



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

NOV 10 1978

Handwritten initials and signatures

*Harrison - please
check w/ Henry to det
if any action was completed.
Pls advise. Gary*

MEMORANDUM FOR: ~~A. Schwencer~~, Chief, Operating Reactors Branch-1, DOR
D. Ziemann, Chief, Operating Reactors Branch-2, DOR

FROM: R. Baer, Chief, Reactor Safety Branch, DOR

SUBJECT: REVIEW OF SINGLE LOOP OPERATION IN BWR'S

There are four current technical assistance requests dealing with the review of the acceptability of operation of BWR's with a recirculation loop. The requests and the plants are:

<u>TACS Number</u>	<u>Plant</u>
None	Pilgrim-1 293
6170	Brunswick-2 324
6190	Monticello 263
6184	Dresden 2/3 and 237, 249
	Quad Cities 1/2 254, 265

This memorandum is being written to discuss the status of these reviews.

Each of these reviews consists of several major aspects; namely, ECCS performance, normal operation, and transients. The Analysis Branch (AB) of DSS is reviewing the ECCS model and the Reactor Safety Branch (RS) of DOR is reviewing the plant specific aspects for both normal operation and ECCS performance.

The approach agreed upon by the General Electric Company, AB and RS was as follows:

- (1) General Electric would submit a topical report documenting the ECCS model used for single loop BWR operation.
- (2) The Reactor Safety Branch would review the information submitted on Pilgrim 1 and request any additional information required regarding methods of calculations for normal operation and transients.
- (3) General Electric would update the Pilgrim 1 docket to reflect item (2).
- (4) The Pilgrim 1 docket would be referenced for future submittals, and responses to questions on non-ECCS calculational methods for plants under current review would also reference the Pilgrim 1 docket.

Unfortunately, the General Electric Company has slipped the schedule for the documentation of the model that we require. Their latest scheduled submittal date is early in 1977.

Mr. Leonard Olshan of the RS has been assigned to review the plant specific portion of information submitted by the licensee. He is currently performing item 2 above. We expect to have any requests for additional information on Pilgrim 1 submitted to the Project Manager by November 16, 1976. Requests for additional information on the other docket will be transmitted to the appropriate project managers by December 3, 1976. As indicated in item 4, above, responses to any such request for information may reference the Pilgrim 1 docket regarding methods of calculation for normal operations.

The Reactor Safety Branch of DOR and the Analysis Branch of DSS expect to jointly issue an SER on Pilgrim 1 on December 15, 1976. It should be noted that this SER will require the submittal of a topical report on the ECCS model for single loop operation before such operation will be authorized.

The schedule for the SER on the other docket will be determined jointly by the appropriate Operating Reactors Branch, the AB and the RS, once responses from GE have been received, and a firm date for the ECCS topical report has been determined.

Robert L. Baer
Robert L. Baer, Chief
Reactor Safety Branch
Division of Operating Reactors

cc: V. Stello
D. Eisenhut
Z. Rosztoczy
P. O'Connor
C. Trammell
R. Snaider
R. Frahm
L. Olshan
F. Coffman
R. Woods
S. Weiss
C. Berlinger

1-1
For Docket
Only

INITIAL
NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION
AND NOTICING ACTION

Docket No. 50-263 Facility: Monticello
Licensee: Northern States Power Co. Date of application: 7/2/82 as supplemented
Request for: on 10/5/82

(See attached.)

Initial Determination:

- () Proposed determination - amendment request involves no significant hazards considerations (NSHC).
- (X) Final determination - amendment request involves significant hazards considerations (SHC).

Basis for Determination

- () Licensee's NSHC discussion has been reviewed and is accepted. See attached amendment request.
- (X) Basis for this determination is presented in the attached.)
- () Other (state): _____

(Attach additional sheets as needed.)

Initial Noticing Action: (Attach appropriate notice or input for monthly FRN)

1. () Monthly FRN. Notice of opportunity for hearing (30 days) and request for comments on proposed NSHC determination - monthly FRN input is attached (Attachment 8).
2. () Individual FRN (30 days). Same notice matter as above. Time does not allow waiting for next monthly FRN (Attachments 9a and 9b).

(THIS FORM SHOULD BE TYPED EXCEPT FOR UNUSUAL, URGENT CIRCUMSTANCES.)

Request for:

The amendment would change the Technical Specifications to incorporate revised safety and operating limits associated with the operation of Monticello Nuclear Generating Plant with one recirculation loop out of service. The changes proposed by the licensee would provide for reduced Average Power Range Monitor (APRM) flux scram trip and rod block settings, an increase in the safety limit Minimum Critical Power Ratio (MCPR) value and revisions to the allowable Maximum Average Planar Linear Heat Generation Rate (MAPLHGR) values suitable for use with an idle recirculation loop. Presently, the Monticello Technical Specifications would require plant shutdown if an idle recirculation loop cannot be returned to service within 24 hours. The amendment would authorize the plant to operate up to 50% of rated power for extended periods of time. Supporting the amendment request, is a report prepared by General Electric that presents the analysis for core performance, in accordance with the licensee's application for amendment dated July 2, 1982 as supplemented on October 5, 1982.

Basis for:

The Commission has provided guidance for the application of the standards for determining whether a significant hazards consideration exists by providing examples of amendments that are considered not likely to involve significant hazards consideration (48 FR 14870). One such amendment involves a relief granted upon demonstration of acceptable operation from an operating restriction that was imposed because acceptable operation was not yet demonstrated. This assumes that the operating restriction and the criteria to be applied to a request for relief have been established in a prior review and that it is justified in a satisfactory way that the criteria have been met.

The Monticello Technical Specifications presently require plant shutdown if an idle recirculation loop cannot be returned to service within 24 hours. This restriction was imposed because insufficient information existed to enable the staff to establish criteria for operation with an idle recirculation loop. Although such criteria have since been established, and analyses have indicated that it should be safe to operate Boiling Water Reactors (BWRs) on a single loop in the range of 85% power, operating experience with an idle recirculation loop at Browns Ferry 1 (BF-1) in late 1979 raised concerns about authorizing single loop operation for BWRs. When the Tennessee Valley Authority (TVA) tried to increase power at BF-1 above about 59% of rated power, while operating on a single loop, unexpected variations in jet pump flow, neutron flux, and related parameters were noted. Neither the causes nor the potential effects of these variations have been determined or reviewed by the staff for operation with a single recirculation loop. Thus, it has not been justified in a satisfactory way that the criteria for operation with a single loop have been met. The application for amendment involves changes which do not satisfy the criteria of the applicable example of an amendment which would likely be found not to involve significant hazards consideration. Therefore, the staff has made a determination that the application for amendment may involve a significant hazards consideration.