

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of
NEBRASKA PUBLIC POWER DISTRICT
(Cooper Nuclear Station)

)
)
)
)
)

Docket No. 50-298

EXEMPTION

I.

Nebraska Public Power District (the licensee) is the holder of Facility Operating License No. DPR-46, which authorizes operation of the Cooper Nuclear Station (CNS) at power levels not in excess of 2381 megawatts thermal. The facility consists of a boiling water reactor at the licensee's site in Nemaha County, Nebraska. The operating license provides, among other things, that CNS is subject to all rules, regulations, and orders of the Commission now or hereafter in effect.

II.

The licensee requested, in its application dated May 13, 1994, an exemption from the pressure test requirements of Section III.D.2(b)(ii) of Appendix J, "Primary Reactor Containment Leakage Testing For Water-Cooled Power Reactors," to 10 CFR Part 50 (Appendix J to 10 CFR Part 50). The staff discussed the details of the proposed exemption with the licensee in a telephone conference call on September 28, 1995. The proposed exemption would allow the licensee to leak test the personnel air lock at CNS at a test

pressure less than P_a , (the calculated peak containment internal pressure resulting from the containment design basis accident), under certain conditions. The reduced pressure test of the air lock would be conducted as the first of two tests during a restart from refueling or cold shutdown, prior to entry into an operational mode requiring containment leaktight integrity by the CNS Technical Specifications (TSs). As stated in CNS TS 4.7.A.2.f.5, for periodic leakage testing of the personnel air lock, P_a is 58 psig and the reduced test pressure is 3 psig.

This leakage test is part of the Type B tests required by Appendix J to 10 CFR Part 50 to verify containment integrity. Because an air lock allows entry into the containment and is part of the containment pressure boundary, excessive leakage through the air lock could compromise containment integrity. The air lock consists of an inner and outer door and the leakage test is performed by pressurizing the space between the doors.

Section III.D.2 of Appendix J to 10 CFR Part 50 specifies the required periodic retest schedule for Type B tests, including testing of air locks. Pursuant to Section III.D.2(b)(ii), licensees are required to leakage test air locks, opened during periods when containment integrity is not required by the TSs, at the end of such periods. This section applies to testing of air locks during restart from refueling or cold shutdown because the CNS TSs do not require containment integrity for either of these operational modes. This section states that the air lock test shall be performed at a pressure that is not less than P_a .

The proposed exemption is concerned with Section III.D.2(b)(ii); however, there are two other sections in Appendix J which have requirements on testing

air locks. Section III.D.2(b)(i) requires an air lock test every 6 months at a test pressure of P_a and Section III.D.2(b)(iii) requires a test every 3 days when the air lock is used during a period when containment integrity is required by the TSs. The latter section requires the test pressure to be P_a , or the test pressure specified in the TSs, which for CNS is specified as 3 psig in TS 4.7.A.2.f.5.

The licensee stated in its application that it currently tests the personnel air lock twice during the restart of the plant for power operation from refueling or cold shutdown: (1) prior to the reactor being taken critical, or the reactor water temperature being above 100°C (212°F), and (2) after the last entry into containment for leak inspection during restart. The time between the two tests is about 24 to 48 hours, and the second test is at low reactor power prior to entry into the run mode, the full power mode of operation.

The first test is in accordance with Section III.D.2(b)(ii) and is performed at the conclusion of the period when containment integrity is not required by the TSs. This test is conducted prior to entry into an operational mode requiring containment integrity. The second test is in accordance with Section III.D.2(b)(iii) and is performed at 3-day intervals while the air lock is being used when containment integrity is required. As stated above, in accordance with this section, the second test could be conducted at a test pressure of 3 psig at CNS, because this pressure is stated in TS 4.7.A.2.f.5. However, because the licensee also performs the second test to meet the 6-month interval requirement in Section III.D.2(b)(i), the second test is conducted at P_a .

The proposed exemption would not change the number of air lock tests for the restart to power operation for CNS, the manner in which the second test is conducted, the time when the tests would be run, nor the acceptance criteria for the tests. The proposed exemption also would not change the requirements of Section III.D.2(b)(i) regarding the 6-month periodic test of the air lock at P_a , nor the existing CNS safety limits, safety settings, power operations, or effluent limits.

III.

Pursuant to 10 CFR 50.12(a), "Specific exemptions," the Commission may, upon application of any interested person or upon its own initiative, grant such exemptions in this part as it determines are authorized by law, will not present an undue risk to the public health and safety, are consistent with the common defense and security, and for which special circumstances identified in 50.12(a)(2) are present.

The licensee is proposing to conduct the first air lock test during restart at a test pressure of 3 psig, which is less than P_a , which is not presently allowed by Section III.D.2(b)(ii). The air lock leakage measured at the reduced test pressure would be extrapolated to a value consistent with P_a , then that value would be compared to the acceptance criteria in Appendix J for Type B tests to confirm that containment integrity is verified. If containment integrity is verified, the measured air lock leakage is considered acceptable.

For CNS, by testing the air lock at reduced pressure of 3 psig, a strongback (structural bracing) would not have to be installed on the inner air lock door. During the test, the space between the inner and outer doors

is pressurized. The strongback is needed when the test pressure is P_a because the pressure exerted on the inner door during the test is in a direction opposite to the pressure on the inner door during an accident, and the test pressure is sufficiently high to damage the inner door without the strongback. The reduced pressure test is conducted at a pressure low enough such that the strongback is not needed to protect the inner door.

