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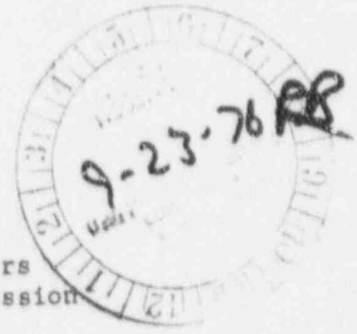
MINNEAPOLIS, MINNESOTA 55401

Regulatory Docket File



September 15, 1976

Mr D L Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors
U S Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr Ziemann:

MONTICELLO NUCLEAR GENERATING PLANT
Docket No. 50-263 License No. DPR-22

Completion of Response to 8/21/75 NRC Letter on
Anticipated Transients Without Scram (ATWS)

This letter, along with our letters of November 10 and December 23, 1975 and June 28, 1976 completes our response to your August 21, 1975 letter. Our response takes into account the NRC Staff position presented in WASH-1270 and NRC comments at the May 7, 1975 Monticello Public Hearing that we had not adequately analyzed the as-built plant for the consequences of an ATWS event. The results of a study done to resolve these issues is attached entitled, "Evaluation of Anticipated Transients Without Scram for the Monticello Nuclear Generating Plant, NEDO-25016".

Upon receipt of your August 21, 1975 letter, we engaged in joint discussions with General Electric and licensees of other BWR facilities in the ATWS "C" category. We then contracted with General Electric for a plant specific study of Monticello to be responsive to your ATWS concerns and to identify a reasonable backfit which would be compatible with the objectives of WASH-1270 and 10CFR50.109. We sought solutions previously overlooked which would be compatible with a number of factors related specifically to the "C" plants. For instance, any modifications to an operating plant which involve radiation exposure to plant and craft personnel might present a greater risk to the health and safety of the general public than the very unlikely ATWS event itself. Secondly, modifications to systems and components of proven integrity and operability could introduce an unwarranted impact on plant design and operation without a commensurate benefit to overall safety. Thirdly, after five years of successful operation, Monticello has experienced a learning curve which is effectively demonstrated by the decreasing number of transients which have occurred; this effect is not taken into account in the WASH-1270 assessment of the probability of ATWS other than to designate a "C" category wherein this effect can be evaluated on a case-by-case review. Our search for solutions ultimately focused on those improvements discussed in the attached evaluation report with no other reasonable alternatives being identified. The study expanded the list of transients to assure that all events were analyzed and the results acceptable. Each transient was analyzed for the plant as-built, as well as the plant as-modified for ATWS considerations. Reliability

of the existing reactor protection system (RPS) was also reviewed with the intention that if ATWS is sufficiently improbable, the transients analyzed in previously docketed information are applicable. The requests for information in your August 21, 1975 letter that are not addressed in the main body of the evaluation report, have been included as an appendix.

WASH-1270 requires submittal of the as-built plant analysis and an evaluation of the vulnerability of the existing RPS to common mode failure. It further states that the Regulatory Staff, having reviewed these unique plant analyses, will evaluate the need for plant changes with the objective of achieving an appropriate resolution of the ATWS issue on an individual case basis. New information on RPS reliability is being submitted by General Electric late this month. A preliminary review of that information shows that the RPS may be sufficiently reliable in its existing form or with minor changes such that major design modifications may not be appropriate. That report will also discuss the improvement in reliability which can be achieved by specific modifications. Transient analyses which assume plant modifications are included in the attached evaluation report should you find that additional improvements in the plant shutdown system reliability are warranted for "C" plants. The modifications assumed are the ATWS rod injection (ARI) and the recirculation pump trip (RPT). These improvements, if installed, would be initiated by high reactor pressure or low level using sensors not presently installed. The ARI, having sensed either high pressure or low level, would effect a pnuematic signal to each CRD hydraulic unit so as to be completely independent of the existing RPS. The ARI would involve a time delay for the scram should the primary scram fail. The RPT is included in the analysis to reduce the short term consequences of the postulated ATWS event until the ARI initiates control rod insertion.

Because of the dramatic effect of the RPT on the consequences of the postulated ATWS event, and as a result of verbal statements by members of your Staff, we propose to implement RPT on the schedule outlined below, assuming no unreviewed safety questions are raised by our plant Operations Committee or Safe[illegible]udit Committee in the review required by the Monticello Technical Specifi[illegible]. We are not proposing to install ARI at this time, pending our review [illegible] on-going reliability study.

Subsequent to the issuance of WASH-1270 and your request for information, there has been a substantial amount of new data generated on ATWS which should be reviewed by the NRC prior to requiring design changes on the Monticello plant. We hereby request that the following two documents be placed in our docket and reviewed as part of the ATWS consideration for Monticello:

ATWS: A Reappraisal, Part I, An Examination of Analysis of "WASH-1270, Technical Report on ATWS for Water Cooled Power Reactors", SAI/SR-126-PA, Electric Power Research Institute, June, 1976, submitted by J R Lellouche (EPRI) to B Rusche (NRC) August 24, 1976.

BWR Shutdown System Reliability Analysis, scheduled to be submitted by G G Sherwood (GE) to B Rusche (NRC) September 30, 1976.

In conclusion, we propose that the above documents along with the attached evaluation report be reviewed by the NRC so that the ATWS issue for the Monticello plant can be fully resolved. We believe, at this time, that installation of RPT may be fully responsive to your letter and the case-by-case consideration of backfits to "C" plants required by WASH-1270, particularly in light of new information available since 1973 when WASH-1270 was prepared. We intend to install RPT at the first refueling outage when parts and materials are available. Procurement of parts and materials is expected to require 6 to 9 months following your determination on ATWS backfit requirements. The next Monticello refueling outage is scheduled for the fall of 1977. We will propose the appropriate Technical Specification changes 90 days or more prior to implementing RPT. In the interim, we concur that the plant can continue to operate safely as stated in the February 28, 1975 Staff testimony on ATWS, "...the probability of occurrence of an ATWS event with serious consequences is low enough to satisfy our safety objective today and for the next few years". This position is also supported by the EPRI study and the GE reliability program.

Yours very truly,

L. O. Mayer

L O Mayer, PE
Manager, Nuclear Support Services

LOM/MHV/deb

cc: J G Keppler
C Charnoff
MPCA
Attn: J W Ferman

NRC FORM 195 (2-76) U.S. NUCLEAR REGULATORY COMMISSION

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DOCKET NUMBER 50-263

FILE NUMBER

TO: NO MR D L ZIEMANN

FROM: NORTHERN STATES POWER CO
MINNEAPOLIS, MINN
L O MAYER

DATE OF DOCUMENT 9-15-76

DATE RECEIVED 9-23-76

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DESCRIPTION

LTR REF THEIR LTRS 11-10 AND 12-23, 75 AND JUNE 28, 1976.....AND OUR 8-21-75 LTR TRANS THE FOLLOWING.....

ENCLOSURE

COMPLETION OF RESPONSE TO 8-21-75 NRC LTR ON ANTICIPATED TRANSIENTS WITHOUT SCRAM WITH REPORT ENTITLED, "EVALUATION OF ANTICIPATED TRANSIENTS WITHOUT SCRAM FOR THE MONTICELLO NUCLEAR GENERATING PLANT, NEDO-25016".....

DO NOT REMOVE

ACKNOWLEDGED

PLANT NAME: MONTICELLO

566
SAT (See subfiles)
9-24-76 RKB

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