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Cindy Bladey  
Office of Administration, Mail Stop OWFN-12-H08  
US Nuclear Regulatory Commission  
Washington, DC 20555-0001

Comments on Draft RIS Related to Clarification of 10 CFR 50.46 Reporting Requirements (Docket ID NRC-2015-0172)

Dear Ms. Bladey:

Southern Nuclear Operating Company (SNC) hereby submits comments for consideration by the U.S. Nuclear Regulatory Commission (NRC) staff. Specifically, SNC is providing comments on a proposed regulatory issue summary (RIS) as noticed in the Federal Register (*Federal Register* Vol. 80, No. 142, 44160, dated July 24, 2015; Docket ID NRC-2015-0172). The Draft RIS is entitled "Clarification of 10 CFR 50.46 Reporting Requirements and Recent Issues with Related Guidance Not Approved for Use by the NRC." Accordingly, you will find enclosed comments from SNC.

SNC has worked closely with the Electric Power Research Institute and the Nuclear Energy Institute (NEI) in reviewing the proposed RIS. SNC is aware that NEI will submit consolidated industry comments by separate correspondence and supports that effort.

As a general comment, SNC does not believe that an RIS is necessary to resolve the issues related to 10 CFR 50.46 requirements. SNC recommends that the draft RIS be withdrawn. Instead, the NRC is encouraged to engage in discussions with the industry with the goal of establishing uniform guidance on the issues discussed in the draft RIS. As an example, there has been extensive engagement between the NRC and the industry during the 10 CFR 50.46c rulemaking. This communication has been effective, with the benefit of enhancing the health and safety of the public.

Specific SNC comments on the draft RIS are included in the Enclosure to this letter. If you have any questions or comments, please contact Doug McKinney at (205) 992-5982.

SUNSI Review Complete  
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E-RIDS = ADM-03  
Add = A. Popova (AXP16)

Respectfully submitted,



C. R. Pierce  
Regulatory Affairs Director

*CRP/DN/cbg*

Enclosure: SNC Comments on Docket ID NRC-2015-0172 (80 FR 44160, Dated July 24, 2015)

cc: Southern Nuclear Operating Company  
Mr. S. E. Kuczynski, Chairman, President & CEO  
Mr. D. G. Bost, Executive Vice President & Chief Nuclear Officer  
Mr. M. D. Meier, Vice President – Regulatory Affairs  
Mr. B. J. Adams, Vice President – Engineering  
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Enclosure 1 to NL-15-1701

SNC Comments on Docket ID NRC-2015-0172

**Comments on Draft Regulatory Issue Summary 2015-##  
“Clarification of 10 CFR 50.46 Reporting Requirements and Recent Issues with  
Related Guidance not approved for use by the NRC”  
(Docket ID NRC-2015-0172)**

By Southern Nuclear

The following discussion highlights continued differences of opinion in what constitutes an acceptable evaluation model for the purposes of evaluating emergency core cooling system (ECCS) performance. The discussion includes: 1) general comments describing some of the history of differing opinions between the industry and the NRC, 2) comments on the three specific issues with NEI 07-05, “10 CFR 50.46 reporting Guidelines,” identified in the draft Regulatory Issue Summary (RIS), and 3) a recommendation encouraging the NRC to withdraw the draft RIS and engage in discussions with the industry with the goal of establishing uniform guidance on the issues identified in the draft RIS.

**GENERAL COMMENTS ON ISSUES IDENTIFIED IN THE DRAFT RIS**

Regulation 10 CFR 50.46 has two primary functions: 1) to provide reporting requirements in paragraph (a)(3) and 2) to provide acceptance criteria in paragraph (b).

10 CFR 50.46 is not a change control rule. 10 CFR 50.59 provides criteria for making changes to methods of evaluation and when NRC approval is required. In comparison, 10 CFR 50.46 does not provide such criteria.

