



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

December 15, 1995

Mr. Neil S. Carns  
President and Chief Executive Officer  
Wolf Creek Nuclear Operating Corporation  
Post Office Box 411  
Burlington, Kansas 66839

Dear Mr. Carns:

SUBJECT: DENIAL OF THE USE OF CODE CASE N-498-2 AS AN ALTERNATIVE TO THE  
REQUIRED 10-YEAR HYDROSTATIC PRESSURE TEST, WOLF CREEK GENERATING  
STATION (TAC NO. M93986)

The NRC staff has completed its review of the Wolf Creek Nuclear Operating Corporation (WCNOC) submittal of October 31, 1995, requesting approval to use ASME Code Case N-498-2 in lieu of performing the Code-required 10-year hydrostatic test for Class 1, 2, and 3 systems. The staff finds that the use of Code Case N-498-2, which eliminates hold times during system leakage and pressure tests, is not acceptable for implementation on a plant-wide basis.

Code Case N-498-2 was recently approved by ASME, but it has not been reviewed and endorsed by the NRC staff for incorporation into Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1." Pursuant to 10 CFR 50.55(a)(3), alternatives to ASME Code requirements may be found acceptable if (i) the proposed alternatives would provide acceptable level of quality and safety, or (ii) compliance with the specified requirements would result in hardship or unusual difficulties without a compensating increase in the level of quality and safety.

In its safety evaluation for approving the use of ASME Code Case N-498-1, "Alternative Rules for 10-year System Hydrostatic Testing for Class 1, 2, and 3 Systems, Section XI, Division 1," the NRC staff has noted that the hydrostatic test is primarily regarded as a means to enhance leakage detection during the examination of components under pressure and provides a good indication of any system leakage, especially very small leaks that might originate from small through-wall cracks in the pressure boundary. The capability to detect a very small leak is a function of both test pressures and hold times. Code Case N-498-1 was written to lower the test pressure slightly from that required by the hydrostatic test. However, the hold times required by the hydrostatic test are specifically retained in the Code Case N-498-1.

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The slightly higher pressures imposed on the pressure boundary components during hydrostatic testing produce only a minor improvement in leak detection capability over a system leakage test at nominal operating pressure. Code Case N-498-1 was approved by NkC staff on the basis that the compensating increase in the level of quality and safety in the performance of a hydrostatic test does not offset or justify certain hardships created in setting up a hydrostatic test.

The intent of the hydrostatic test is to detect the smallest leak that might originate from a small through-wall flaws of the pressure boundary. Coming after a 10-year period of operation, the Code-required 10-year hydrostatic test can provide a timely discovery and good indication of small leaks which might not be readily detected by other means such as system walkdowns or installed leak detection systems. The capability of detecting a small leak is directly proportional to the hold times of a pressurized system, especially if the leak is insulated. Hydrostatic tests or system leakage and pressure tests specified in Code Case N-498-1, if performed without any hold times, might be insensitive to small leaks because of the long hold times required for such leaks to become visible. Consequently, the stipulation of no hold times in Code Case N-498-2 does not meet the intent of the hydrostatic test and is, therefore, not acceptable.

WCNOC's bases for using Code Case N-498-2 are that (1) ASME has approved the Code Case, (2) running the emergency core cooling system (ECCS) for four hours is detrimental to the pumps, and (3) installation of a temporary hydropump would result in additional costs and radiological exposures. With regard to the first basis, the ASME's approval of certain Code Case does not alone constitute an acceptable basis to grant relief from ASME Code requirements. WCNOC should document and submit for staff review its detailed technical bases, including those from ASME, in accordance with the provisions of 10 CFR 50.55a(a)(3)(i) or (ii). Regarding the second, ECCS pumps should have been designed to run under nominal pressure conditions during the entire post-accident period for as long as required. WCNOC should explain why running the pump for four hours would be detrimental. Regarding the third, the hydrostatic test is the current and existing Code requirement. Using a hydropump does not create additional costs and radiological exposures, although the alternative of using Code Case N-498-1 may reduce slightly the costs and radiological exposures of implementing Code required hydrostatic test.

Although the staff finds the generic implementation of Code Case N-498-2 on a plant-wide basis to be unacceptable, the staff will review, on a system-by-system basis, special situations or alternatives different from Code Case N-498-1, including the use of shorter hold times in accordance with provisions of 10 CFR 50.55a(a)(3). In those cases, the licensee must submit information

to demonstrate that the proposal meets the intent of the hydrostatic test and that compliance with the hydrostatic test requirements will result in hardships and unusual difficulties without a compensating increase in the level of quality and safety.

Sincerely,

Original signed by:

William H. Bateman, Director  
Project Directorate IV-2  
Division of Reactor Projects III/IV  
Office of Nuclear Reactor Regulation

Docket No. 50-482

cc: See next page

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