April 4, 1995

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Mr. Donald F. Schnell
Senior Vice President - Nuclear
Union Electric Company
Post Office Box 149
St. Louis, MO 63166

SUBJECT: ISSUANCE OF EXEMPTION FROM THE REQUIREMENTS OF 10 CFR PART 50, APPENDIX J, FOR CALLAWAY PLANT, UNIT 1, REGARDING DEFERRAL OF NEXT REQUIRED CONTAINMENT INTEGRATED LEAK RATE TEST - (TAC NO. M91094)

Dear Mr. Schnell:

By letters dated December 9, 1994, and January 27, 1995, Union Electric Company (UE) requested an exemption to defer the performance of the Containment Integrated Leak Rate Test (CILRT), as required by 10 CFR Part 50, Appendix J, until the next scheduled outage, Refuel 8.

The NRC staff has reviewed the information provided in support of your exemption request. On the basis of the submitted information and as discussed in the enclosed Exemption, the NRC staff has concluded that there is a high degree of confidence that the containment will not degrade to an unacceptable extent while this Exemption is in effect. Thus, the NRC staff has concluded that your request is justified and your request for an exemption to defer the performance of the CILRT until the 1996 refueling outage is granted.

We find that granting the Exemption from the requirements of 10 CFR Part 50, Appendix J, Section III.D.1.(a), is authorized by law, will not present an undue risk to public health and safety, is consistent with the common defense and security, and meets the special circumstances described in 10 CFR 50.12(a)(2)(ii).

A copy of the Exemption is enclosed. The Exemption has been forwarded to the Office of the Federal Register for publication.

Sincerely,

Original signed by:

L. Raynard Wharton, Project Manager
Project Directorate III-3
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket No. 50-483

Enclosure: Exemption

cc w/encl: see next page

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Mr. D. F. Schnell
Union Electric Company

Callaway Plant
Unit No. 1

cc:

Cermark Fletcher Associates
18225 Flower Hill Way #A
Gaithersburg, Maryland 20879-5334

Gerald Charnoff, Esq.
Thomas A. Baxter, Esq.
Shaw, Pittman, Potts & Trowbridge
2300 N. Street, N.W.
Washington, D.C. 20037

Mr. H. D. Bono
Supervising Engineer,
Site Licensing
Union Electric Company
Post Office Box 620
Fulton, Missouri 65251

U.S. Nuclear Regulatory Commission
Resident Inspectors Office
8201 NRC Road
Steedman, Missouri 65077-1302

Mr. Alan C. Passwater, Manager
Licensing and Fuels
Union Electric Company
Post Office Box 149
St. Louis, Missouri 63166

Manager - Electric Department
Missouri Public Service Commission
301 W. High
Post Office Box 360
Jefferson City, Missouri 65102

Regional Administrator
U.S. NRC, Region III
801 Warrenville Road
Lisle, Illinois 60523-4351

Mr. Ronald A. Kucera, Deputy
Director
Department of Natural Resources
P. O. Box 176
Jefferson City, Missouri 65102

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

Mr. Dan I. Bolef, President
Kay Drey, Representative
Board of Directors Coalition
for the Environment
6267 Delmar Boulevard
University City, Missouri 65130

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	
UNION ELECTRIC COMPANY	)	Docket No. 50-483
	)	
	)	
	)	
(Callaway Plant, Unit 1)	)	
	)	

EXEMPTION

I.

Union Electric Company (UE or the licensee) is the holder of Facility Operating License No. NPF-30, which authorizes operation of Callaway Plant, Unit 1 (the facility), at a rated power level not in excess of 3565 megawatts thermal. The facility is a pressurized water reactor located at the licensee's site in Callaway County, Missouri. The license provides among other things, that it is subject to all rules, regulations, and Orders of the U.S. Nuclear Regulatory Commission (the Commission or NRC) now or hereafter in effect.

II.

Section III.D.1.(a) of Appendix J to 10 CFR Part 50 requires the performance of three Type A containment integrated leakage rate tests (CILRTs), 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 inspection.

III.

By letters dated December 9, 1994, and January 27, 1995, UE requested relief from the requirement to perform a set of three Type A tests at approximately equal intervals during each 10-year service period. The requested exemption would permit an interval extension for the third Type A test of approximately 18 months (from the currently scheduled outage, March 1995, until the next planned refueling outage, September 1996). The exemption request would also permit the third Type A test of the first 10-year service period to not correspond with the end of the current American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) 10-year plant inservice inspection interval.

