

DEC 29 1976

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DOCKET NOS: 50-438  
and 50-439

Tennessee Valley Authority  
ATTN: Mr. Godwin Williams, Jr.  
Manager of Power  
830 Power Building  
Chattanooga, Tennessee 37201

bcc: NSIC (w/encl.)  
TIC (w/encl.)  
ACRS (16) (w/encl.)

Gentlemen:

SUBJECT: COMPLIANCE WITH 10 CFR PART 50, APPENDIX K  
(BELLEFONTE NUCLEAR PLANT - ECCS REEVALUATION)

During the course of our review of emergency core cooling system (ECCS) evaluation models, we recently determined that the model which you reference in your application does not comply with Section I.C.4.e. of Appendix K to 10 CFR Part 50. The criteria for compliance with Appendix K were established by the NRC staff and were discussed with each reactor vendor.

We have concluded that the ECCS evaluation model which you reference can be corrected with only a small effect on the calculated fuel element peak clad temperature, and have so informed your reactor vendor directly (see Enclosure).

This letter is to inform you that an ECCS model correction and subsequent ECCS reevaluation using that model to demonstrate compliance with Appendix K is necessary and must be submitted with your Final Safety Analysis Report.

This request for generic information was approved by GAO under a blanket clearance number B-180225 (R0072). This clearance expires July 31, 1977.

Sincerely,

*for*

Original signed by  
Agency Officer

Olan D. Parr, Chief  
Light Water Reactors Branch No. 3  
Division of Project Management

Enclosure:

Letter from NRC to B&W  
(D. Ross to K. Suhrke),  
dated December 2, 1976

*9* ECCS 2

OFFICE	See Page 2	LWR #3	LWR #3	LWR #3	
SURNAME		MRushbrook	WPike	ODParr	
DATE		12/29/76	12/29/76	12/29/76	

Tennessee Valley Authority

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DEC 29 1970

cc: Herbert S. Sanger, Jr., Esq.  
General Counsel  
Tennessee Valley Authority  
629 New Sprankle Building  
Knoxville, Tennessee 37902

Mr. E. G. Beasley  
Tennessee Valley Authority  
400 Commerce Avenue, W9C 165  
Knoxville, Tennessee 37902

Mr. T. Spink  
Licensing Engineer  
Tennessee Valley Authority  
303 Power Building  
Chattanooga, Tennessee 37401

ENCLOSURE



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

DEC 2 1976

Mr. Kenneth E. Suhrke  
Manager, Licensing  
Babcock and Wilcox  
P.O. Box 1260  
Lynchburg, Va. 24505

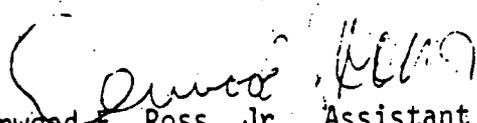
Dear Mr. Suhrke:

During the course of our review of emergency core cooling system (ECCS) evaluation models, it has come to our attention that use of a nucleate boiling heat transfer correlation during blowdown after critical heat flux (CHF) is first predicted, may not conform to the requirements of Appendix K to 10 CFR 50. The criteria for compliance with Appendix K have been established by the NRC staff and were discussed with you. This is similar to the matter identified with respect to the Combustion Engineering (CE) evaluation model.

Based on our experience in connection with developing a correction for the CE model, we conclude that there are acceptable correlations which can be used and which would have a small effect on calculated peak clad temperature.

We are instructing all operating plants which have been evaluated for ECCS performance using your model to submit a re-evaluation using a model corrected to preclude the use of a nucleate boiling heat transfer correlation during blowdown after CHF has been predicted by the approved correlation. Since the expected effect on peak cladding temperature is small, continued operation of these plants within the limits of the existing Technical Specifications, in the interim until the required recalculations are performed, will continue to provide reasonable assurance that calculated peak clad temperature will remain within the limits of 10 CFR 50.46 and will result in no undue risk to the public health and safety. However, it is essential that you submit the corrected model for our evaluation as soon as possible since new licensing actions involving CP and OL applications or reload cores may be impacted until your evaluation model is fully in compliance with Appendix K.

Sincerely,

  
Denwood F. Ross, Jr., Assistant Director  
for Reactor Safety  
Division of Systems Safety  
Office of Nuclear Reactor Regulation