

September 7, 1993

Docket No. 50-461

Mr. Richard F. Phares
Director - Licensing
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Dear Mr. Phares:

**SUBJECT: EXEMPTIONS TO 10 CFR PART 50, APPENDIX J - CLINTON POWER STATION,
UNIT NO. 1 (TAC NOS. M85815 AND M86270)**

The Commission has issued the enclosed Exemptions for Clinton Power Station, Unit 1, from certain requirements of Appendix J to 10 CFR Part 50, in response to your letters dated February 17 (U-602097) and April 16, 1993 (U-602116).

A partial exemption from the requirements of 10 CFR Part 50, Appendix J, Section III.D.1.(a) is being issued; and a one-time partial exemption from the requirements of Sections III.B.1.(b), III.B.3, and III.D.2 is being issued. These exemptions will: (1) remove the requirement that the third Type A test of each 10-year service period be conducted when the plant is shut down for the 10-year plant inservice inspection; and (2) remove the requirement to perform a Type B test of inclined fuel transfer system penetration IMC-4 until the fifth refueling outage.

Additional requests for partial exemptions from the requirements of 10 CFR Part 50, Appendix J, Sections III.A.1.(a) and III.A.5.(b) have been deferred by the staff. These exemptions would: (1) remove the requirement to stop a Type A test if potentially excessive leakage is identified; and (2) allow an "as found" Type A test acceptance criterion of L_a and an "as left" acceptance criteria of $0.75 L_a$. The staff has deferred actions on these items pending resolution of current rule-making activities associated with Appendix J.

A copy of the Exemption is being forward to the Office of the Federal Register for publication.

Sincerely,

Original signed by:

John A. Zwolinski, Acting Director
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosure:
Exemption

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cc w/enclosure:
See next page

*See previous concurrence

OFC	LA:PDIII-2	PM:PDIII-2	BC:SCSB	D:PDIII-2	OGC	AD:RIII	D:DR
NAME	CMOORE*	DPICKETT	RBARRETT*	JDYER*	EHOLLER*	JZWOLINSKI	JRC
DATE	09/01/93	9/7/93	07/13/93	09/03/93	08/24/93	9/7/93	

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)
ILLINOIS POWER COMPANY) Docket No. 50-461
(Clinton Power Station, Unit No. 1))

EXEMPTION

I.

The Illinois Power Company (the licensee), is the holder of Facility Operating License No. NPF-62 which authorizes operation of the Clinton Power Station (CPS), Unit 1, at a steady-state power level not in excess of 2894 megawatts thermal. The facility is a boiling water reactor located at the licensee's site in DeWitt County, Illinois. The license provides, among other things, that it is subject to all rules, regulations, and orders of the Nuclear Regulatory Commission (the Commission) now and hereafter in effect.

II.

In its letters dated February 17 and April 16, 1993, the licensee applied for partial exemptions from the Commission's regulations. The subject exemptions are from the requirements in Appendix J to 10 CFR Part 50 that: (1) the third Type A test of each 10-year interval be conducted when the plant is shut down for the 10-year plant inservice inspection; and (2) all containment penetrations be leak rate tested every two years.

III.

An exemption request included in the licensee's February 17, 1993, submittal was for a partial exemption from the requirements of 10 CFR Part 50, Appendix J, Section III.D.1.(a). This Section requires, in part, that "...a set of three Type A tests shall be performed, at approximately equal intervals

during each 10-year service period. The third test of each set shall be conducted when the plant is shutdown for the 10-year plant inservice inspections." The licensee proposes to perform the three Type A tests at approximately equal intervals within each 10-year period, with the third test of each set conducted as close as practical to the end of the 10-year period. However, there would be no required connection between the Appendix J 10-year interval and the inservice inspection 10-year interval.

