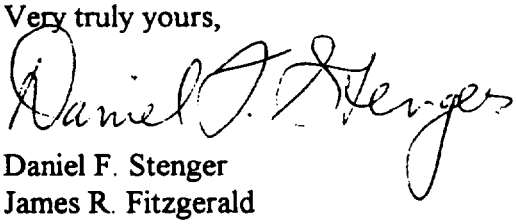
[1] An additional impact would be the increase in systems, structures, and components that would be brought within the scope of the Maintenance Rule as discussed in 10 C.F.R. § 50.65. In addition, it is our understanding that IEEE Std. 603-1991 is currently being revised to address the use of digital and computer-based systems. A more efficient use of both the NRC's and licensees' resources would be to wait until IEEE Std. 603-1991 has been revised before initiating rulemaking.

is the basis for a direct final rule) only allows an agency to forego the notice-and-comment rulemaking "when the agency for good cause finds that notice and public procedure thereon are impracticable, unnecessary, or contrary to the public interest." None of these factors apply here. Therefore, ordinary rulemaking with the notice-and-comment format is the appropriate rulemaking process for this issue. Indeed, the very purpose of notice-and-comment rulemaking is to give the agency the benefit of the public's views. Just because an IEEE standard is characterized as a national consensus standard does not mean that the public has had an opportunity to express its views. Nor would such an opportunity relieve the NRC from its legal responsibilities under the APA.

In bypassing the normal comment process, the NRC relied upon the lack of adverse comments on proposed Regulatory Guide 1.153, "Criteria for Safety Systems." Licensees are not required to comply with the guidance in a regulatory guide and may do so voluntarily. Thus, the lack of adverse comments on a regulatory guide should not be taken as a reason for dispensing with public involvement in the rulemaking process here.

In lieu of rulemaking, the NRC should consider less burdensome alternatives. One alternative would be to allow licensees the option of complying with either IEEE Std. 279 or IEEE Std. 603 on a voluntary basis. However, if the NRC wishes to adopt IEEE Std. 603-1991 as a binding requirement, it must go through the ordinary notice-and-comment rulemaking process, including a backfitting analysis, to determine if the imposition of IEEE Std. 603-1991 is justified. The NRC should resolve the public comments received on this rulemaking before making the direct final rule effective. If necessary, the NRC should allow for a second comment period to ensure that all comments are adequately resolved.

Very truly yours,



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January 16, 1998

Mr. John C. Hoyle, Acting Secretary
Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: **Codes and Standards: IEEE National Consensus Standard (62 Fed. Reg. 53, 932 (October 17, 1997))**

Dear Mr. Hoyle:

On December 1, 1997, we submitted comments in the captioned rulemaking proceeding on behalf of the Nuclear Utility Backfitting and Reform Group (NUBARG). Several members of NUBARG own and operate plants having construction permits issued prior to January 1, 1971. This letter is being submitted on behalf of NUBARG as supplemental comments to confirm what we believe to be the NRC's position in the proposed rule, i.e., that nuclear power plants with construction permits issued prior to January 1, 1971, would not be required to comply with the provisions of IEEE Standards 279 and 603-1991 for future modifications.[1/]

While we believe that the proposed rulemaking never intended to add additional requirements for plants whose construction permits were issued prior to January 1, 1971, the rulemaking (62 Fed. Reg. 53,932, October 17, 1997) to incorporate by reference IEEE Std. 603-1991 eliminated the explicit provision in 10 C.F.R. § 50.55a(h) regarding nuclear plants with construction permits issued prior to January 1, 1971. The current version of 10 C.F.R. § 50.55a(h) explicitly excludes such plants from complying with the requirements of IEEE-279, "Criteria for Protection Systems for Nuclear Power Generating Stations." In that respect, we understand that comments made by the NRC representative at the November 1997 IEEE Nuclear Power Engineering Committee Meeting in Albuquerque, New Mexico, indicated that the NRC would encourage, but not require, such older plants to comply with IEEE Std. 603-1991 for future major (system-level) modifications.

