



Westinghouse
Electric Corporation

Energy Systems

Nuclear and Advanced
Technology Division

Box 355
Pittsburgh, Pennsylvania 15230-0355

NTD-NRC-94-4144
NTD-NSA-SAI-94-235
May 25, 1994

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Attention: Mr. R. C. Jones, Jr., Reactor Systems Branch Chief
Division of Engineering and System Technology

Response to NRC Questions on the Westinghouse UPI Model Improvements
WCAP-10924-P Volume 2 Revision 2 Addendum 3

Dear Mr. Jones:

Attached are the responses to the four NRC questions concerning WCAP-10924-P Volume 2 Revision 2 Addendum 3 (Reference 1), sent to Westinghouse in the July 1, 1993 memo from R. C. Jones (NRC) to N. J. Liparulo (W).

In the course of preparing these responses, it became necessary to investigate intermittent code instabilities that were discovered with the Addendum 3 version of the code. It was deemed inappropriate to provide responses before resolving this issue. Therefore, the generation of these responses took longer than originally anticipated.

After a detailed investigation, it was concluded that more restrictive convergence criteria and time step inputs resolved the instability issues. Further, the studies indicated that the code changes made after the original Addendum 3 submittal triggered the need for tighter limits on the numerical solution. These code changes were reported as Discretionary Changes for the Addendum 4 version in January of 1993 to all plants licensed with the Addendum 4 version of the code as per Section 4 and 5 of WCAP-13451 (Reference 2). A generic penalty was applied to all plants licensed with Addendum 4 prior to the code updates. Therefore, since all plants licensed with UPI WCOBRA/TRAC used the approved Addendum 4 version and have specifically accounted for the generic penalty, the licensing bases for those plants have accounted for the code updates. Note that the cases in the Addendum 3 submittal (Reference 1) did not reflect these code updates. However, in cases that exhibited the instability, the resulting peak cladding temperature was conservatively high. Therefore, the Reference 1 analyses are expected to bound cases with the revised convergence criteria and time step inputs. All of the Addendum 3 WCOBRA/TRAC cases included in the attachment to this letter have used the updated code and the revised convergence criteria and time step inputs.

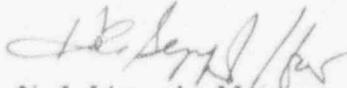
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Please contact Mr. M. E. Nissley (412-374-4303) or Mr. M. Y. Young (412-374-5081) if you have any questions on this subject.

Very truly yours,



N. J. Liparulo, Manager
Nuclear Safety Regulatory and Licensing Activities

JSS/sm

Enclosure(s)

cc: F. Orr, RSB

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References:

1. WCAP-10924-P-A (Proprietary) Volume 2, Revision 2, Addendum 3, "Upper Plenum Injection Model Improvement," L. E. Hochreiter, et. al., April 1991.
2. WCAP-13451-A "Westinghouse Methodology for Implementation of 10 CFR 50.46 Reporting," October 1992.