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 Office of Nuclear Reactor Regulation, Director

SUBJECT: Forwards response to Items 2a & 2b of DB Vassallo 830728 ltr re control of heavy loads. Gear durability rating does not meet CMAA-70 requirements. Existing procedures satisfactory.

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October 25, 1983

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

Control of Heavy Loads (Turbine Building Crane
Evaluation to Two CMAA-70 Requirements)

In a letter dated July 28, 1983 from Mr Domenic B Vassallo, Chief, Operating Reactors Branch #2, Division of Licensing, USNRC, we were provided with a draft Technical Evaluation Report (TER) prepared by Franklin Research Center related to control of heavy loads at the Monticello Nuclear Generating Plant. Enclosure 3 to Mr Vassallo's letter identified additional information required to resolve this issue. We provided responses to Items 1 and 2c of Enclosure 3 on September 27, 1983. This letter responds to Items 2a and 2b, completing our response to the July 28, 1983 letter.

The gear durability rating, identified in Item 2b of the attachment, does not meet the CMAA-70 requirements. It should be noted that the standard defining the allowables, CMAA-70, did not exist at the time when the turbine building crane was designed and built. However, existing maintenance procedures will identify any significant deterioration of the gearing before any operability concerns would be approached.

Please contact us if you have any questions related to the information we have provided.

David Musolf
Manager - Nuclear Support Services

DMM/TMP/dab

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Attachment

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PDR ADOCK 05000263
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MONTICELLO NUCLEAR GENERATING PLANT

Attachment to Letter Dated October 25, 1983

1. Open Item - See September 27, 1983 response.
2. Open Item (Guideline 7)

Additional information regarding the Turbine Building crane is needed in order to determine whether its design is adequate or comparable with CMAA-70 requirements. The licensee should provide the following information:

- a) For the hoist drum, determine the ratio between the combined crushing and bending loads and the individual crushing and bending loads.
- b) Determine the gear horsepower rating for gears actually installed and its comparison to that required by CMAA-70.

Response 2a

Calculations performed by Whiting Corporation for the hoist drum (shown below) indicates that all stresses are within allowables.

	<u>Drum Stresses</u>	<u>Allowable Stresses</u>
Bending Stress	1,885 psi	15,200 psi
Crushing Stress	15,040 psi	15,200 psi
Combined Stress (max Shear)	8,460 psi	11,400 psi

Response 2b

Three sets of reduction gears are used in the Turbine Building Crane. Two gear sets are contained in the Main Hoist and one set in the External Reduction unit.

Shown in the table below are the gear strength and durability ratings which should not be less than the CMAA-70 Required Rating.

	<u>Minimum Gear Strength Rating</u>	<u>Gear Durability Rating</u>	<u>CMAA-70 Rev 75 Required Rating</u>
Main Hoist	64.2 HP	59.4 HP	28.7 HP
External Reduction	35 HP*	21 HP	26.4 HP

The main hoist meets the standard, however the external reduction gear durability rating is 26% under the CMAA-70 requirement. Whiting Corporation has assured us that this is not a problem. The purpose of this requirement is to account for service related deterioration of the gear teeth. Periodic inspection, consistent with normal maintenance routines are sufficient to qualify the serviceability of the gearing from a durability standpoint.

- 2.c Open Item - See September 27, 1983 response.

*Minimum Pinion Strength = 33.6 HP