

C 09/29/78

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DOCDATE: 09/25/78
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DOCTYPE: LETTER NOTARIZED: NO
SUBJECT:

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FURNISHING CLARIFICATION TO APPLICANT'S AUGUST 1978 RESPONSE TO NRC STAFF
QUESTION 10 CONCERNING ANALYSIS TECHNIQUES EMPLOYED DURING ORIGINAL DESIGN OF
SUBJECT FACILITY'S SPENT FUEL POOL & RE-EVALUATION OF POOL STRUCTURE TO
ASSURE SAFETY PERFORMED DUE TO

PLANT NAME: KEWAUNEE

REVIEWER INITIAL: XJM
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(DISTRIBUTION CODE A001)

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DISTRIBUTION: LTR 40 ENCL 0
SIZE: 2P

CONTROL NBR: 781430117

MA 60

***** THE END *****

WISCONSIN PUBLIC SERVICE CORPORATION

Public Service

P.O. Box 1200, Green Bay, Wisconsin 54305

September 25, 1978

Mr. Victor Stello, Director
 Division of Operating Reactors
 Office of Nuclear Reactor Regulation
 U. S. Nuclear Regulatory Commission
 Washington, D. C. 20555

Gentlemen:

Docket Number 50-305
 Operating License DPR-43
Spent Fuel Pool Modification

The NRC Staff has expressed a desire for clarification of the analysis techniques employed during the original design of the Kewaunee Plant Spent Fuel Pool and the re-evaluation of the pool structure to assure safety performed due to the proposed modification. The original safety evaluation of the Kewaunee Plant Spent Fuel Pool was performed for service load conditions utilizing methodology consistent with the U. S. NRC Standard Review Plan Section 3.8.3 even though that design evaluation was completed prior to the issuance of the SRP. For design basis earthquake and design basis accident (severe and extreme environmental and abnormal) loads 1.5 times ACI 318-63 allowable values were used. The modification to the Spent Fuel Pool was also evaluated employing methodology consistent with the SRP. Although the margins between allowable limits and the calculated stresses have been reduced due to the increased loading, the code allowable limits and conditions of the SRP remain satisfied. It should be noted that the SRP references ACI 318-71. The original plant design calculations were based on the ACI 318-63 code allowables as were the calculations associated with the modification evaluation in order to take advantage of the existing design calculation results. It was assured, however, that relevant code requirements of ACI 318-63 are conservative when compared to the requirements of ACI 318-71.

The following information is provided to clarify the information submitted on August 1978 in response to NRC Staff Question 10. The Nitronic Stainless Steels employed in the new spent fuel rack assembly were evaluated for their specific load carrying acceptability by use of the following formula.

$$\text{Strength at load temperature} = \left[\begin{array}{l} \text{Code Allowed Strength} \\ \text{at Room Temperature} \end{array} \right] \times \left[\begin{array}{l} \text{Product data average} \\ \text{strength at temperature} \\ \text{Produce data average} \\ \text{strength at room} \\ \text{temperature} \end{array} \right]$$

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A001
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Mr. V. Stello
September 25, 1978
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The references to the code allowed strength for the Nitronic Stainless Steels are denoted below:

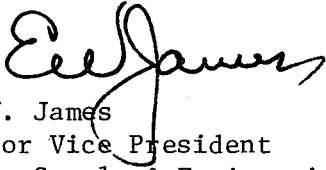
Nitronic 60 -

Alloy designation UNS 210-800
Ref. ASTM A276-77
Minimum yield strength from Table III-50,000 psi

Nitronic 33 -

Alloy designation XM-29
Ref. SA 240-77
Minimum yield strength from Table II-55,000 psi

Very truly yours,



E. W. James
Senior Vice President
Power Supply & Engineering

cmn