[1/] In view of the withdrawal of the direct final rule (62 Fed. Reg. 66,977, December 23, 1997), it should be practicable for the NRC to consider these brief comments as part of its ongoing review of the proposed rule.

The statement of considerations accompanying the final rule should clearly state that the new 10 C.F.R. § 50.55a(h)(3) applies only to plants with construction permits issued after January 1, 1971 and clarify that the second sentence of proposed § 50.55a(h)(3) applies to plants covered by the first sentence of that subsection.

Very truly yours,

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DANIEL F. STENGER
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May 26, 1998

Mr. John C. Hoyle
Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Re: Comments on "Industry Codes and Standards: IEEE National Consensus Standard," 63 Federal Register 20,136 (April 23, 1998)

Dear Mr. Hoyle:

The following comments are submitted on behalf of the Nuclear Utility Backfitting and Reform Group (NUBARG)[1/] on the above-captioned rulemaking. The proposed rule would require licensees to comply with IEEE Std. 603-1991, "Criteria for Safety Systems for Nuclear Power Generating Stations," for "system-level" replacements of existing plant protection systems and for additions of new safety systems in lieu of IEEE Std. 279, "Criteria for Protection Systems for Nuclear Power Generating Stations," which is currently part of the licensing basis for most plants. The proposed rule would appear to constitute a backfit under 10 C.F.R. § 50.109 for the reasons discussed below, and therefore a backfitting analysis should be performed prior to the rule becoming effective.

The NRC has made certain changes in the proposed rule from the previous direct final rule, which was later withdrawn. For example, the NRC would limit application of IEEE Std. 603-1991 to future "system-level" replacements and to additions of new safety systems. Nevertheless, the proposed rule, if implemented, would have a potentially significant impact on many licensees. NUBARG members have identified numerous concerns regarding implementation of the proposed rule, including:

- ambiguity in the definitions of "system-level" replacement and "addition of a new safety system" which leads to a potentially broad scope of the rule;
- the creation of a dual-licensing basis for plant protection systems which will complicate configuration management, especially where interface is required with existing systems;

1/ NUBARG is a consortium of sixteen utilities which was formed in the early 1980's and actively participated in the development of the NRC's backfitting rule in 1985. NUBARG has subsequently monitored the NRC's implementation of the backfitting rule.

- the potential for complicating licensee evaluations under Section 50.59 supporting facility changes to systems and procedures subject to different licensing bases;
- the likelihood that many licensees will need to file exemption requests from the rule as existing plant configurations may not fully accommodate compliance with the new standard; and,
- anticipation of rule interpretation disputes in the context of enforcement and inspection.

The principal reason given by the NRC for not performing a backfitting analysis is that the rule does not impose a backfit because any modifications of the protection system that would need to comply with IEEE Std. 603-1991 would be "voluntarily initiated by the licensee . . . ." 63 Fed. Reg. at 20,138. However, most changes to an existing system cannot be characterized as "voluntary." Changes made on account of equipment obsolescence, planned maintenance, scheduled replacement, or those changes made necessary by revisions to current regulations would not be "voluntary." Nevertheless, under the proposed rule, any such system-level replacements or new safety systems would apparently need to comply with IEEE Std. 603-1991. Thus, for such changes, imposition of IEEE Std. 603-1991 clearly constitutes a backfit.[2/]

An additional rationale provided by the NRC for not performing a backfitting analysis is that the rule "would not change the licensing basis for plants that do not intend to make changes to their power and instrumentation and control systems." Contrary to the NRC's conclusion, implementation of the proposed rule *would* change plants' existing licensing bases applicable to protection systems. 10 C.F.R. § 50.55a(h) currently requires licensees with construction permits issued after January 1, 1971 to comply with the revision of IEEE Std. 279 in effect on the date of the application for a construction permit. Although IEEE Std. 279 has now been withdrawn by the standards body, it remains the licensing basis for most plants. The proposed revision to 10 C.F.R. § 50.55a(h) would require that "system-level" replacements of existing power, instrumentation, and control portions of protection systems initiated on or after January 1, 1999, comply with the additional requirements of IEEE Std. 603-1991. IEEE Std. 603-1991 also requires adherence to additional IEEE standards referenced therein. However, the IEEE standards referenced in IEEE Std. 603-1991, and the related revisions, are not necessarily the standards to which licensees are committed. Incorporating the additional requirements of IEEE Std. 603-1991 as a binding regulation

