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FACIL:50-315 Donald C. Cook Nuclear Power Plant, Unit 1, Indiana & 05000315
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ALEXICH,M.P. Indiana & Michigan Electric Co.
RECIP.NAME RECIPIENT AFFILIATION
DENTON,H.R. Office of Nuclear Reactor Regulation, Director

SUBJECT: Requests relief from provisions of ASME Boiler & Pressure Vessel Code Section XI,Subsection IWB-5000 & IWC-5000 as outlined in encl ECCS flow diagrams.Code relief proposed for piping section tests & insps.Fee paid.

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May 17, 1985

AEP:NRC:0070R

Donald C. Cook Nuclear Plant Unit No. 1
Docket No. 50-315
License No. DPR-58
INSERVICE INSPECTION PRESSURE TEST - CODE RELIEF

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Denton:

This submittal and its attached flow diagrams are made pursuant to 10 CFR Section 50.55a(g)(6)(i). Code relief is requested from the provisions of ASME Boiler and Pressure Vessel Code Section XI, subsection IWB-5000 and IWC-5000. We request code relief and alternate tests as proposed for the following piping sections:

1. Emergency Core Cooling System, Flow Diagram 1-5143

Piping Boundaries:

(a) Accumulator No. 1 Discharge Piping -
Valves IMO-110, SI-166-1, IRV-115, SI-168-1

(b) Accumulator No. 2 Discharge Piping -
Valves IMO-120, SI-166-2, IRV-125, SI-168-2

(c) Accumulator No. 3 Discharge Piping -
Valves IMO-130, SI-166-3, IRV-135, SI-168-3

(d) Accumulator No. 4 Discharge Piping -
Valves IMO-140, SI-166-4, IRV-145, SI-168-4

ISI Code Class-2 Requirements:

For a system design pressure of 2485 psig, Article IWC-5000 of Section XI code requires the piping to be tested at a pressure of 3106 psig and temperature not less than 100°F.

Code Relief Request:

We request allowing the above sections of piping to be tested at a pressure of 2280 psig at a temperature above 100°F. By allowing this relief, the test can be performed during Mode 3

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with the Reactor Coolant System (RCS) pressure at 2280 psig and temperature greater than or equal to 500°F. The RCS pressure will be used to block the check valves (SI-166-1, SI-166-2, SI-166-3, SI-166-4) closed, therefore, limiting maximum pressure to 2280 psig.

Basis For Relief Request:

The section of piping upstream of check valves SI-166-1 thru 4 cannot be tested at a pressure of 3106 psig without making extensive temporary modifications to keep the valves closed. The modifications would require: (1) disassembly of the valves, (2) welding of temporary blocks (on the downstream side) inside the valve bodies to hold a "jack screw" type arrangement to keep the valve closed, (3) removal of the temporary blocking devices from the valves after testing and (4) performing necessary non-destructive testing to assure the integrity of the valve bodies before returning them to service. The piping downstream of these valves is part of the RHR System and carries radioactive fluid during normal operation. Therefore, plant personnel will be subjected to substantial radiation exposure and radioactive contamination in order to carry out any modifications for the test.

We believe this to be a reasonable code relief request since the proposed test pressure is, in fact, higher than the 2235 psig nominal operating pressure in the short sections (less than 5 feet) of the piping systems for which the relief is requested.

2. CVCS - Reactor Letdown and Charging, Flow Diagram 1-5129

Piping Boundaries:

(a) 2-Inch Aux. Spray Piping -
Valves QRV-51, CS-325

(b) Normal Charging Loop 4 Cold Leg -
QRV-62, CS-328-L4, CS-326 and CS-327

(c) Alternate Charging Line to Loop 1 Cold Leg -
Valves QRV-61, CS-328-L1

ISI Code-1 Requirement for Item (a):

For operating pressure of 2235 psig, Article IWB-5000 of Section XI code requires the piping to be tested at a pressure of 2458 psig and temperature not less than 100°F.

ISI Code Class-2 Requirement for Items (b) and (c):

For a design pressure of 2735 psig, Article IWC-5000 of Section XI code requires the piping to be tested at a pressure of 3418 psig and temperature not less than 100°F.

Code Relief Request:

We propose testing the above sections of piping at a pressure of 2280 psig at a temperature above 100°F. The test will be performed during Mode 3 with the RCS pressure at 2280 psig and temperature greater than or equal to 500°F. The RCS pressure will be used to block the check valves CS-329L1, CS-329L4 and CS-325 closed therefore limiting maximum pressure to 2280 psig.

Basis for Relief Request for Items 2(a), 2(b), and 2(c):

This is a similar situation to Relief Request No. 1. Check Valves CS-328L1, CS-328L4 and CS-325 are located on the charging lines to the RCS System. These valves must be disassembled and temporarily modified to block them closed in order to perform the required hydrostatic tests and plant personnel will be exposed to high radiation and radioactive contamination during the modification.