In the guidance for the implementation of 10 CFR 50.59 in Revision 1 of NEI 96-07, “Guidelines for 10 CFR 50.59 Implementation,” as endorsed by Regulatory Guide 1.187, “Guidance for Implementation of 10 CFR 50.59, Changes, tests, and Experiments,” there is a clear distinction between an input parameter and an element of the method of evaluation. 10 CFR 50.46 does not provide such a distinction.

10 CFR 50.46 uses the term “Acceptable Evaluation Model” several times. The rule provides no clear definition of the process for acceptance of an Evaluation Model or acceptance of changes to an Evaluation Model. The only reference to a process may be in paragraph (a)(2), which refers to “... evaluations of ECCS cooling performance **submitted** [emphasis added] ....”

While not formally defined in 10 CFR 50.2, “Definitions”, paragraph (c)(2) of 10 CFR 50.46 describes or “defines” an Evaluation Model as being the “calculational framework” and the “calculation procedure.” This description implies that the Evaluation Model is a process. Paragraph (c)(2) uses the expression “... procedure for treating input and output information ....” Again, this describes a process, not values of plant-specific inputs or input parameters.

Paragraph (c)(2) also uses the expression “values of parameters” as being part of the Evaluation Model. This expression has been a source of confusion. It is not clear from the definition of an Evaluation Model in paragraph (c)(2) what is meant by a “parameter.” Mathematically, a parameter is a quantity that influences the behavior of a mathematical function. An example would be the coefficients in the Baker-Just equation for calculating the metal-water reaction rate as described in 10 CFR 50, Appendix K. In this case, the

Enclosure 1 to NL-15-1701  
SNC Comments on Docket ID NRC-2015-0172

parameters (coefficients) would be considered part of the Evaluation Model. This is analogous to an element of a method of evaluation in 10 CFR 50.59 as opposed to an input or input parameter.

The concept of an "Acceptable Evaluation Model" is not clear. Acceptance of models (or methods of evaluation as referred to in 10 CFR 50.59) is typically through the issuance of a Safety Evaluation Report (SER) by the NRC whereby the NRC approves the method for an intended application as in 10 CFR 50.59(a)(2)(ii). Such methods are typically submitted as topical reports by vendors to the NRC for review and acceptance/approval. In the topical reports, as well as in the review and acceptance process, plant-specific inputs or parameters are not typically included. Therefore, plant-specific inputs or parameters cannot be considered part of the Evaluation Model.

In the proposed rulemaking (64 FR 53270, October 1, 1999) related to the revision of Appendix K of 10 CFR 50, the Nuclear Energy Institute (NEI) submitted comments on the proposed rulemaking in a letter dated December 15, 1999 (ML003671779). NEI Comment 8 addressed the following statement in the Section-by-Section Analysis of the proposed change: "Estimated changes in ECCS performance due to revised analysis inputs are reported under Sec. 50.46 (a)(3), at least annually."

NEI sought to clarify the applicability of the reporting requirements in paragraph (a)(3). In particular, NEI argued that paragraph (a)(3) does not apply to changes in the peak clad temperature resulting from plant-specific analysis input parameter values. NEI proposed revised rule language to clarify this.

In the publication of the final rule, the NRC disagreed with the NEI proposal and took the position that "... the ECCS evaluation model is comprised of the computer code or codes, the input parameters (including plant-specific design parameters), and the calculational results." (65 FR 34918, June 1, 2000).

This position further indicates continued disagreement on what constitutes an Acceptable Evaluation Model. As discussed previously, the definition in paragraph (c)(2) does not include plant-specific information. Further, contrary to the statement above from 65 FR 34918, the definition in paragraph (c)(2) does not include calculational results.

## **SPECIFIC COMMENTS ON ISSUES IDENTIFIED REGARDING NEI 07-05**

The NRC staff identified three specific issues with NEI 07-05. Comments specific to these issues are provided below.

