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NUCLEAR ENERGY INSTITUTE

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June 19, 1997

Mr. David L. Meyer, Chief  
Rules Review and Directives Branch  
U.S. Nuclear Regulatory Commission  
Mail Stop T-6D-69  
Washington, DC 20555-0001

**SUBJECT:** Proposed Generic Communication: Control Rod Insertion Problems  
(62 Fed. Reg. 27629 - May 20, 1997)

Dear Mr. Meyer:

The following comments are submitted on behalf of the nuclear power industry by the Nuclear Energy Institute (NEI).<sup>1</sup> These comments are in response to the May 20, 1997, *Federal Register* notice on the NRC's proposed bulletin supplement on potential control rod insertion problems.

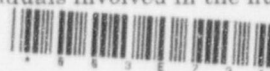
The proposed bulletin supplement identifies several actions the NRC expects licensees to undertake as a follow-on to NRC Bulletin 96-01, "Control Rod Insertion Problems." Bulletin 96-01 requested that licensees conduct tests to collect data on control rod insertion times. The proposed bulletin supplement states that the requested actions are necessary to "assure that adequate shutdown margin is maintained and that the control rods will satisfactorily perform their intended function . . ."

While licensees unquestionably should assure that adequate shutdown margin is maintained, the industry is concerned about the lack of a sufficient technical basis for the specific actions the NRC proposes. As explained below, the industry believes that the supplement itself might challenge safe plant operation. More careful NRC evaluation is required of the ramifications of the proposed bulletin supplement. The industry also is concerned with the proposed use of a generic communication to impose new and burdensome requirements on licensees, the failure to satisfy the requirements of NRC practice and procedure (including justifying the action under 10 C.F.R. 50.109, the "backfit rule," and conducting a Regulatory Analysis) and the failure to meet the requirements of the Small Business Regulatory Enforcement Fairness Act. We discuss each of these concerns below.

<sup>1</sup>NEI is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry, including regulatory aspects of generic operational and technical issues. NEI members include all utilities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabrication facilities, materials licensees, and other organizations and individuals involved in the nuclear energy industry.

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**A. The Bulletin Supplement Itself Might Challenge Safe Plant Operation**

The proposed bulletin supplement would require tests to be conducted when plants reach certain MWD/MTU limit levels. To perform the test, the plants must be in a shutdown state. The potential frequency of such shutdowns (every eight to eleven weeks after reaching the limits) brings into serious question both the operational and safety impact of the proposed tests. The shutdowns necessary to perform rod drop testing will increase the potential for inadvertent plant transients and will place added stresses on fuel and mechanical equipment. The increased potential for transients will result in an increase in the overall plant risk. NRC should evaluate specifically whether the proposed testing requirements might result in an unreviewed safety question as defined in 10 C.F.R. 50.59 in some, if not all, of the affected plants. As an alternative to testing, a licensee may choose to reoptimize the core design. However, this action can reduce the margin of safety in other parameters, such as peaking factors.

A full evaluation of the safety impact of the proposed testing and the alternative of redesigned cores should be performed prior to issuing the supplement. This will assure that the proposed testing will not inadvertently decrease the margin of safety. Obviously, it would be inappropriate to impose a solution to a potential safety problem that creates a greater challenge to plant safety than the one the solution was designed to address.

**B. The Proposed Requirements Have Not Been Justified Under  
10 C.F.R. 50.109**

The industry disagrees with the NRC's backfit analysis and the resulting conclusion that the proposed actions qualify as a "compliance" exception under 10 C.F.R. 50.109(a)(4)(i). While the proposed bulletin may appear, on first reading, to be a 10 C.F.R. 50.54(f) information request, it must be concluded, on careful consideration of the consequences of the requested action, that the bulletin is actually a proposed backfit subject to 10 C.F.R. 50.109. This is because § 50.54(f) applies only to pure information requests. The proposed bulletin, on the other hand, will result in physical effects on the affected plants and create a potential safety problem. Thus, the more lenient licensing basis compliance exception in § 50.54(f) does not apply. Rather, the strict compliance exception in § 50.109 applies. This means that a legally enforceable requirement or commitment must be identified and a demonstration must be made that this requirement or commitment is being violated for the class of plants affected by the backfit. Mere concern about a possible non-compliance is insufficient to support its imposition, since the compliance exception is applicable only where action is needed "to bring a facility into compliance." That presumes a demonstrated non-compliance before the requested action is taken.

