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JENSEN,S.E. Exxon Nuclear Co., Inc. (subs. of Exxon Corp.)
RECIP.NAME RECIPIENT AFFILIATION
ORR,F. Reactor Systems Branch

SUBJECT: Responds to question re basis for full ECCS flow used in LOCA-ECCS analysis in XN-NF-82-35,Suppl 1,per 821208 telcon.

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December 9, 1982
SEJ:034:82

Mr. Frank Orr
Reactor Systems Branch
Division of Systems Integration
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

SUBJECT: NRC QUESTION REGARDING FULL ECCS FLOW

Dear Mr. Orr:

The following documents ENC's response to your question regarding full ECCS flow as discussed in our telephone conversation of December 8, 1982.

Question

In XN-NF-82-35, Supplement 1, ENC documented a LOCA-ECCS analysis assuming no single failure using full ECCS flow. What is the basis for the full ECCS flow used in this analysis?

Response

The full ECCS flow is a conservatively high ECCS flow rate vs system backpressure assuming all ECCS systems operate and accounting for all ECCS water sources. The data were generated by Westinghouse calculations specifically for D.C. Cook Unit 2 and were supplied to Exxon Nuclear Company by American Electric Power Company. The maximum safeguards flow or full ECCS flow is based on total pumped ECCS flow with all trains operating and all lines injecting. Specific assumptions include:

(1) The pump head curve was increased uniformly over the entire curve by 10% of the design head at design flow.

(2) The calculated system resistance was decreased by 20%.

(3) The SI and charging pump throttle valves were set to limit flow to 650 and 550 gpm, respectively, considering the reduced system resistance and design pump head curve.

(4) The RCP seal injection flow was included as a part of the total injection flow to the RCS.

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If you have any further questions, please feel free to call, telephone (509) 375-8477.

Sincerely,

S. E. Jensen, Manager
NSSS System Analysis (ECCS)

SEJ:gf

CC: Mr. D. L. Wigginton (USNRC)
Dr. J. I. Castresana (AEP)
Mr. H. G. Shaw (ENC)