Westinghouse

Westinghouse Electric Company
Nuclear Services
P.O. Box 355
Pittsburgh, Pennsylvania 15230-0355
USA

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68FR4524

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U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555-0001

Direct tel: (412) 374-5282
Direct fax: (412) 374-4011
e-mail. Sepp1ha@westinghouse.com

NRC Requesting Letter: FR Doc. 03-2039
Our ref LTR-NRC-03-10

Date: April 2, 2003

Subject: Comments on Draft Regulatory Guide DG-1120 (Transient and Accident Analysis Methods) and Draft Standard Review Plan, Section 15.0.2 (Review of Transient and Accident Analysis Methods)

The NRC issued Draft Regulatory Guide DG-1120 and Draft Standard Review Plan (SRP) Section 15.0.2 for review and comment. These documents identify a framework for the development and review of evaluation models that may be used to analyze reactor transient and accident behavior. Westinghouse has reviewed the draft guidance and is providing the enclosed comments. The enclosed comments identify the Westinghouse position with respect to the implementation of the draft guidance. These comments are being provided in an attempt to ensure that the final Regulatory Guide and SRP are documents that the industry can effectively implement, without incurring costs that are not commensurate with the safety significance. These comments are consistent with Westinghouse's understanding of the NRC's regulatory process regarding regulatory burden reduction to improve plant safety.

Westinghouse also concurs with the Westinghouse Owners Group comments that were submitted separately by letter WOG-03-167 dated 3/24/03.

If you have any questions regarding these comments, please contact either Hank A. Sepp at (412) 374-5282 (email: sepp1ha@westinghouse.com), or William H. Slagle at (412) 374-2088 (email: slaglewh@westinghouse.com).

Very truly yours,

H. A. Sepp, Manager
Regulatory and Licensing Engineering

Attachment (4 pages)

E-RIDS=ADM-03
Add=T. Clark (TJC4)
J. Staudenmeier (JLS4)

Template=ADM-013

Comments on
Draft Regulatory Guide DG-1120
Transient and Accident Analysis Methods
&
Draft Standard Review Plan Section 15.0.2
Review of Transient and Accident Analysis Methods

The following discussion provides comments on draft Regulatory Guide DG-1120 and draft Standard Review Plan (SRP) Section 15.0.2. This discussion also captures some background information associated with these documents as it relates to the current wording used in these documents.

General Comments

1. Reference 1 was a letter written by Dr. Dana Powers (ACRS) to Commissioner Meserve on "Issues Associated with Industry-Developed Thermal-Hydraulic Codes". This letter was prepared by the ACRS after reviewing draft Regulatory Guide DG-1096, which is the predecessor to DG-1120. In reviewing Reference 1, it can be seen that several of the high level recommendations identified in Reference 1 have been incorporated into DG-1120 and draft SRP 15.0.2. The points raised by Dr. Powers in Reference 1, focus on thermal-hydraulic computer codes used to demonstrate the safety of nuclear power plants. In particular, Reference 1 focuses on LOCA Evaluation Models. However, many of the points noted in Reference 1 have nothing to do with demonstrating "safety" or re-assuring the general public safety, but rather focus on commercial issues. If vendors do not account for many of the points noted by Dr. Powers, then it is not a question of safety or health and the well being of the public, but a commercial impact to the vendor.

2. Based on Reference 1, DG-1096 was revised and re-issued as DG-1120, Reference 2. The corresponding draft Standard Review Plan Section (15.0.2) (Reference 3) has also been updated and also reflects the high level recommendations identified in Reference 1. Both DG-1120 and draft SRP 15.0.2 address the "Evaluation Model" (EM) and describe the EM as a calculational framework for evaluating the behavior of the reactor system during a postulated transient or design basis accident. It is agreed that this is a valid definition of the EM and the corresponding input data associated with both the plant configuration and the assumed plant states at transient initiation have a key impact on results. However, using this aspect to expand the scope of regulatory review of an EM to include other codes that have been previously reviewed by the NRC will result in additional review fees with no safety benefits. This adds

no additional safety margin to the review and will actually discourage future code enhancements. The input data are actual physical data that can be measured even though they may have been calculated by another code (i.e., calculational results validated against real measured data). It is true that the data may have uncertainties associated with them, but the uncertainties are accounted for and included in the analysis. The relevant question is "have the data inputs and associated uncertainties been properly addressed within the EM and are the output results consistent with the expected phenomenological behavior based on the inputs".