The proposed supplemental bulletin states that "[w]hile the tests performed in response to Bulletin 96-01 did not reveal any additional incomplete control rod insertions and all rod drop times measured met the Technical Specification limits

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for drop times to top of the dashpot, there were other disturbing results." The cited "disturbing results" were the measurement of dashpot drag above Westinghouse "F spec" criteria in several plants. The "F spec" criteria are used by field personnel to aid in the final installation of the reactor vessel head and are not NRC requirements.

The NRC has sought to justify the proposed new testing requirements on the basis of compliance with a licensee's generally applicable Quality Assurance program requirements. Currently there is no requirement under Appendix B, Section XI, nor any other regulation, to perform the tests required under the supplemental bulletin. Basing specific testing requirements on the language of Appendix B provisions would permit the imposition of virtually any new requirement through this informal process. The effect of such actions would be to nullify the backfit rule entirely. Thus, a full backfit analysis must be provided before such a new requirement may be imposed.

In performing a backfit analysis under 10 C.F.R. 50.109(a)(4), the NRC must consider whether the proposed requirements provide a substantial increase in overall protection. Also, the direct and indirect costs of implementation must be justified in view of the increased protection. The need to focus on "overall protection" is especially important here because the actions requested might themselves create challenges to safe plant operation.

New requirements may not be imposed unless both prongs of the backfit test are satisfied. The licensee actions proposed in the bulletin supplement do not meet the requirements of the backfit rule.

As is stated in the bulletin supplement, "the safety significance depends on the amount of shutdown margin lost because of incomplete control rod insertion." With one exception, in all cited cases of incomplete control rod insertion the problems have been limited to the dashpot region. The one instance where this did not occur was unique because a different control rod material was used and testing was performed under conditions not representative of operating conditions. There have been no events using, or test results which evaluated, current control rod designs where the postulated incomplete insertion "high in the core" has occurred. Given this, and given the safety concerns described in Section A. above, there is no basis upon which to conclude that there is substantial increase in overall safety, as is required to satisfy 10 C.F.R. 50.109.

The second prong of the backfit test, justification of the direct and indirect costs of implementation in view of the increased protection, also has not been satisfied here. The proposed rod drop testing will affect over 50 plants and will necessitate a plant shutdown to perform each set of tests. This will result in a loss of one to three effective full power days per test. Estimates of the number of tests that would have to be performed for each cycle vary, but are expected to average four per year per plant. This number of outages potentially raises grid stability concerns during periods of peak demand. Replacement power costs are in the range of \$200,000 to



\$750,000 per effective full power day. The combined yearly impact of the proposed testing, based upon replacement power costs alone, could easily exceed \$120,000,000 per year.

### **C. Generic Communications Should Not Be Used to Impose Requirements on Licensees**

The proposed supplement to Bulletin 96-01 has been published to alert licensees to the issues related to incomplete control rod insertion, to request that all licensees of Westinghouse- and Babcock and Wilcox-designed plants take certain actions to ensure control rod operability, and to require that all such licensees provide a written response to the supplement identifying requested information and actions to comply with the supplement.

The NRC has requested that licensees perform tests to verify the full insertability and drop times of fuel rods in assemblies with burnups above certain specified limits. These tests are to be conducted upon reaching the limits and then every 2,500 megawatt-days/metric ton uranium (MWD/MTU) until the end of the cycle, estimated to be approximately once every eight to eleven weeks after reaching the burnup limits set out in the proposed bulletin supplement. The NRC's tests would necessitate shutting the plant down for approximately one to three days. As an alternative, licensees would be permitted to demonstrate continued operability of their individual fuel designs by providing for NRC review a "rigorous engineering analysis."

The industry is concerned about the NRC's use of generic communications to, in effect, mandate specific licensee actions. While a bulletin may be appropriately issued to obtain information quickly, the NRC has not, in this case, chosen the proper legal mechanism to impose requirements on licensees.

Generic communications are not intended to substitute for other, more measured means of imposing new requirements or to modify currently existing license conditions. The inappropriateness of using a generic communication to impose the instant requirements is not affected by the NRC's issuance of this bulletin supplement pursuant to 10 C.F.R. 50.54(f). That regulation may be used to obtain information to allow the NRC to determine whether additional regulatory action is needed and/or additional requirements should be imposed.

