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SUBJECT: Requests approval to use ASME Code Case N-498-1, "Alternate Rules for 10-Yr Sys Hydrostatic Testing for Class 1, 2 & 3 Sys."

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February 27, 1995

AEP:NRG:0969AE

Docket Nos.: 50-315
50-316

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Gentlemen:

Donald C. Cook Nuclear Plant Units 1 and 2
Request for Use of Code Case N-498-1

Reference: Letter, T. R. Quay (NRC) to N. S. Carns (Wolf Creek),
"Request for Approval of Code Case N-498-1 as an
Alternative to the Required Hydrostatic Pressure Test,
Wolf Creek Nuclear Operating Corporation, Wolf Creek
Generating Station (TAC NO. M90051)," dated
February 3, 1995

Pursuant to the requirements of 10CFR50.55a(a)(3)(i), we request
approval to use ASME Section XI Code Case N-498-1, "Alternative
Rules for 10-Year System Hydrostatic Testing for Class 1, 2, and 3
Systems" for both Unit 1 and Unit 2. The rationale of and
justification for this request are identical to those contained in
a similar request approved for the Wolf Creek Nuclear Plant (see
reference).

This is a cost beneficial licensing action which is estimated to
represent a potential cost savings of \$1 million per outage, as
detailed in attachment 1.


Code Case N-498-1 provides for an alternative to hydrostatic
testing which will retain an acceptable level of quality and safety
for Class 1, 2, and 3 systems. Specifically, it allows the use of
a system leakage test in lieu of a hydrostatic test. This code
case was approved by the ASME Boiler and Pressure Vessel Code
Committee on May 11, 1994, but is not included in the most recent
listing of NRC approved code cases in Revision 11 of Regulatory
Guide 1.147, "Inservice Inspection Code Case Acceptability--ASME
Section XI Division 1."

AD47

The system hydrostatic test is not a test of the structural integrity of the system. Rather, it is an enhanced leakage detection test. Leakage from Class 3 systems is normally the result of erosion/corrosion or joint seal/sealant age deterioration and is readily apparent to inspectors during a system pressure test. Industry experience indicates that, in most cases, leaks are found when the system is at normal operating pressure. Thus, we consider that the alternate requirements proposed in Code Case N-498-1 constitute a reasonable, safe alternative to the existing hydrostatic testing requirements. A copy of the approved code case is attachment 2.

The second ten-year ISI interval for both units will end on July 1, 1996, and Unit 1 systems are currently scheduled for hydrostatic testing of Class 3 systems during the upcoming refueling outage which begins in September 1995. The use of this code case is estimated to reduce the outage critical path time by 72 hours by eliminating hydrostatic tests for the essential service water system, the steam generators, and the diesel generators (starting air and cooling jacket water). Thus, we request that approval of this request be granted prior to July 1, 1995, in order to apply the code case provisions during planning for the upcoming Unit 1 outage.

Sincerely,


for E. E. Fitzpatrick
Vice President

eh

Attachments

cc: A. A. Blind
G. Charnoff
J. B. Martin
NFEM Section Chief
NRC Resident Inspector - Bridgman
J. R. Padgett

ATTACHMENT 1 TO AEP:NRG:0969AE

COST BENEFICIAL LICENSING ACTION

USE OF CODE CASE N-498-1

Regulatory Requirement

Unit 1 and Unit 2 Technical Specification 4.0.5 requires that inservice inspection of ASME Code Class 1, 2, and 3 components be conducted in accordance with Section XI of the ASME Code.

The code requires hydrostatic testing of Class 1, 2, and 3 components. However, Code Case N-498, which has been incorporated into Regulatory Guide 1.147, allows the use of a system pressure test in lieu of a hydrostatic test for Class 1 and Class 2 components. Code Case N-498-1, which has not yet been incorporated into Regulatory Guide 1.147, allows the use of a system pressure test in lieu of a hydrostatic test for Class 3 components. Thus, periodic hydrostatic tests of Class 3 components are required, unless NRC approval is obtained to adopt and apply code case N-498-1 conclusions.

Effect of Requirement

The effect of the requirement is to require testing of the applicable system to pressures exceeding their design values in order to detect leaks.

