

Docket File

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

DOCKET NO.: 50-29

DATE: November 21, 1975

LICENSEE: Yankee Atomic Electric Company (Yankee)

FACILITY: Yankee-Rowe

SUMMARY OF MEETING HELD ON NOVEMBER 17, 1975, TO DISCUSS YANKEE'S  
CORE XII ECCS COOLING PERFORMANCE ANALYSIS

On November 17, 1975, we met with representatives of Yankee and their contractors, Exxon Nuclear Corporation (ENC) and Energy Incorporated (EI), to discuss a range of topics related to Yankee's Core XII ECCS cooling performance analysis. Our initial discussion with Yankee on the subject of single failures during a previous meeting on November 6, 1975, have been summarized in our meeting minutes dated November 11, 1975.

A list of attendees is attached.

From its review of Yankee's Core XII ECCS cooling performance evaluation (submitted on October 10, 1975) the staff found that the ECCS cooling performance as submitted was not calculated in accordance with an entirely acceptable evaluation model (WREM - based ENC evaluation model, particular to Yankee-Rowe) and that it does not conform with the provisions of 10 CFR Part 50, Section 50.46. The principal reason for the staff's findings were that the changes and certain corrections to the calculational model (determined by ENC and the staff during October 1975 to be necessary) are not reflected in the Yankee-Rowe Core XII ECCS analysis. Further, the staff did not have the necessary information including experimental evidence available to accept certain features (definition of end-of-bypass and phase separation in the lower plenum of the Yankee-Rowe vessel) used in the analysis. In addition, the question of single failures (initially discussed during our November 6, 1975 meeting) still remained unresolved. The purpose of this meeting was to discuss these specific topics and to identify the information needed by the staff in Yankee's forthcoming supplements to find Yankee's ECCS cooling performance analysis in conformance with 10 CFR 50, Section 50.46 in order for NPC to authorize startup of Yankee-Rowe with Core XII. The significant highlights of this meeting are summarized below.

A. ECCS Performance Calculations

- Yankee discussed in detail end-of-bypass and phase separation in the Yankee-Rowe ECCS performance analysis in an effort to convince the staff that these specific features are applicable to Yankee-Rowe and meet Appendix K to 10 CFR Part 50. The staff indicated that use of these features were not adequately justified at this time and therefore they cannot be found acceptable for the Core XII ECCS performance analysis.

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- The staff discussed the specific changes and corrections that are necessary to bring the Yankee-Rowe calculational models in conformance with Appendix K. These had previously been discussed with ENC in connection with the H. B. Robinson, Unit 2 ECCS performance analysis, they have been found acceptable by the staff and are documented on the H. B. Robinson docket.
- The staff stated that Yankee should recalculate cladding temperatures resulting from the largest Double-Ended Cold Leg Break and one equivalent Split Break. For these calculations ENC should use the H. B. Robinson model exactly as approved by the staff, since this model is also particular for Yankee-Rowe. Yankee committed to provide calculations for the entire break spectrum and sensitivity studies as soon as practical after Core XII startup.
- Yankee will use a constant pressure of 26.5 psia for the containment back pressure. This will resolve a small discrepancy between the staff's containment calculations and those done by Yankee.

#### B. Single Failures

Potential single failures of ECCS valves have been previously identified by the staff (see November 11, 1975 meeting minutes). During this meeting the staff discussed Yankee's proposal to preclude single failures. Agreement was reached on an acceptable approach to resolve this problem, including the following interim modifications:

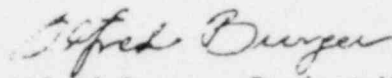
- During power operation, A.C. power will be removed from the following motor operated valves with the valves in their normally opened position by removal of the circuit breaker from the motor control center: SI-MOV-1, -4, -22, -23, -24, -25, -46, and -49.
- During power operation, A.C. power will be removed from the following motor operated valves with the valves in their normally opened position by opening of the circuit breaker at the motor control center: CS-MOV-523 and CS-MOV-524. Removal of power to these valves will require that Yankee provides for tripping of the charging pumps on receipt of a safety injection signal.
- During power operation, A.C. power will be removed from motor operated valve CS-MOV-522 with the valve in its normally closed position by opening the circuit breaker at the motor control center.
- During power operation, A.C. power will be removed from the following motor operated valves with the valves in their normally opened position by disconnecting the power cables from the load side of the circuit breakers at the motor control center: CS-MOV-533, -535, -536

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-537, -538, -539, -301, -302, -309, -310, -318, -319, -325, and -326.

- During power operation, A.C. power will be removed from the motor operated valve CS-MOV-532 with the valve in its normally closed position by disconnecting the power cables from the load side of the circuit breakers at the motor control center.

Yankee will modify the Emergency Operating Procedures to eliminate the "Cutback" mode of operation. Yankee will provide a submittal documenting the interim modifications in time for the staff to complete its review prior to approval of Core XII startup. Yankee was requested to provide a proposal for permanent modifications within sixty days from Core XII startup.



Alfred Burger, Project Manager  
Operating Reactors Branch #1  
Division of Reactor Licensing

Enclosure:  
List of Attendees

cc: See next page

cc: Licensee.  
NRC PDR  
Local PDR  
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V. A. Moore  
J. F. Stolz  
K. Kniel  
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D. J. Skovholt  
P. F. Collins  
R. H. Vollmer  
R. W. Houston  
K. R. Goller  
R. A. Purple  
D. L. Ziemann  
G. Lear  
R. Reid  
R. P. Denise  
R. A. Clark  
T. P. Speis  
D. R. Muller  
G. W. Knighton  
G. K. Dicker  
B. J. Youngblood  
W. H. Regan  
S. Varga  
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R. R. Maccary  
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T. M. Novak  
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Project Manager  
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NRC Participants  
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D. Eisenhut  
B. Rusche  
E. Case  
R. Boyd  
EP Project Manager  
Docket File  
NRR Reading  
J. R. Buchanan

LIST OF ATTENDEES

MEETING WITH YANKEE ATOMIC ELECTRIC

NOVEMBER 17, 1975

NRC

V. Stello  
D. Ross  
T. Novak  
A. Burger  
C. Berlinger  
S. Kucharski  
D. Tondi  
H. Vandermolen  
R. Fitzpatrick  
R. Lobel  
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F. Orr  
G. Lauben  
P. Norian  
Z. Rosztoczy  
W. Hodges  
H. Sullivan

YAEC

D. Vandenburgh  
W. Johnson  
L. Heider  
F. Baxter  
R. Shone  
P. Rainey  
T. Hencey  
A. Ladieu  
J. Beck  
R. Grube

ENC

L. Worley, III  
G. Owsley  
S. Jensen

EI

H. Curet