At bottom, neither 10 C.F.R. 50.54(f) nor any generic communication should be used to substitute for following administrative procedures attendant to the rulemaking process. It is well established that the NRC legally is bound to meet all Administrative Procedure Act requirements<sup>2</sup> when imposing requirements on licensees. The use of a generic communication to require licensees to the take

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<sup>2</sup> As is discussed in the following section, the NRC must not only comply with the Administrative Procedures Act, but also is bound to perform a rigorous analysis to justify additional requirements under the backfit rule, 10 C.F.R. 50.109.

additional and burdensome action proposed here does not meet even a liberal interpretation of that standard.

#### **D. The Proposed Requirements Must Be Reviewed Under the Small Business Regulatory Enforcement Fairness Act**

The Small Business Regulatory Enforcement Fairness Act of 1996 ("SBREFA") was intended to allow Congress to review new administrative rules and regulations, including that which is the whole or part of a final statement of general applicability and future effect, designed to implement, interpret or prescribe law or policy.<sup>3</sup> Federal agencies are now required to submit to Congress for review all new regulatory initiatives, including those qualifying as a "major rule" — one that the Office of Management and Budget determines is likely to result in an annual effect on the economy of \$100,000,000 or more.<sup>4</sup> The agency's submission is required to include a cost-benefit analysis for the proposed regulatory initiative.

In light of the very substantial cost impact of the tests required under the proposed bulletin supplement, estimated to be at least \$120,000,000 industry-wide, the NRC must follow the procedural steps set out under SBREFA. The NRC's imposition of test requirements through a bulletin supplement, rather than a rulemaking, does not affect the need to comply with SBREFA because, in this case, the bulletin would fall within SBREFA's definition of a "rule."

#### **E. Conclusion**

It is important for licensees to continue to monitor control rod insertions and for the industry to continue to undertake actions to more fully understand the technical bases underlying any potential problems associated with this issue. However, as was noted above, the scope and level of testing proposed in the bulletin supplement are not supported by the instances of incomplete control rod insertions and the overall data obtained through the tests performed in response to Bulletin 96-01.

Further, greater consideration should to be given to the operational and safety impacts of the proposed testing to avoid an inadvertent decrease in the margin of plant safety. It is also incumbent on the NRC to comply with all procedural requirements prior to the imposition of a regulatory action — and particularly one

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<sup>3</sup> 5 U.S.C. 551(4) (1996)

<sup>4</sup> We note that the NRC's own policy, as discussed in the NRC Regulatory Analysis Guidelines (NUREG/BR-0058, Rev. 2) calls for a regulatory analysis for a range of regulatory actions, including those sought through the issuance of bulletin. The purpose of NUREG/BR-0058, which preceded the enactment of SBREFA and was based on Executive Order 12866 (issued in 1993), was nevertheless intended to require federal agencies to justify certain costly requirements when balanced against the stated benefits of the proposed actions prior to imposing the requirements on the affected regulated industry. In the case of the instant bulletin supplement, the NRC has not complied with its own practice, and must do so before taking further action here.

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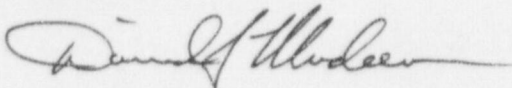
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of this magnitude. These safeguards are critical to ensuring that the impact of the regulatory action on licensees is commensurate with the safety benefit.

The NRC has had a number of meetings with affected fuel vendors and owners groups on control rod insertion issues. The industry has also provided a number of technical submittals to the NRC addressing these and related issues. The NRC staff review of these submittals is underway and additional meetings are planned. We urge a continuing dialogue on this subject and encourage the NRC to continue to review industry submittals until a significantly more complete picture has been obtained. At that point, a more technically informed decision can be made with respect to the need for the proposed regulatory action. In the interim, the proposed bulletin supplement should not be issued.

We appreciate the opportunity to comment on this proposed bulletin supplement. Please direct any questions on our comments to John Butler at (202) 739-8108.

Sincerely,



David J. Modeen

JCB/rs

c: Mr. Stewart L. Magruder, NRC  
Ms. Margaret Chatterton, NRC  
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