### **A. The Definition of "Application" (Draft RIS pages 4 and 5 of 9)**

The lack of a definition of "application" in 10 CFR 50.46 is a source of confusion. In the draft RIS, the NRC disagrees with the definition of "application" in Section 2.2.2 of NEI 07-05. The NRC states that the NEI definition is "inappropriately limiting." The NRC states: "In contrast to the NEI 07-05 definition, the NRC staff has consistently applied a broader, plain-language definition, considering 'application of an evaluation model' to mean the act of putting an evaluation model to use." This is contrary to the position taken by the staff in their response to a commenter in the 1988 ECCS Rule Statements of Consideration (53 FR 35996, September 16, 1988).

Specifically, the commenter's interpretation of the words "or in the application of such a model" was a broader interpretation. In response, the NRC stated: "The regulatory language referred to is intended to ensure that applications of models to areas not contemplated during initial review of the model do not result in errors by extending a model beyond the range that it was intended." This statement limits the meaning of the word "application". This is the basis for the definition in NEI 07-05 and is consistent with the 1988 ECCS Rule Statements of Consideration (53 FR 35996, September 16, 1988).

The draft RIS states: "The intent of the statement was not to provide a definition of the word 'application' ...." In the absence of further guidance, licensees have no other recourse but to treat this statement as at least an interpretation or position, if not a definition. Further, in the NRC statement above regarding a "plain-language definition," such a definition does not appear in the regulation or other regulatory guidance document.

The definition of "application" in NEI 07-05 is consistent with the interpretation or position in 1988 ECCS Rule Statements of Consideration (53 FR 35996, September 16, 1988).

### **B. The Definition of "Input Information" (Draft RIS pages 5 through 7 of 9)**

Input or input parameters have been discussed extensively in the General Comments section and will not be debated further here. However, some additional comments are provided.

The terms "input," "parameter," "input parameter," "input information," "design input," and "model input," have been used in Federal Register Notices, Regulation, and industry guidance. These terms seem to be used interchangeably. Regardless of the term used, if the value of such a quantity is part of the Evaluation Model submitted to the NRC for review and acceptance, and formed the basis for acceptance and documented as a condition for the use of the Evaluation Model in an SER, it would be considered part of the Evaluation Model. However, if the value of such a quantity does not meet this criterion and is plant-specific, it would not be considered part of the Evaluation Model.

The definition of "input information" in NEI 07-05 provides a clear distinction between quantities that are and are not part of the Evaluation Model and therefore, are or are not subject to the reporting requirements of paragraph (a)(3) of 10 CFR 50.46.

C. The Interpretation of the Relationship Between 10 CFR 50.46 and 10 CFR 50.59  
(Draft RIS pages 7 and 8 of 9)

Comparison of attributes of 10 CFR 50.46 and 10 CFR 50.59 has been discussed extensively in the General Comments section and will not be debated further here. However, some additional comments are provided.

As discussed previously, the issues regarding the relationship between the two rules go back to the debate over what constitutes an "acceptable evaluation model" and the treatment of plant-specific inputs or parameters. Universal agreement on these is necessary to clarify the relationship between the two rules.

**SUMMARY and RECOMMENDATIONS**

The issues identified in the draft RIS are not unique to NEI 07-05. The issues have existed for many years and have been the subject of debate both with respect to the current 10 CFR 50.46 rule as well as the proposed 10 CFR 50.46c rule. It is noted that the proposed 10 CFR 50.46c rule is not the subject of the draft RIS.

The issues are centered on the lack of a clear definition of what constitutes an "acceptable evaluation model."

The industry has attempted on multiple occasions to engage the NRC in discussion on industry-developed reporting guidance for NRC endorsement. Two such guidance documents are WCAP-13451, "Westinghouse Methodology for Implementation of 10 CFR 50.46 reporting," (October 1992) and NEI 07-05 (July 2008). While discussions with the NRC had taken place during the development of these documents, the NRC chose not to endorse either of these documents.

In light of the issues and remaining ambiguities, it is recommended that the draft RIS be withdrawn. Instead, the NRC is encouraged to engage in discussions with the industry with the goal to establish uniform guidance on the issues discussed above. As an example, there has been extensive engagement between the NRC and the industry during the 10 CFR 50.46c rulemaking. This communication has been effective, with the benefit of enhancing the health and safety of the public.