We believe this to be a reasonable code relief request since the proposed test pressure is, in fact, higher than 2235 psig nominal operating pressure in the sections of piping between 23 to 115 feet long for which the relief is requested.

3. CVCS - Reactor Letdown and Charging, Flow Diagram 1-5129

Piping Boundaries:

Letdown Lines:

Valves QRV-112, QRV-160, QRV-161, QRV-162

IST Code Class-2 Requirement:

For a design pressure of 2485 psig, Article IWC-5000 of Section XI code requires the above piping to be tested at a pressure of 3106 psig and temperature not less than 100°F.

Code Relief Request:

We request allowing the above section of piping to be tested at a pressure of 2280 psig at a temperature above 100°F during Mode 3 using RCS pressure. Valves QRV-111 and QRV-112 will be opened with QRV-160, QRV-161 and QRV-162 closed.

Basis for Relief Request:

The above section of piping cannot be tested at a pressure of 3106 psig without using a spare 1-inch plugged connection located downstream of instrument QTA-160. This section of piping is located inside the regenerative heat exchanger room which is normally a high radiation area. Therefore, plant personnel will be subject to substantial radiation exposure in order to perform the test.

As an alternative, extending the test boundary to QCR-301 was considered. This would involve using QPX-301 located on the downstream piping outside the regenerative heat exchanger room as a test connection. This consideration was also rejected because valve QCR-301 and the flange bolted to the inlet flange of safety valve SV-51 are 600lb. class which cannot withstand the above test pressure.

We believe this to be a reasonable code relief request since the proposed test pressure is, in fact, higher than 2235 psig nominal operating pressure in the sections of piping approximately 65 feet long for which relief is requested.

4. Emergency Core Cooling System (SIS), Drawing 1-5142

Piping Boundaries:

Valves IMO-51, SI-142L1 - Boron Injection Loop No. 1
Valves IMO-52, SI-142L2 - Boron Injection Loop No. 2
Valves IMO-53, SI-142L3 - Boron Injection Loop No. 3
Valves IMO-54, SI-142L4 - Boron Injection Loop No. 4

ISI Code Class 1 Requirement:

For an operating pressure of 2235 psig, Article IWB-5000 of the ASME Code, Section XI, requires that the piping be tested at a pressure of 2458 psig and a temperature not less than 100°F.

Code Relief Request:

We propose testing the above sections of piping at a pressure of 2280 psig and a temperature above 100°F. The test will be performed during Mode 3 with the RCS pressure at 2280 psig and temperature greater than or equal to 500°F. The RCS pressure will be used to block check valves SI-142L1 thru L4 closed, therefore limiting maximum pressure 2280 psig.

Basis for Relief Request:

This is a similar situation to code relief request No. 1. The sections of the piping system upstream of check valves SI-142L1 thru L4 cannot be tested at a pressure of 2458 psig without making temporary modifications (blocking the valve disc) to keep the check valves closed. Since the piping sections are part of the primary system, plant personnel will be subjected to substantial radiation exposure and contamination in order to carry out such modifications for the test.

We believe that this is a reasonable code relief request since the proposed test pressure is in fact higher than the 2235 psig nominal operating pressure in the sections of piping, each approximately 44 to 55 feet long, for which code relief is requested.

Attachment to this letter contains the following flow diagrams:

1) Dwg. No. 1-5142-29, "Emergency Core Cooling (RHR)", Unit No. 1.
2) Dwg. No. 1-5129-27, "CVCS - Reactor Letdown and Charging".
3) Dwg. No. 1-5142-25, "Emergency Core Cooling (SIS), Unit No. 1.

Unit No. 1 of the Donald C. Cook Nuclear Plant is undergoing the 10 year refueling outage and we plan to test items 2 and 4 noted above during the plant heatup. Items 1 and 3 were tested during the unit cooldown per the criterion noted above. We are requesting the relief because the above noted piping systems can not be tested to ASME Code requirements without modifying the Systems and/or exposing personnel to unnecessary radiation hazards. In order to avoid unnecessary delays and to restore the unit to power on time as scheduled we are requesting a response from the NRC by July 15, 1985. If you have any questions or concerns about the material contained herein, please do not hesitate to call us.

Although these code relief requests have been reviewed by appropriate technical and managerial personal at both AEPSC and the Plant, this document has not yet been reviewed in concert by either our Plant or Corporate Safety Committees, but is scheduled to be reviewed by both bodies shortly. If those reviews result in any changes, we will notify you accordingly.

A check in the amount of $150.00 is attached with this letter for the NRC processing of the aforementioned requests.

This document has been prepared following Corporate procedures which incorporate a reasonable set of controls to insure its accuracy and completeness prior to signature by the undersigned.

Very truly yours,

M. P. Alexich
Vice President

RBK 5/17/85

cm

Attachments

cc: John E. Dolan (w/o attachments)
W. G. Smith, Jr. - Bridgman (w/attachments)
R. C. Callen (w/o attachments)
G. Bruchmann (w/o attachments)
G. Charnoff (w/o attachments)
NRC Resident Inspector - Bridgman (w/attachments)