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Mr. Chu-Yu Liang
Reactor Systems Branch
Division of Engineering and System Technology
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C.   20555

Subject: Completion of Work Requirements for Task III of FIN #D1350

References: 1.   "RETRAN Code: Transient Analysis Model Qualification,"
                     FPL Report NIH-G-6, July 1985
                2.   FPL's Response to Request for Additional Information, L-
                     87-164, April 10, 1987.
                3.   FPL Letter L-87-91 from C.O. Woody (FPL) to NRC, March
                     2, 1987

Dear Mr. Liang:

    Enclosed is the Technical Evaluation Report (TER) in respect of our
review of the Florida Power and Light (FPL) topical report entitled "RETRAN
Code: Transient Analysis Model Qualification", dated July 1985 [1] and FPL's
response, L-87-164, to our request for additional information dated April
10, 1987 [2], and represents completion of work for Task III of FIN #D1350.

    After a series of discussions between the applicant and the NRC, FPL
modified the stated objective of its submittal to be the demonstration of
FPL's technical competence to perform transient systems analysis with the
RETRAN computer code for their Turkey Point Units 3 and 4 (3-loop
Westinghouse plants) and St. Lucie Units 1 and 2 (Combustion Engineering
plants) [3]. FPL expressly elected not to seek "approval for any [specific]
combination of input and RETRAN version for a specific application", and not
to seek approval of licensing methodology [3].

    Our standard for making a determination regarding demonstration of

technical competence was that the submittal contain (i) a discussion, explanation and justification for the plant nodalization, control system modeling and internal code model selection, (ii) at least one thorough analysis of a complicated transient, in which the analysts indicate their understanding of both the plant behavior and the code computation by explanation of the behavior of various plant parameters by inter-comparison during the transient and inclusion of parametric studies to identify uncertainties and/or explain anomalous behavior, and (iii) a discussion of the limitations of the models used in the code during the transients studied. Our standard for making a determination of model qualification is the accuracy with which the RETRAN results predict plant data or scale tests and the applicant's discussion and justification of their nodalization, internal code model selection and demonstration that such internal models are used within their range of applicability and within the approval granted for use of RETRAN to UGRA.

As the above criteria indicate, technical competence is a broad term which includes not only (1) preparation of input to the code which models the plant and obtaining output which presents transient results, but also (2) justification of the input as technically sound and thorough interpretation and analysis of the results. FPL's original application and their responses includes only minimal information covering point (2). Since this submittal does not include sufficient information supporting point 2, our review is necessarily confined to point 1. FPL's letter [3] states that "for every analysis submitted in the future in support of a licensing action, FPl will have to demonstrate by sensitivity studies or other means that (the) results are within the particular acceptance criteria appropriate for that analysis". It is our understanding, therefore, that future FPL submittals will thoroughly address point 2.

With respect to point 1, FPL has prepared input for and obtained output in respect of each of the transients contained in the submittal and in most cases the output does not appear to be technically unreasonable. We therefore recommend approval of the applicant's technical competence in the sense of demonstration of its ability to prepare input to simulate transients using the RETRAN computer code and to obtained output therefrom. In addition, within the limits and qualifications listed below, we recommend approval of the applicant's ability to interpret results. Since FPL chose not to present justification for its nodalization or model selection, we cannot state that FPL has generally demonstrated its technical competence to perform analysis, although portions of the Turkey Point SBLOCA and SGTR analyses and the St. Lucie Steam Line Break analysis are good.

Since the report does not sufficiently address point 2, it does not contain adequate material to serve as a document which may be generally referenced to support future FPL licensing submittals nor does it contain sufficient material to provide a basis for assessment of accuracy or adequacy of their plant models (single- and two-loop plant models were developed). Use of these models in future submittals would require:

1. The applicant must justify its nodalization and control system

modeling for each transient and for each of their two different plant designs, including asymmetrical plant conditions.

2. The applicant must justify, in depth, by detailed reference to either the approval granted to UGRA or by its own analysis and information, each of the RETRAN models and correlations selected for each transient.

3. The applicant must justify its use of core physics parameters and methodology.

In addition, the applicant must provide detailed analysis of each transient included in any such future submittal.

Finally, we suggest, because the responses indicate that in several instances FPL has not carefully reviewed their input or their plots prior to submittal, that it may be useful for the NRC to audit, in the same manner as was done by the NRC for TVA, the applicant's Quality Assurance procedure with respect to their performance of analysis.

If you have any questions or require additional information, please do not hesitate to contact us.

Yours sincerely,
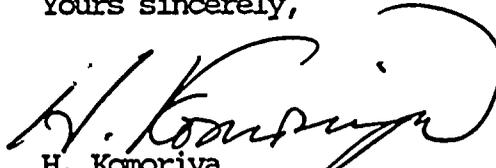
H. Komoriya

Paul B. Abramson

Attachment
cc: W. Hodges, NRC/NRR/DEST
     R. Jones, NRC/NRR/DEST/RSB
     S. Bajwa, NRC/NRR/TAM
     C. Poslusny, NRC/NRR/TAM
     J. Bazin, NRC/DC

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