When no maintenance or repairs have been performed on the air lock that could affect its sealing capability and the periodic 6-month test at P_a has been performed successfully, there is no reason to expect the air lock to leak excessively because it has been opened during a plant shutdown or refueling outage. When the air lock is tested at a pressure less than P_a in preparation for restart from refueling or cold shutdown, the air lock would have been successfully tested at P_a within the previous six months.

Accordingly, the Commission concludes that the licensee's proposed exemption to conduct the first air lock test during the restart from refueling or cold shutdown (when the air lock was opened while containment integrity was not required by the TSs) at the reduced pressure of 3 psig in CNS TS 4.7.A.2.f.5 is acceptable, provided no maintenance or repairs have been performed on the air lock which would affect its sealing capability since the last 6-month test required by Section III.D.2(b)(i) of Appendix J. Section III.D.2(b)(i) requires a test of the air lock at not less than P_a every 6 months since the initial fuel loading and this requirement is not being changed by this exemption. If maintenance or repairs have been performed on the air lock affecting its sealing capability since the last 6-month test, the first test prior to entering a condition which requires

containment integrity must meet the test pressure requirements of Section III.D.2(b)(ii) and be conducted at a test pressure not less than P_a .

Although the licensee conducts the second air lock test during restart at P_a to meet Section III.D.2(b)(i) and thus begin the 6-month interval for air lock tests during the power operating cycle, this exemption does not require that the second test be conducted at P_a . The entry into an operational mode which requires containment integrity by the TSs must be based on an assurance that the containment has such integrity. This assurance can not rely on a test to be conducted hours or days in the future after the operational mode has been entered, unless the proper test can only be conducted after entering the operational mode (i.e., the proper conditions for the test do not exist in the prior mode). An air lock test at P_a could be conducted before entering the operational mode requiring containment integrity and has been conducted in this manner in the past at CNS. Therefore, in approving this exemption to allow the first air lock test during restart to be conducted at the reduced test pressure of 3 psig, the staff does not rely on the second test being conducted at P_a . The method used to correlate the reduced pressure leakage rates to the full pressure leakage rates shall be in accordance with the NRC staff's safety evaluation and the Franklin Research Center technical evaluation report enclosed with the exemption of September 3, 1982.

The special circumstances for granting this exemption pursuant to 10 CFR 50.12 have been identified in the licensee's application dated May 13, 1994. The purpose of Appendix J to 10 CFR Part 50 is to ensure that the containment leaktight integrity can be verified periodically throughout the service lifetime of the containment (including the air lock) so as to maintain

containment leakage within the limits specified in the design basis accident analyses that were part of the basis for licensing CNS. The proposed alternative test method is sufficient to achieve the underlying purpose of the regulation in that it provides adequate assurance of the leaktight integrity of the air lock, and thus of the containment.

Consequently, the special circumstances described in 10 CFR 50.12(a)(2)(ii) exist in that the application of the regulation in these particular circumstances is not necessary to achieve the underlying purpose of the rule in that the licensee has proposed an acceptable alternative test method that accomplishes the intent of the regulation.

IV.

Based on the findings and conclusions above, the Commission has determined that, pursuant to 10 CFR 50.12(a), the exemption requested by the licensee in its letter dated May 13, 1994, is authorized by law, will not present an undue risk to the public health and safety, is consistent with the common defense and security, and has present special circumstances which are identified in 50.12(a)(2). The Commission hereby grants to the licensee an exemption from the requirements in Section III.D.2(b)(ii) of Appendix J to 10 CFR Part 50, to allow reduced pressure testing of the personnel air lock in accordance with TS 4.7.A.2.f.5, prior to entry into operational modes requiring containment integrity, provided there has been no maintenance or repair of the air lock that could affect its sealing capability since the last 6-month test of the air lock.

Pursuant to 10 CFR 51.32, the Commission has also determined that the issuance of the exemption will have no significant impact on the environment.

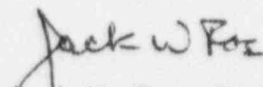
An Environmental Assessment and Finding of No Significant Impact was noticed in the FEDERAL REGISTER on November 6, 1995 (60 FR 57250).

For further details with respect to this action, see the licensee's request for exemption dated May 13, 1994, which is available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, and at the Commission's Local Public Document Room at the Auburn Public Library, 118 15th Street, Auburn, NE 68305.

This exemption is effective upon issuance.

Dated at Rockville, Maryland this 30th day of November 1995

FOR THE NUCLEAR REGULATORY COMMISSION


Jack W. Roe, Director
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

An Environmental Assessment and Finding of No Significant Impact was noticed in the FEDERAL REGISTER on November 6, 1995 (60 FR 57250).

For further details with respect to this action, see the licensee's request for exemption dated May 13, 1994, which is available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, and at the Commission's Local Public Document Room at the Auburn Public Library, 118 15th Street, Auburn, NE 68305.

This exemption is effective upon issuance.

Dated at Rockville, Maryland this 30th day of November 1995

FOR THE NUCLEAR REGULATORY COMMISSION

ORIGINAL SIGNED BY:

Jack W. Roe, Director
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

DOCUMENT NAME: C0091344.EXM *See Previous Concurrence

OFC	LA/PD4-1	PM/DRPE*	PM/PD41	BC/SCSB*	OGC*
NAME	P Noonan	JDonohew	JRHall/vw	CBerlinger	EHoller
DATE	11/28/95	10/30/95	11/28/95	11/17/95	11/27/95
COPY	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO

OFC	D/PD41	D/DRPW
NAME	W Beckner	JRoe
DATE	11/27/95	11/30/95
COPY	YES/NO	YES/NO

OFFICIAL RECORD COPY