

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

SEP 3 0 1980

Docket No.: 50-298

MEMORANDUM FOR: T. M. Novak, Assistant Director for Operating Reactors, DL

FROM: L. S. Rubenstein, Assistant Director for Core and Containment

Systems, DSI

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SUBJECT: DSI QUESTIONS ON G.E. COOPER NUCLEAR STATION SINGLE-LOOP OPERATION

Plant Name: Cooper Nuclear Station

Docket Number: 50-298
Licensing Stage: 0R
Responsible Branch: 0RB-2
and Project Manager: V. Rooney

Description of Review: First Round Questions
Requested Completion Date: September 30, 1980

Review Status: Request for Additional Information

Enclosed are questions from the Thermal-Hydraulics Section of the Core Performance Branch on the General Electric Single-Loop Operation Report NEDO-24258.

> L. S. Rubenstein, Assistant Director for Core and Containment Systems Division of Systems Integration

Enclosure: As stated

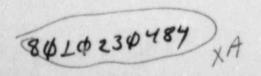
cc: D. Ross L. Phillips

D. Eisenhut
P. Check
S. Diab
T. Speis
T. Huang

T. Ippolito S. Gupta W. Johnston

Contact: S. Gupta

X-27091



492.0 CORE PERFORMANCE BRANCH, THERMAL-HYDRAULICS SECTION

- 492.1 Specify expected minimum and maximum operating core power/flow condition as percentage of Rated Core Power/Flow for Single-Loop Operation.
- 492.2 At the specified minimum and maximum operating Core Power/Flow Condition for Single-Loop Operation, provide the following:
 - (1) Safety Limit MCPR values,
 - (2) Fuel Loading Error MCPR analysis results,
 - (3) Local Rod Withdrawal Error (with limiting instrument failure)
 Transient Summary, and
 - (4) Core Wide Transients Analysis and Operating Limit MCPR results for all the fuel types in the core for the following transients per NEDE-24011-P-A-1: Flow decrease, Cold Water Injection, and Pressurization.
- 492.3 Section 2.0, a 6% Core Flow Measurement Uncertainty has been established for single-loop operation (compared to 2.5% for two-loop operation).

The total core flow uncertainty value of 2.5% corresponds to 11.2% standard deviation in each individual jet pump for two-loop operation. What is the corresponding standard deviation for each individual jet pump for single-loop operation.

492.4 How long will the reactor operate under the single-loop operation.

UNITED STATES UCLEAR REGULATORY COMMISSIO WASHINGTON, D. C. 20556

B. Siegel

MAY 1 9 1981

MEMORANDUM FOR:

T. Ippolito, Chief, ORB#2, DL

FROM:

T. P. Speis, Chief, Reactor Systems Branch, DSI

SUBJECT:

REQUEST FOR A MEETING WITH BWR LICENSEES ON

SINGLE LOOP OPERATION (SLO)

The Reactor Systems Branch is currently reviewing, by request from the Division of Licensing, several BWR licensee (Duane Arnold, Cooper and Peach Bottom) requests for modifications to their plant technical specifications that will permit single loop operation (SLO). In order to make a decision whether SLO is still a safe means of reactor operation, the Reactor Systems Branch and Core Performance Branch requests a meeting to discuss the September 26, 1979 Browns Ferry single loop operation (SLO) "experience". This experience involved unexplained core vibrations which occurred at 59% power during the single loop mode of operation.

The meeting agenda should cover the following subjects:

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Discuss in detail the Browns Ferry SLO experience (this discussion will include their evaluation of the causes of the oscillations); and,

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2. Provide generic justification for power operation of BWRs (licensees maximum desired power) in the single loop mode in the wake of this experience.

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The possible reoccurrence of a BF-1 SLO type of experience has raised the NRC's concern that safety limits could be violated and/or the exhibited instabilities lead to further complications. The presentation would be structured to address:

- core stability;
- 2. core flow symmetry;
- 3. pump cavitations;
- 4. jet pumps and other vessel internals; and.
- 5. safety limits.

It is expected that the information presented at this meeting will allow the staff to decide if single loop operation in BWRs is a safe and prudent means of reactor operation.

CONTACT: Tom Loomis

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We greatly appreciate your assistance in this matter. If any questions arise, or if additional information is needed, please contact To Loomis (29403) of my staff is coordinating this issue.

Themis P. Speis, Chief Reactor Systems Branch

Division of Systems Integration

cc: R. Mattson

T. Novak

P. Check

S. Sun

D. Clark

B. Siegel

M. Fairtile

K. Eccleston

L. Phillips