3. A second comment, as it relates to DG-1120 and draft SRP 15.0.2, is associated with "Source Code". Recent NRC requests for "Source Code" to conduct reviews does not enhance safety because it would only allow the reviewers to follow through line-by-line of the coding and the code logic to determine if the code is doing what is expected. The more efficient method and cost effective methods to determine if the code is doing what is expected is a benchmark comparison to another code. This is the approach that the National Labs used in reviewing codes for the NRC in the past. This aspect emphasizes the need for the NRC to have their own robust codes that can be used for the benchmark. In following this approach, the two codes should yield similar results if all appropriate phenomenological behaviors are accounted for in the codes. Thus, the NRC could quickly ascertain the acceptability of the code without the need for a line-by-line source code review. One point noted in Reference 1, which has been captured in References 2 and 3, is the need for parameter sensitivity determination and code stability. Again, benchmark comparisons between an NRC code and a code under review would yield any apparent code instabilities and would show parameter sensitivities. It should be noted that these comparisons are done with executable versions of a code and <u>not</u> "Source Code".

4. The last comment is associated with documentation. While it is agreed that the documentation of how the code works, with respect to topical reports, should be all inclusive, straightforward and concise; expending NRC resources to review Code Manuals and User Manuals has little value. The only aspect relative to documentation is that it should capture the boundary requirements for using the code, such that the code is not used beyond it's licensed framework. Thorough code and user manuals is a commercial issue associated with technical transfer of computer codes to end users (i.e., licensees that made purchase codes and conduct their own analyses). In these situations, the NRC has a regulatory vehicle in place to ensure the proper use of codes (Generic Letter 83-11, Supplement 1). Thus, it is inappropriate to add the Code and User Manuals to an NRC review. This is a commercial, training, and Quality Assurance issue, and does not ensure the safety, health and well being of the public.

Specific Comments

1. On Page 3 of DG-1120, Section B (Discussion), Sub-section on Evaluation Model Concept: The extent of a review should be explicitly defined and clarified with respect to an Evaluation Model (EM). The discussion in the section leaves it open for a reviewer to request all "supporting" codes to be provided. This is in excess of what would be needed to conduct a review. Refer to Item 2 under the "General Comment" section. This same comment applies to draft SRP 15.0.2, page 2, Item 2 (Evaluation Model).

2. Section 3.3 of DG-1120 should be revised to address the comments made in Item 2 under the "General Comment" section (i.e., code input that may be calculated by a previously licensed code - that code should not be re-reviewed; however, the input data range of applicability should be ensured that it meets the EM requirements).

3. On Page 2 of draft SRP 15.0.2, Item 1: Items (e) and (f) should be deleted. Refer to Item 4 in the "General Comment" section.

4. On Page 25 of DG-1120, Section 3.0, Items 3 and 4 should be deleted. Refer to Item 4 in the "General Comment" section.

5. On Page 3 of draft SRP 15.0.2, Item E - Theory Manual: this information should reside (or pertinent portions, thereof) in the topical report (i.e., self-contained). A separate Code Manual should not be required for submission. Refer to Item 4 in the "General Comment" section.

6. On Page 4 of draft SRP 15.0.2, Item F - User Manual: pertinent information should reside in the topical report (i.e., self-contained) should be deleted. A separate User Manual should not be required for submission. Refer to Item 4 in the "General Comment" section.

7. On Page 17 of draft SRP 15.0.2, definition of User Manual should be deleted. It should not be required as noted by the "General Comment" in Item 4.

References:

1. Letter from Dana A. Powers (ACRS) to The Honorable Richard A. Meserve (Chairman of NRC Commission), "Issues Associated with Industry-Developed Thermal-Hydraulic Codes," January 11, 2001.

2. Draft Regulatory Guide DG-1120, "Transient and Accident Analysis Methods," December 2002.

3. Draft Standard Review Plan Section 15.0.2, "Review of Transient and Accident Analysis Methods," January 2003.