Rationale for Regulatory Change

Code Case N-498 was endorsed for use by the NRC and has been incorporated into Regulatory Guide 1.147. Code Case N-498-1 extends the scope to ASME Class 3 components. The code committee concluded that no additional benefit would be gained by conducting the existing Class 3 system hydrostatic tests versus performing leak tests at nominal operating pressure.

Approximate Cost of Requirement

The present testing requirement requires the following hydrostatic tests. Times cited are "time at pressure" and do not include system preparation or restoration times.

1. Essential service water

Two tests; ten hours per test

2. Steam generators

Four tests; ten hours per test

3. Diesel generators (starting air and cooling water jackets)

Twelve tests; two hours per test (some tests can be conducted in parallel)

The effort is estimated to represent 72 hours of outage critical time, which equates to approximately \$1 million avoidable cost per outage.

ATTACHMENT 2 TO AEP:NRC:0969AE

CODE CASE N-498-1

CASES OF ASME BOILER AND PRESSURE VESSEL CODE

Approval Date: May 11, 1994

See Numerical Index for expiration
and any reaffirmation dates.

Case N-498-1

Alternative Rules for 10-Year System Hydrostatic
Testing for Class 1, 2, and 3 Systems
Section XI, Division 1

Inquiry: What alternative rules may be used in lieu of those required by Section XI, Division 1, Table IWB-2500-1, Category B-P, Table IWC-2500-1, Category C-H, and Table IWD-2500-1, Categories D-A, D-B, and D-C, as applicable, for the 10-year system hydrostatic test?

Reply:

(a) It is the opinion of the Committee that as an alternative to the 10-year system hydrostatic test required by Table IWB-2500-1, Category B-P, the following rules shall be used.

(1) A system leakage test (IWB-5221) shall be conducted at or near the end of each inspection interval, prior to reactor startup.

(2) The boundary subject to test pressurization during the system leakage test shall extend to all Class 1 pressure retaining components within the system boundary.

(3) Prior to performing the VT-2 visual examination, the system shall be pressurized to nominal operating pressure for at least 4 hours for insulated systems and 10 minutes for noninsulated systems. The system shall be maintained at nominal operating pressure during performance of the VT-2 visual examination.

(4) Test temperatures and pressures shall not exceed limiting conditions for the hydrostatic test curve as contained in the plant Technical Specifications.

(5) The VT-2 visual examination shall include all components within the boundary identified in (a)(2) above.

(6) Test instrumentation requirements of IWA-5260 are not applicable.

(b) It is the opinion of the Committee that, as an alternative to the 10-year system hydrostatic test required by Table IWC-2500-1, Category C-H, the following rules shall be used.

(1) A system pressure test shall be conducted at or near the end of each inspection interval or during the same inspection period of each inspection interval of Inspection Program B.

(2) The boundary subject to test pressurization during the system pressure test shall extend to all Class 2 components included in those portions of systems required to operate or support the safety system function up to and including the first normally closed valve, including a safety or relief valve, or valve capable of automatic closure when the safety function is required.

(3) Prior to performing the VT-2 visual examination, the system shall be pressurized to nominal operating pressure for a minimum of 4 hours for insulated systems and 10 minutes for noninsulated systems. The system shall be maintained at nominal operating pressure during performance of the VT-2 visual examination.

(4) The VT-2 visual examination shall include all components within the boundary identified in (b)(2) above.

(5) Test instrumentation requirements of IWA-5260 are not applicable.

(c) It is the opinion of the Committee that, as an alternative to the 10-year system hydrostatic test required by Table IWD-2500-1, Categories D-A, D-B, or D-C (D-B for the 1989 Edition with the 1991 and subsequent Addenda), as applicable, the following rules shall be used.

(1) A system pressure test shall be conducted at or near the end of each inspection interval or during the same inspection period of each inspection interval of Inspection Program B.

(2) The boundary subject to test pressurization during the system pressure test shall extend to all Class 3 components included in those portions of systems required to operate or support the safety system function up to and including the first normally closed valve, including a safety or relief valve, or valve capable of automatic closure when the safety function is required.

(3) Prior to performing the VT-2 visual examination, the system shall be pressurized to nominal operating pressure for at least 4 hours for insulated systems and 10 minutes for noninsulated systems. The system shall be maintained at nominal operating pressure during performance of the VT-2 visual examination.

(4) The VT-2 visual examination shall include all components within the boundary identified in (c)(2) above.

(5) Test instrumentation requirements of IWA-5260 are not applicable.

