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JOHN S. KEMPER
VICE-PRESIDENT
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SEP 1 4 1984

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

Subject: Limerick Generating Station, Units 1 and 2,
Docket Nos. 50-352 & 50-353
Request for Exemption from 10CFR50, Appendix J

Dear Mr. Denton:

The Limerick Safety Evaluation Report (NUREG-0991) concludes that "... the applicant's proposed leak testing program ... either meets the requirements of Appendix J to 10CFR50 and is therefore acceptable or provides acceptable justification for exemptions to the explicit requirements of Appendix J." As a result of recent discussions with the NRC Staff, there is attached hereto a discussion of each of the elements of the leak rate testing program which does not meet the explicit requirements of Appendix J, together with a discussion of the justifications for the requested exemptions. Based upon the foregoing it is requested that, in accordance with Section 50.12 of the Commission's regulations, the general conclusion of the SER be confirmed by the issuance of specific exemptions to the requirements of Appendix J to 10CFR50. An affidavit in support of this request is attached hereto.

Very truly yours,

John S. Kemper

Attachment

Copy to: See Attached Service List

A017
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COMMONWEALTH OF PENNSYLVANIA :

ss.

COUNTY OF PHILADELPHIA :

J. S. Kemper, being first duly sworn, deposes and says:

That he is Vice President of Philadelphia Electric Company, the Applicant herein; that he has reviewed the foregoing request, pursuant to Section 50.12 of the United States Nuclear Regulatory Commission's regulations, for certain specific exemptions to the requirements of Appendix J to 10CFR Part 50 together with the Justification For The Requested Exemptions and knows the contents thereof; and that the statements and matters set forth therein are true and correct to the best of his knowledge, information and belief.

John S. Kemper
Vice President

Subscribed and sworn to
before me this 14th day
of September, 1984.

Patricia D Scholl
Notary Public

PATRICIA D. SCHOLL
Notary Public, Philadelphia, Philadelphia Co.
My Commission Expires February 10, 1986

cc: Judge Lawrence Brenner (w/enclosure)
Judge Peter A. Morris (w/enclosure)
Judge Richard F. Cole (w/enclosure)
Judge Christine N. Kohl (w/enclosure)
Judge Gary J. Edles (w/enclosure)
Judge Reginald L. Gotchy (w/enclosure)
Troy B. Conner, Jr., Esq. (w/enclosure)
Ann P. Hodgdon, Esq. (w/enclosure)
Mr. Frank R. Romano (w/enclosure)
Mr. Robert L. Anthony (w/enclosure)
Ms. Maureen Mulligan (w/enclosure)
Charles W. Elliot, Esq. (w/enclosure)
Zori G. Ferkin, Esq. (w/enclosure)
Mr. Thomas Gerusky (w/enclosure)
Director, Penna. Emergency Management Agency (w/enclosure)
Angus R. Love, Esq. (w/enclosure)
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Robert J. Sugarman, Esq. (w/enclosure)
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Spence W. Perry, Esq. (w/enclosure)
Jay M. Gutierrez, Esq. (w/enclosure)
Atomic Safety & Licensing Appeal Board (w/enclosure)
Atomic Safety & Licensing Board Panel (w/enclosure)
Docket & Service Section (w/enclosure)
Mr. James Wiggins (w/enclosure)
Mr. Timothy R. S. Campbell (w/enclosure)

JUSTIFICATION FOR THE REQUESTED EXEMPTIONS

NRC regulations provide for specific exemptions in 10CFR50.12(a). The Commission has provided additional guidance regarding this regulation in an order in the Shoreham proceeding[1], as modified by Commission action on July 25, 1984.[2]

In view of the standards in 10CFR50.12(a) and the Commission's guidance regarding the issuance of exemptions, we may synthesize the circumstances in which the requested exemption is warranted as follows: (1) the activities to be conducted are authorized by law, (2) operation with the exemption does not endanger life or property because such would not involve undue risk to the health and safety of the public, (3) the common defense and security are not endangered, and (4) the exemption is in the public interest because, on balance, there is good cause for granting it and the public health and safety are adequately protected.

I. The Requested Exemptions and the Activities Which Would Be Allowed Thereunder Are Authorized by Law

If the criteria established in 10CFR50.12(a) are satisfied, as they are in this case, and if no other prohibition of law exists to preclude the activities which would be authorized by the requested exemption, and there is no such prohibition, then the Commission is authorized by law to grant this exemption request.[3].

II. The Requested Exemptions Will Not Endanger Life or Property

A. Air Lock Testing

10CFR50, Appendix J, Paragraph III.D.2.(b) details three explicit air lock testing requirements. Technical Specification 4.6.1.3 items a and b correspond to, and comply with, those Appendix J requirements with one exception.

