

June 24, 1996

MEMORANDUM TO: Phillip F. McKee, Director
Project Directorate I-3 (Millstone-2)
Division of Reactor Projects I/II

Eugene V. Imbro, Director
Project Directorate II-1 (Shearon Harris-1, H.B. Robinson-2)
Division of Reactor Projects I/II

John M. Hannon, Director
Project Directorate III-1 (Pallisades)
Division of Reactor Projects III/IV

Frederick J. Heddon, Director
Project Directorate II-3 (St. Lucie-1)
Division of Reactor Projects I/II

Gail H. Marcus, Director
Project Directorate III-3 (Kewaunee)
Division of Reactor Projects III/IV

FROM: Timothy E. Collins, Acting Chief
Reactor Systems Branch
Division of Systems and Analysis

SUBJECT: POTENTIAL VIOLATION OF 10 CFR 50.46

We have recently completed an audit review of changes to the Siemens large break ECCS evaluation model which is used at one or more plants under your purview (Kewaunee, Millstone-2, Pallisades, H.B. Robinson-2, Shearon Harris 1, St. Lucie-1). We have determined that Siemens made significant changes to the code without staff approval and may have incorporated these model changes into plant specific licensing calculations for the noted plants. The net impact of the unapproved model changes for some plants where the Siemens 1991 methodology was used exceeded 50 degrees in the calculation of PCT used in the LOCA analyses. We are concerned that these plants may be operating in violation of 10 CFR 50.46. Specifically, Appendix K requires that, when a significant change is made to the evaluation model (> 50 degrees F PCT impact) the evaluation model must, at the same time be modified to delete the use of the Dougall-Rohsenow film boiling correlation (see Appendix K, I. C. 5. c). The Dougall-Rohsenow correlation was not deleted when the above noted changes were made to the code. In addition, the impact of the changes were not reported to the staff as required by 10 CFR 50.46. We recommend that you send the attached letter to the individual licensees to notify them of the potential violation.

Attachments:
As stated

NRC FILE CENTER COPY

Contact: G. Thomas, SRXB/DSSA, 415-1814

*see previous concurrence page

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|------------|---------------|------------|------------|------------|
| SRXB:DSSA* | SASG:DSSA* | SRXB:DSSA* | SASG:DSSA* | SRXB:DSSA* |
| GTHOMAS | JSTAUDENMEIER | ALEVIN | RCARUSO | COLLINS |
| 6/21/96 | 6/21/96 | 6/24/96 | 6/24/96 | 6/24/96 |

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CF
L-4-1PTSOLIC CF

L-4-1PTSD Licensing of Production...
X IDSR-5 violations 96.45
X RD-8-2 EX ECCS

1/1
DFV2

THIS WAS NEVER SENT TO
LICENSEE. LETTER DATED
OCT 11, 96 FROM B. SHERON
TO PLUNKETT WAS
ATTACHMENT SENT INSTEAD.

George Shuman
2/5/97

The Nuclear Regulatory Commission (NRC) staff approved the Siemens large break ECCS evaluation model on July 8, 1986. The evaluation model approved by the staff included the TOODEE2 code. We have recently completed an audit review of changes to the Siemens large break ECCS evaluation model which is used at----. We have determined that Siemens made significant changes to the code without staff approval and may have incorporated these model changes into plant specific licensing calculations. The net impact of the unapproved model changes for some plants where the Siemens 1991 methodology was used exceeded 50 degrees in the calculation of PCT used in the LOCA analyses. We are concerned that---- plant may be operating in violation of 10 CFR 50.46. Specifically, Appendix K requires that, when a significant change is made to the evaluation model (> 50 degrees F PCT impact) the evaluation model must, at the same time be modified to delete the use of the Dougall-Rohsenow film boiling correlation (see Appendix K, I. C. 5. c). The Dougall-Rohsenow correlation was not replaced when the aforementioned model changes were made. Therefore, the model does not meet the requirement of Appendix K. In addition the impact of the changes were not reported to the staff as required by 10 CFR 50.46.

Since ----- uses the Siemens ECCS evaluation model for the LOCA analyses, we request that you ascertain whether -----used the unapproved 1991 version of the model. A plant for which the unapproved methodology was used may be in violation of 10 CFR 50.46. If the unapproved version of the model was used, we request that you evaluate the net impact of the code changes in the calculation of PCT. 10 CFR 50.46 requires that the licensee estimate the effect of any change in a acceptable evaluation model to determine if the change is significant. 10 CFR 50.46 also states that a significant change is one which results in a calculated PCT different by more than 50 degrees F from the temperature calculated for the limiting transient using the last acceptable model. 10 CFR 50.46 also states that if the change is significant, the licensee shall provide the report within 30 days and include with the report a proposed schedule for providing a reanalysis or taking other action as may be needed to show compliance with 10 CFR 50.46. The staff expects that ----- will promptly report back to the staff if the change in calculated PCT is greater than 50 degrees F.

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