

# REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

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 FACIL: 50-316 Donald C. Cook Nuclear Power Plant, Unit 2, Indiana  
 AUTH. NAME: JENSEN, S.E. AUTHOR AFFILIATION: Exxon Nuclear Co., Inc. (subs. of Exxon Corp.)  
 RECIP. NAME: ORR, F. RECIPIENT AFFILIATION: Reactor Systems Branch

DOCKET #  
05000316

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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AN AFFILIATE OF EXXON CORPORATION

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Mr. Frank Orr (USNRC)

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December 9, 1982

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)

