

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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Before the
ATOMIC SAFETY AND LICENSING BOARD

_____)
In the matter of:)
_____)
PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE) Docket Nos.: 50-443
ET AL.) and
_____) 50-444
(Seabrook Station, Units 1 and 2))
_____) March 23, 1983

Affidavit of Stephen S. T. Fan

I, Stephen S. T. Fan, being duly sworn, state as follows:

1. I am currently Professor of Chemical Engineering and Chairman of the Department of Chemical Engineering at the University of New Hampshire, and consultant to the New Hampshire Office of the Attorney General. My professional qualifications are outlined in my curriculum vitae attached as Attachment A to New Hampshire's January 12, 1983 Response to Applicant's Interrogatories.
2. In view of the fact that the integrity of Westinghouse steam generator tubes has been under question, due to repeated occurrences of tube ruptures, it is important to determine how the residual heat removal system will function if the efficiency of the steam generator is impaired due to the loss of a portion of the heat transfer surface resulting from the defective tubes.
3. This tube integrity problem has persisted with Westinghouse's latest Model F steam generator.
4. Furthermore, due to low temperature driving force and the possibility of flow reversal in some of the tubes during natural circulation conditions, the margin of safety for heat transfer may not be large.

5. Based on the above considerations, the design of the residual heat removal system should be thoroughly studied to fully assess the design limit and effectiveness of the system and to determine if additional means of residual heat removal should be introduced to ensure adequacy of the system.
6. Unless and until this study is performed there is insufficient assurance of a reliable residual heat removal system that is environmentally qualified, satisfying the requirements of GDC 34 and GDC 4.

Stephen S.T. Fan

Dr. Stephen S. T. Fan
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THE STATE OF NEW HAMPSHIRE
STRAFFORD, SS.

Personally appeared this 23rd day of March, 1983, Dr. Stephen S.T. Fan, before me, the undersigned officer, and made oath that the foregoing statements are true to the best of his knowledge and belief.

[Signature]
My Commission Expires

[Signature]
Notary Public/Justice of the Peace