The licensee's request cites the special circumstances of 10 CFR 50.12, paragraph (a)(2)(ii), as the basis for the exemption. The underlying purpose of the requirement to perform three Type A CILRTs, at approximately equal intervals during each 10-year service period, is to assure that leakage through the primary reactor containment is detected and does not exceed allowable leakage rate values. The licensee has stated that the existing Type B and C local leak rate test (LLRT) programs are not being modified by this request, and will continue to effectively detect containment leakage caused by the degradation of active containment isolation components as well as containment penetrations. It has been the consistent and uniform experience at Callaway during the three Type A tests conducted from 1984 to date, that any significant containment leakage paths are detected by the Type B and C testing. The Type A test results have only been confirmatory of the results of the Type B and C test results. Therefore, consistent with 10 CFR 50.12, paragraph (a)(2)(ii), application of the regulation in this particular

circumstance would not serve, nor is it necessary to achieve, the underlying purpose of the rule.

IV.

Section III.D.1.(a) of Appendix J to 10 CFR Part 50 states that a set of three Type A leakage rate tests shall be performed at approximately equal intervals during each 10-year service period.

The licensee proposes an exemption to this section which would provide an interval extension for the Type A test by approximately 18 months. The Commission has determined that pursuant to 10 CFR 50.12(a)(1) this exemption is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security. The Commission further determines that special circumstances, as provided in 10 CFR 50.12(a)(2)(ii), are present justifying the exemption; namely, that application of the regulation in the particular circumstances is not necessary to achieve the underlying purpose of the rule.

The NRC staff has reviewed the basis and supporting information provided by the licensee in the exemption request. The NRC staff has noted that the licensee has a good record of ensuring a leak-tight containment. All Type A tests were within the acceptance limits. The first Type A test passed with significant margin. The second Type A test confirmed leakage previously identified by Type C testing. The licensee subsequently replaced all containment boundary Essential Service Water valves with an improved design stainless steel valve. This replacement improved LLRT results by 84% for the affected penetrations. The licensee has noted that the results of the Type A testing have been confirmatory of the Type B and C tests, which are performed biennially, and will continue to be performed. The NRC staff considers that

these inspections and system enhancements, though limited in scope, provide an important added level of confidence in the continued integrity of the containment boundary.

The NRC staff has also made use of a draft staff report, NUREG-1493, which provides the technical justification for the present Appendix J rulemaking effort which also includes a 10-year test interval for Type A tests. The integrated leakage rate test, or Type A test, measures overall containment leakage. However, operating experience with all types of containments used in this country demonstrates that essentially all containment leakage can be detected by local leakage rate tests (Type B and C). According to results given in NUREG-1493, out of 180 ILRT reports covering 110 individual reactors and approximately 770 years of operating history, only about 3% of leakage that exceeds current requirements is detectable only by CILRTs, and those few failures were only marginally above prescribed limits. This study agrees well with previous NRC staff studies which show that Type B and C testing can detect a very large percentage of containment leaks. The Callaway experience has also been consistent with this.

The Nuclear Management and Resources Council (NUMARC), now the Nuclear Energy Institute (NEI), collected and provided the NRC staff with summaries of data to assist in the Appendix J rulemaking effort. NUMARC collected results of 144 ILRTs from 33 units; 23 ILRTs exceeded $1.0L_a$. Of these, only nine were not due to Type B or C leakage penalties. The NEI data also added another perspective. The NEI data show that in about one-third of the cases exceeding allowable leakage, the as-found leakage was less than $2L_a$; in one case the as-found leakage was less than $3L_a$; one case approached $10L_a$; and in one case the leakage was found to be approximately $21L_a$. For about half of the failed ILRTs the as-found leakage was not quantified. These data show that, for

those ILRTs for which the leakage was quantified, the leakage values are small in comparison to the leakage value at which the risk to the public starts to increase over the value of risk corresponding to L_a (approximately $200L_a$, as discussed in NUREG-1493).

Based on generic and plant specific data, the NRC staff finds the basis for the licensee's proposed exemption to allow a one-time exemption to permit a schedular extension of one cycle for the performance of the Appendix J Type A test to be acceptable.

Pursuant to 10 CFR 51.32, the Commission has determined that granting this Exemption will not have a significant impact on the environment (60 FR 15611).

This Exemption is effective upon issuance and shall expire at the completion of the 1996 refueling outage.

FOR THE NUCLEAR REGULATORY COMMISSION

Elinor G. Adensam

Elinor G. Adensam, Acting Director
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland
this 4th day of April 1995

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FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by:

Elinor G. Adensam, Acting Director
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland
this 4th day of April 1995

*See previous concurrence.

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