The 10-year plant inservice inspection (ISI) is the series of inspections performed every 10-years in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and Addenda as required by 10 CFR 50.55a. The licensee performs the ISI volumetric, surface, and visual examinations of components and system pressure tests in accordance with 10 CFR 50.55a(g)(4) throughout the 10-year inspection interval. The major portion of this effort is presently being performed every 18 months during the refueling outages. As a result, there is no extended outage in which the 10-year ISI examinations are performed.

There is no benefit to be gained by the coupling requirement cited above in that elements of the CPS ISI program are conducted throughout each 10-year cycle rather than during a refueling outage at the end of the 10-year cycle. Consequently, the subject coupling requirement offers no benefit either to safety or to the economical operation of the facility.

Moreover, each of these two surveillance tests (i.e., the Type A tests and the 10-year ISI program) is independent of the other and provides assurances of different plant characteristics. The Type A test assures the required leak-tightness to demonstrate compliance with the guidelines of 10 CFR Part 100. The 10-year ISI program provides assurance of the integrity

of the structures, systems, and components as well as verifying operational readiness of pumps and valves in compliance with 10 CFR 50.55a. There is no safety-related concern necessitating their coupling in the same refueling outage. Accordingly, the staff finds that application of the regulation is not necessary to achieve the underlying purpose of the rule.

On this basis, the staff finds that the licensee has demonstrated that there are special circumstances present as required by 10 CFR 50.12(a)(2). Further, the staff also finds that the uncoupling of the Type A tests from the 10-year ISI program will not present an undue risk to the public health and safety.

In their letter dated April 16, 1993, the licensee requested a one-time partial exemption from the requirements of 10 CFR Part 50, Appendix J, Sections III.B.1.(b), III.B.3 and III.D.2 for the Type B testing of the inclined fuel transfer system (IFTS) penetration IMC-4. The leakage rate for this penetration is required to be measured according to the method prescribed in 10 CFR Part 50, Appendix J, Paragraph III.B.1.(b). The Type B test(s) shall be performed at least once every 24 months in accordance with Paragraph III.D.2.(a), and the results shall be added to the combined leakage rate for all penetrations and valves subject to Type B and C tests to verify that the total combined leakage rate is less than the acceptance criteria identified in Paragraph III.B.3. The licensee's proposal is for a one-time partial exemption, for CPS operating cycle 5, from the Type B testing requirements for the IFTS containment penetration as a result of the potential inability to perform a valid Type B local leak rate test (LLRT) on the penetration two-ply bellows assembly.

After completing a review of the facts provided in Information Notice 92-20, "Inadequate Local Leak Rate Testing," issued on March 3, 1992, the licensee determined that there was only one bellows assembly at CPS used in a similar application, IFTS containment penetration IMC-4. Due to the design and configuration of this containment penetration bellows assembly, the current method for performing Type B testing on the bellows assembly may be inadequate. The possibility exists that separation of the two plies of the bellows may not be sufficient to allow air flow to any crack locations such that the current method of performing the Type B test (pressurization between the two plies of the bellows) may not challenge 100% of the area of the two-ply bellows constituting the containment barrier(s). The licensee is, therefore, evaluating a number of options to provide a valid, reliable Type B test on the subject penetration. These options include replacing the bellows assembly with one that could be tested in accordance with 10 CFR Part 50, Appendix J, and developing an alternative means of testing the penetration which meets the requirements of Appendix J.

The licensee has investigated the option of replacing the bellows assembly with one that can be tested in accordance with Appendix J. The best design is one which can be installed without disassembling the IFTS tube and removing the upper pool shutoff valve (located just upstream of the blind flange to which the bellows assembly is attached). A bellows assembly design has been identified which does not require any piping disassembly; however, the bellows would require an ASME "N" stamp and the lead time for procurement and fabrication is expected to be about one year. Based on this lead time it will not be possible to replace the bellows assembly during the next refueling outage; currently scheduled to begin in September 1993.