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2/ A licensee's need at some point to replace an entire protection system is not the type of voluntary action the NRC's guidance contemplates as being excluded from the requirement for a backfitting analysis. An example of "voluntary" licensee action for purposes of the backfitting rule is a license amendment request. Statement of Considerations accompanying the issuance of the final rule, 50 Fed. Reg. 38,097, 38,101 (Sept. 20,1985) (noting that the backfitting rule does not require the NRC to prepare a backfitting analysis as a condition precedent to a license amendment if the licensee requested the amendment).

would thus impose a change to the current licensing basis of many plants, and for that reason, would constitute a backfit.

The rule would also necessitate resource-intensive changes to current plant procedures and licensing basis documents, and for that reason as well would constitute a backfit as defined in Section 50.109(a)(1). Due to the broader scope of IEEE Std. 603-1991 in comparison with IEEE Std. 279, licensees would be required to make changes to current procedures that administratively control the power source and instrumentation and control functions of protection systems.

The NRC takes the position that its decision to forego a backfitting analysis is consistent with past NRC practice and the backfitting discussions contained in the Value-Impact Statement prepared for Revision 1 to Regulatory Guide 1.153, "Criteria for Safety Systems." 63 Fed. Reg. 20,138. However, the discussion contained in the referenced Value-Impact Statement merely states that "the incremental cost is negligible if . . . a current licensee voluntarily chooses to follow the guidance provided in IEEE Std. 603-1991 as opposed to [IEEE Std. 603-1980]." The Regulatory Guide Value/Impact analysis thus provides no support for the NRC's decision not to perform a backfitting analysis before implementing the proposed new requirement.

Separate and apart from the regulatory duty to perform a backfitting analysis, the NRC has an obligation under the Administrative Procedure Act to articulate an adequate technical or safety basis for the proposed rule.[3/] The NRC does not provide any technical or safety basis to justify why it believes the proposed rule is needed.[4/] The NRC simply states that IEEE Std. 279-1971 has been withdrawn and superseded by IEEE Std. 603-1991.[5/] However, IEEE Std. 279-1971 remains the licensing basis for most plants, and the NRC does not offer any technical or safety data to support the conclusion that IEEE Std. 279 has become obsolete or is otherwise inadequate as a standard. In fact, based on the NRC's proposal to continue to apply IEEE Std. 279 to modifications or changes to components and subsystems, the NRC implicitly affirms that IEEE Std. 279 is not obsolete.

For the reasons stated above, we respectfully request that the proposed rule be withdrawn. However, if the NRC wishes to adopt IEEE Std. 603-1991 as a binding requirement for

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3/ *See Connecticut Light & Power Co. v. Nuclear Regulatory Comm'n*, 673 F.2d 525 (D.C. Cir. 1982).

4/ Indeed, the NRC states that the rule will have minimal impact, which suggests it will be of questionable benefit, much less *necessitated* by technical or safety concerns.

5/ In fact, IEEE Std. 279 has been revised and "superseded" several times in the past and the NRC has updated Regulatory Guide 1.153 accordingly. The NRC did not explain or even hint that there is something different about the most recent IEEE standard that it should be made a regulatory requirement rather than endorsed for use in Regulatory Guide 1.153.

licensees, a backfitting analysis should be performed in accordance with Section 50.109 to determine if the imposition of IEEE Std. 603-1991 is justified. Alternatively, Section 50.55a(h) could be revised to allow licensees the option of voluntarily complying with either IEEE Std. 279 or IEEE Std. 603-1991. In lieu of rulemaking, the NRC should also consider less burdensome alternatives. Specifically, the NRC could encourage licensees to use IEEE Std. 603-1991, as endorsed in Regulatory Guide 1.153, voluntarily for future changes.

Very truly yours,

Daniel F. Stenger
Garth D. Richmond
Counsel to the Nuclear Utility Backfitting
and Reform Group