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 Office of Nuclear Reactor Regulation, Director (Post 870411)

SUBJECT: Forwards addl info re 870218 application for amend to  
 License DPR-22, per NRC request. Encl bases to be deleted from  
 Page 39 added to Page 68 of Tech Specs re APRM &  
 intermediate range monitor sram requirements.

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June 18, 1987

10 CFR Part 50  
Section 50.90

Director  
Office of Nuclear Reactor Regulation  
U S Nuclear Regulatory Commission  
Washington, DC 20555

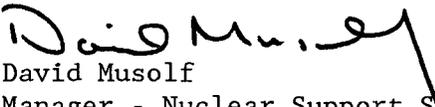
MONTICELLO NUCLEAR GENERATING PLANT  
Docket No. 50-263 License No. DPR-22

Additional Information for the License Amendment Request  
Dated February 18, 1987

In response to questions by the NRC Staff during the review of the License Amendment Request dated February 18, 1987, three items are being supplied to support this submittal. This information was requested by the NRC Staff reviewer and the Monticello Project Manager.

- 1) Replace Bases Information Proposed to be Deleted From Page 39  
Bases information which was proposed to be deleted from page 39 in the February 18, 1987 submittal has been added to page 68 of the Technical Specifications. This additional Technical Specification page should be added to the License Amendment Request submitted on February 18, 1987, APRM and IRM Scram Requirements.
- 2) Supply Additional Information (From GE) to Support This Change  
Additional justification for this change is attached in a document prepared by General Electric Company titled: "Justification for Removal of APRM Downscale Trip From Monticello Tech Specs."
- 3) When is the Mode Switch Placed in "RUN" During a Plant Startup?  
During a normal startup the mode switch is placed in "RUN" when the APRMs indicate about 5% power with all the downscale control board lights off.

Please call us if you have additional questions.

  
David Musolf  
Manager - Nuclear Support Services

DMM/TMP/tp

c: Regional Administrator-III, NRC  
NRR Project Manager, NRC  
Resident Inspector, NRC  
MPCA Attn: F W Ferman  
G Charnoff  
Attachment

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PDR ADDCK 05000263  
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Bases Continued:

3.2 The RBM bypass time delay is set low enough to assure minimum rod movement while upscale trips are bypassed.

The IRM rod block function provides local as well as gross core protection. The scaling arrangement is such that trip setting is less than a factor of 10 above the indicated level. Analysis of the worst case accident results in rod block action before MCPR approaches the Safety Limit (T.S.2.1.A).

A downscale indication of an APRM or IRM is an indication the instrument has failed or the instrument is not sensitive enough. In either case the instrument will not respond to changes in control rod motion and thus control rod motion is prevented. The downscale trips are set at 3/125 of full scale.

For effective emergency core cooling for the small pipe break the HPCI or Automatic Pressure Relief system must function since for these breaks, reactor pressure does not decrease rapidly enough to allow either core spray or LPCI to operate in time. The arrangement of the tripping contacts is such as to provide this function when necessary and minimize spurious operation. The trip settings given in the specification are adequate to assure the above criteria is met. Reference Section 6.2.4 and 6.2.6 FSAR. The specification preserves the effectiveness of the system during periods of maintenance, testing, or calibration, and also minimizes the risk of inadvertent operation; i.e., only one instrument channel out of service.

Six radiation monitors (two reactor building vent plenum, two reactor building vent wide range gas and two refueling floor) are provided which initiate isolation of the reactor building and operation of the standby gas treatment system following a refueling accident. The monitors measure radioactivity in the reactor building ventilation exhaust and on the refueling floor. One upscale trip signal or two downscale/inoperable trip signals, from a pair of monitors performing the same function, will cause the desired action. Trip settings of 100 mR/hr for the reactor building vent plenum monitors and the refueling floor monitors are based upon initiating normal ventilation isolation and standby gas treatment system operation so that none of the activity released during the refueling accident leaves the reactor building via the normal ventilation stack but that all the activity is processed by the standby gas treatment system. The reactor building vent wide range gas monitors trip settings will be calculated in accordance with NRC approved methods in the ODCM to ensure that the alarm/trip will occur prior to exceeding the limits of 10CFR Part 20.

The recirculation pump trip description and performance analysis is discussed in Topical Report NEDO-25016, September 1976, "Evaluation of Anticipated Transients Without Scram for the Monticello Nuclear Generating Plant". (See September 15, 1976 letter from Mr L O Mayer, NSP, to Mr D L Ziemann, USNRC.) The pump trip is provided to minimize reactor pressure in the highly unlikely event of a plant transient coincident with the failure of all control rods to scram. The rapid flow reduction

*The downscale rod blocks assure that there will be proper overlap between the neutron monitoring systems and thus that adequate coverage is provided for all ranges of reactor operation.*

Bases Continued:

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ATTACHMENT

JUSTIFICATION FOR REMOVAL OF APRM DOWNSCALE  
TRIP FROM MONTICELLO TECH SPECS

Reference: D. Musolf (NSP) to U. S. Nuclear Regulatory Commission,  
"License Amendment Request Dated February 18, 1987 APRM  
and IRM Scram Requirements", February 18, 1987.

The APRM Downscale Trip exists on several early BWR plants, including Monticello, but the trip was deleted with NRC concurrence from all later BWR's because it was not seen to be performing any function commensurate with its required surveillance, and because it made only a doubtful contribution to the overall neutron monitoring system. It is a logical step to eliminate the trip function from all plants, and the following discussion supports this decision.

During a normal plant startup, and similarly during shutdown, the reactor mode is changed from Startup mode to run mode at a reactor power level which is consistent with the Neutron Monitoring System IRM and APRM instrument ranges. Under these conditions, the APRM Downscale Trip performs no required function.

The only function performed by the APRM Downscale Trip is to reactivate the IRM scram function if reactor power is reduced too much before changing the reactor mode switch to the Startup mode, or if the mode switch is changed to the Run mode prematurely during startup. An examination of these operator errors indicates that this function of the APRM Downscale Trip is unnecessary.

Consider during a cold plant startup, that the operator prematurely places the mode switch in the Run mode. The operator could only do this at a power level close to the APRM Downscale Trip setpoint, because there must be sufficient steam pressure to prevent MSIV closure (due to low steamline pressure when the reactor mode switch is placed in Run) and the consequent reactor scram. If a hot plant startup was involved, the mode switch could potentially be placed in the Run mode earlier, but this is still of no concern because there is no specific need for the IRM function. The Control Rod Drop Accident is prevented by the APRM scram at the 120% thermal power setpoint, and the Rod Withdrawal Error is prevented by the APRM Downscale Rod Block. Thus, should the operator make the error of prematurely transferring the mode switch to Run mode, all safety concerns are addressed without reliance on the APRM Downscale Trip function.

During power descent, the possible operator error would be to delay changing the reactor mode switch to the Startup mode, thus bypassing the IRM's for a longer period of time and to a lower power level. The consequences of this error are no different than those described in the preceding paragraph for power ascension. The Control Rod Drop Accident and Rod Withdrawal Error are prevented by the same systems.

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Considering the amount of attention normally given by operators to the neutron monitoring instrumentation during startup and shutdown, it is unlikely that they would make the type of error described above. However, in the unlikely event of an operator error, the neutron monitoring system without the APRM Downscale Trip continues to perform its intended function.

WAZ/dc