Appendix J, Paragraph III.D.2.(b)(ii) requires that "Air locks opened during periods when containment integrity is not required by the plant's Technical Specifications shall be tested at the end of such periods at not less than P_a." In lieu of this requirement, Technical Specification 4.6.1.3.b.2 requires that an overall air lock leakage test be conducted at P_a only when maintenance has been performed on the air lock that could affect the air lock sealing capability. This Technical Specification contains a footnote stating that this requirement is an exemption to Appendix J of 10CFR50.

The existing air lock doors are so designed that a full pressure test at P_a of an entire air lock can only be performed after strongbacks (structural bracing) have been installed on the inner door. This is due to the fact that the pressure exerted on the inner door during the test is in a direction opposite to that of force experienced during a postulated accident and the locking mechanisms are not designed to withstand such reverse forces associated with a pressure greater than 5 psig. Installing strongbacks, performing the test, and removing the strongbacks, is a cumbersome process requiring at least 12 hours during which access through the air lock is prohibited.

The periodic 6-month test requirement of paragraph III.D.2(b)(i) of Appendix J and the 3-day test requirement of paragraph III.D.2(b)(iii) of Appendix J provide assurance that the air lock will not leak excessively if no maintenance which could affect the ability of the airlock to seal has been performed on the air lock and if the air lock is properly engaged and sealed. An exemption from paragraph III.D.2(b)(ii) of Appendix J is requested since the present Technical Specifications are substantially as safe as the requirement itself and does not endanger life or property. This exemption is included as a part of the Standard Technical Specifications (NUREG-0123) and is consistent with current regulatory practice and policy.

Because of Technical Specification surveillance requirements, the requested exemption involves a de facto requirement for an air lock seal test in lieu of the III.D.2(b)(ii) test. Appendix J Paragraph III.D.2(b)(iii) already allows an air lock seal test in lieu of a similar required air lock test at a pressure of not less than P_a thus recognizing the implicit equivalence of these tests under similar circumstances.

As a result, it can be concluded that there is a reasonable assurance against undue air lock leakage provided under the exemption and that no material increase in the probability or extent of air lock leakage is to be expected. Therefore, there is no significant increase in the probability of higher post accident offsite or onsite doses related to the exemption and therefore no significant increase in environmental impact beyond that experienced with no exemption.

B. Main Steam Isolation Valves (MSIV's)

10CFR50, Appendix J, Paragraphs II.H.4 and III.C.2 require leak rate testing of the MSIV's at the peak calculated containment pressure related to the design basis accident. Paragraph III.C.3 requires that the measured leak rates be included in the summation of the local leak rate test results. An exemption is requested to allow leak testing of the MSIV's at reduced pressure and to exclude the measured leakage from the combined local leak rate test results.

Each main steam line is provided with two MSIV's that are positioned to provide effective sealing in the direction of post-accident containment atmosphere leakage. In the event of a LOCA, the MSIV leakage control system will maintain a negative pressure between the MSIV's. The effluent will be discharged into a volume where it will be processed by the standby gas treatment system before being released to the environs. A radiological analysis including this potential source of containment atmosphere leakage (11.5 scfh per steamline) was performed and the results documented in Limerick FSAR Chapter 15. The MSIV's will be periodically leak rate tested to verify that the leakage assumed in the radiological analysis is not exceeded per Technical Specification 3.6.1.2.c.

The design of the MSIV's is such that testing in the reverse direction tends to unseat the valve. Testing of the two valves simultaneously, by pressurizing between the valves, would lift the disc of the inboard valve at peak containment pressure. This would result in a meaningless test. The proposed test calls for pressurizing between the MSIV's at one-half of the peak containment pressure (22 psig) to avoid lifting the disc of the inboard valve. The total observed leakage through both valves is then conservatively assigned to the penetration.

Exemption from paragraphs II.H.4, III.C.2, and III.C.3 of Appendix J is requested since the present Technical Specification is substantially as safe as the requirement itself and does not endanger life or property. This exemption is included as part of the Standard Technical Specifications (NUREG-0123) and is consistent with current regulatory practice and policy.

The existing Technical Specification requirements provide reasonable assurance against undue MSIV leakage and that no material increase in the probability or extent of MSIV leakage is to be expected. Therefore, there is no significant increase in the probability of higher post accident offsite or onsite doses related to the exemption and therefore no significant increase in environmental impact beyond that experienced with no exemption.

C. Traversing Incore Probe (TIP) System

10CFR50, Appendix J, Paragraph II.H.1 and III.B.2 require local leak rate testing of containment isolation valves of this type. An exemption is requested from the requirement to local leak rate test the TIP shear valves.

Each of the five (5) TIP guide tubes is equipped with a ball valve which provides isolation following cable withdrawal. A shear valve is also provided on each guide tube to cut the cable and isolate the tube in the event that isolation is required and the drive cable car not be withdrawn.

Technical Specification 4.6.3.2 requires local leak rate testing of the TIP ball valves. It is impractical to leak rate test the shear valves since their destruction would be required. In lieu of leak rate testing, Technical Specification 4.6.3.5 and 4.6.3.6 require:

- verification of the continuity of the explosive charge once per 31 days,

- initiation of one explosive squib charge at least once per 18 months, and

- replacement of all explosive charges in accordance with the manufacturer's recommended lifetime.

Isolation provisions for the TIP guide tubes are described in detail in LGS FSAR Section 6.2.4.3.1.5. The likelihood of a fission product release to the environment through the TIP guide tubes is demonstrated to be quite low and the radiological consequences of such a release are demonstrated to be minimal.

It can be concluded that there is reasonable assurance against undue TIP guide tube leakage provided under the exemption and that no material increase in the probability or extent of guide tube leakage is to be expected. Therefore, there is no significant increase in the probability of higher post-accident offsite or onsite doses related to the exemption and therefore no significant increase in environmental impact beyond that experienced with no exemption.

D. RHR Relief Valve Discharges

10CFR50, Appendix J, paragraphs II.H.4 and III.B.2 require local leak rate testing of containment isolation valves of this type. A one-time exemption from the requirement to perform local leak rate testing on seven RHR relief valves is requested.

The existing design does not allow local leak rate testing of these valves. A design change to permit local testing of these valves will be implemented at the first refueling outage. Changes to facilitate such testing at the present time would have an adverse impact on system turnover and plant startup.

Exemption from initial local leak testing of these valves is justified since they will be exposed to containment pressure during the initial ILRT and because of the substantial containment isolation barriers provided by the design of the relief valves and the RHR system:

- The relief valves are maintained normally closed by their springs.

- The relief valves are oriented such that containment pressure would tend to seat the valve disc and enhance sealing.

- The relief valves are not exposed to the primary containment atmosphere because the lines terminate below the minimum water level of the suppression pool.

- The lines outside containment are part of a closed system which is missle protected, Seismic Category I, quality group B, and designed to the temperature and pressure conditions that the system will encounter.

- System leakage will be minimized in accordance with NUREG-0737, Item III.D.1.1.

- Any leakage out of the system will be into the reactor enclosure, thus facilitating collection and treatment.

As a result, it can be concluded that there is reasonable assurance against undue RHR relief valve leakage provided under the exemption and that no material increase in the probability or extent of relief valve leakage is to be expected. Therefore, there is no significant increase in the probability of higher post-accident offsite or onsite doses related to the exemption and therefore no significant increase in environmental impact beyond that experienced with no exemption.

III. <u>The Requested Exemptions Will Not Endanger the Common Defense and Security</u>

The common defense and security are not implicated in this exemption request. Only the potential impact on public health and safety is at issue.

IV. The Requested Exemptions are in the Public Interest

The requested exemptions are in the public interest in that any delay in commencement of low power testing and power ascension would cause a delay in the attainment of commercial operation and since, as shown above, the health and safety of the public will be adequately protected.

Limerick Unit 1 is physically complete in all essential respects and is ready for low power testing and ascension to full power. Upon satisfactory completion of the power ascension testing program in accordance with the license and technical specifications, the facility will be placed in commercial operation.

If literal compliance with the applicable provisions of Appendix J discussed in Section II above were mandated, either cumbersome and unwarranted methods would be used or major design changes would be required. If design changes were undertaken, a corresponding delay in the operation of Limerick Unit 1 would be occasioned at this stage. Any delay in the operation of Limerick Generating Station Unit 1 would cause the cost of the unit to increase. Under standard ratemaking practices, these costs would eventually have to be borne by the ratepayers.

Denial of the requested exemptions would have a substantial financial impact on PECo and its customers and is not warranted inasmuch as, as shown above, the public health and safety are adequately protected.

DRH/cmv/08108403

1 Order, Long Island Lighting Company (Shoreham Nuclear Power Station, Unit 1), CLI-84-8, May 6, 1984.

2 Staff Requirements Memorandum MB40725A, July 27, 1984.

3 See: U.S. vs. Allegheny-Ludlum Steel Corp., 406 U.S. 742, 755 (1972)