The licensee is also evaluating the use of a special test box which can be installed over the IFTS containment penetration bellows assembly to permit performance of an acceptable local leak rate test (minimum pathway) of the assembly. A vendor has been identified who can design and fabricate a test fixture for the testing of IMC-4. The box would be made in two or more pieces of stainless steel and would be temporarily attached for the test and then removed upon completion. However, the box is very large (46 inches inside diameter and 27.5 inches in height) and the probability of safely securing and making the box leak tight at the test pressure could prove to be difficult. The licensee further states that the work scope for the upcoming refueling outage has already been established and fixed. The impact to the outage schedule and the cost resulting from attempting to utilize a test box in testing the bellows assembly would be significant. Additional time would have to be scheduled for installation and removal of the test box. The potential radiation exposure associated with the test box installation and removal is also a consideration. In addition, based on the uncertainties associated with the capabilities of the proposed test box, it is not clear that use of the test box will provide the most accurate or useful results.

The licensee has decided that it would not be prudent to quickly implement either of the options described until an in-depth design review of the options can be completed. This review would consider all aspects of the problem, including an evaluation of the cost of replacement vice the risks of a temporary fix. The proposed exemption would, therefore, provide the licensee with the time needed to complete a thorough review. Although the requested exemption would permit the licensee to not complete a valid Type B test of the IFTS penetration until the fifth refueling outage (RF-5), the

licensee is confident that significant leakage from the bellows assembly can still be identified as discussed below.

Until review of Information Notice 92-20, the licensee believed the design of the bellows assembly permitted Type B testing to be performed on the penetration in compliance with the requirements of Appendix J. Notwithstanding, the licensee believes the bellows assembly has shown to be acceptably leak tight and that significant degradation can continue to be detected by testing and inspection. A recent visual examination of the bellows assembly outer surface was performed and no signs of degradation were found. The last LLRT performed on containment penetration IMC-4 indicated a leakage of 21.36 sccm. While the licensee recognizes that these test results may be questionable, they believe they reflect the relative leakage rate of the penetration. ILRT test results to date have all been well within the acceptance criteria (except for a technical problem experienced during RF-3). During the next refueling outage, the licensee will continue to test the bellows assembly as previously tested, will maintain an acceptance criteria of less than 100 sccm per assembly, and will perform a thorough examination of the outer bellows surface. In addition, as a final assurance, the integrity of the bellows will be confirmed as part of the ILRT to be performed during the outage.

The staff has determined that the currently scheduled testing (both LLRT and ILRT), as well as the planned visual examination of the bellows assembly during the next refueling outage, and the historically low associated test leakage provide sufficient justification to support a one-time partial exemption from the Type B testing requirements for containment penetration IMC-4 until the fifth refueling outage. The staff also agrees that the

licensee has made a good faith effort to comply with the requirements of 10 CFR Part 50, Appendix J, for the IFTS containment penetration and has, therefore, demonstrated that there are special circumstances present as required by 10 CFR 50.12(a)(2). Furthermore, the staff finds that delaying the completion of a valid Type B test on penetration IMC-4 until the fifth refueling outage will not present an undue risk to the public health and safety.

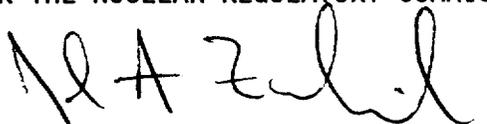
IV.

Accordingly, the Commission has determined that pursuant to 10 CFR 50.12(a), these exemptions as described in Section III are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest and hereby grants the exemptions with respect to the requirements of 10 CFR Part 50, Appendix J, Paragraphs III.D.1.(a), III.B.1.(b), III.B.3, and III.D.2.

Pursuant to 10 CFR 51.32, the Commission has determined that the granting of these exemptions will have no significant impact on the environment (58 FR 31549).

Dated at Rockville, Maryland this 7th day of September 1993.

FOR THE NUCLEAR REGULATORY COMMISSION



John A. Zwolinski, Acting, Director
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation