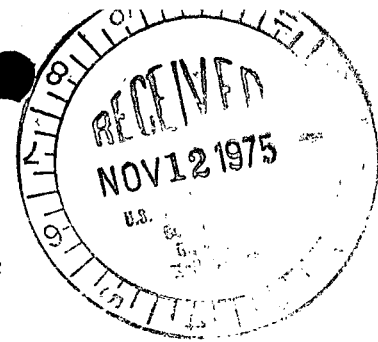


William J. Cahill, Jr.  
Vice President

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4 Irving Place, New York, N Y 10003  
Telephone (212) 460-3819

Regulatory

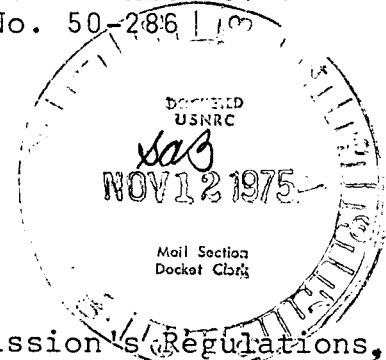
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November 7, 1975

Re Indian Point Unit No. 3  
Docket No. 50-286

Mr. Ben C. Rusche, Director  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555



Dear Mr. Rusche

Pursuant to 10CFR 50.12(a) of the Commission's Regulations, Consolidated Edison Company of New York, Inc. ("Con Edison") herewith requests exemption from certain requirements of Appendix J to 10CFR50 relating to reduced pressure leak testing of the Indian Point Unit No. 3 containment. In support of this request, Con Edison states as follows:

In accordance with Appendix J to 10CFR50, both a peak and a reduced pressure pre-operational integrated leak rate test of the Indian Point Unit No. 3 containment were performed. The results of these tests were presented in a report entitled "Preoperational Integrated Leak Rate Test of the Reactor Containment Building; Consolidated Edison Corporation; Indian Point Unit No. 3" dated March 19, 1975. The report was submitted to the Commission on March 27, 1975, followed by a submittal dated May 12, 1975 containing revised pages for the report.

The results of the pre-operational peak pressure test have been accepted by the Regulatory Staff. These results demonstrate the leak-tightness of the containment. There is, however, a difference of opinion between the Regulatory Staff and Con Edison regarding the acceptability of the reduced pressure test results.

It is Con Edison's contention that the acceptance criteria for the reduced pressure test as presently formulated and interpreted by the Commission contain analytical anomalies which, under certain conditions, render it impossible for a facility to pass this test. These anomalies are as follows:

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Appendix J Para. III A.3.c. states that "test leakage rates shall be calculated using absolute values corrected for instrument error". This interpreted by the Commission as adding root-mean-square instrument error to the average of the absolute measured leakage rate values. That is,

$$L_{TM} \text{ (corrected)} = L_{TM} \text{ (absolute)} + e_i \quad (1)$$

where:  $L_{TM} \text{ (absolute)} = \sum \frac{L_{TI}}{N}$

$L_{TI}$  = absolute individual period measured leak rate adjusted to % mass leak per day

$N$  = number of periods

$e_i$  = instrument repeatability error (taken only as positive)

Appendix J Para. III.A.4.a.1.iii states that specified leak rate  $L_T$  at reduced pressure  $P_T$  is:

$$L_T = \frac{L_{TM}}{L_{AM}} \times L_A \quad (2)$$

where:  $L_{TM}$  = Absolute value of measured leakage rate at reduced pressure ( $P_T$ )

$L_{AM}$  = Absolute value of measured leakage rate at DBA pressure ( $P_A$ )

$L_A$  = Specified leakage rate limit at  $P_A$

If the containment is very tight, then, within statistical probability, the measured leak rate at reduced pressure may be zero. ( $L_{TM} = 0$ ). Under those conditions from Equation (2)  $L_T$  will also be zero.

From Equation (1)

$$\begin{aligned} L_{TM} \text{ (corr)} &= L_{TM} \text{ (absolute)} + e_i \\ &= 0 + e_i \\ &= e_i \end{aligned}$$

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Paragraph III.A.4.b.1 of the acceptance criteria states:  
"Reduced Pressure Tests. The leakage rate  $L_{TM}$  shall be less than  $0.75 L_T$ ".

Since under these conditions,  $L_T = 0$  and  $L_{TM}$  (corr.) =  $e_i$  which cannot be zero, then

$$L_{TM} \text{ (corrected)} > 0.75 \times L_T$$

which implies that the acceptance criterion has not been met.

The Commission has also taken a position regarding the acceptable statistical spread of the test data: namely that the upper limit of the 95% confidence interval of the "t" distribution about the mean of the absolute values of measured leakage rate ( $L_{TM}$ ) shall be less than the specified leakage rate at reduced pressure ( $L_T$ ). This additional acceptance criterion does not appear in Appendix J or even a Regulatory Guide and contains analytical anomalies similar to those in the aforementioned criterion. That is, under the conditions where  $L_{TM}$  (absolute) = 0 and  $L_T = 0$ ,

$$L_{TM} \text{ (absolute)} + t \text{ deviation } (.95) > L_T$$

as t deviation (.95) must be greater than zero. Hence, this again implies failure to meet the acceptance criteria under the postulated conditions.

In summary, when there is a very tight containment with leakage approaching zero at reduced pressure, then, due to the error correction interpretation and statistical spread analysis assumed by the Commission, the reduced pressure test will consistently fail. This will be the case even though the peak pressure test verifies the leak-tightness of the containment.

It is for this reason that Con Edison requests an exemption pursuant to 10 CFR 50.12(a) from those portions of Appendix J which relate to performance of a reduced pressure leak test: namely, paragraphs III A.4(a)(1), III A.4.(b)(1), III A.5(a)(1), and III A.5(b)(1). It is our belief that the successful performance of the pre-operational peak pressure leak test verifies the acceptability of the Indian Point Unit No. 3 containment, and that the purpose of the Appendix J has been satisfied through the demonstration of the containment's leak tightness.

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It is also our understanding that the requirement for pre-operational testing at reduced pressure was based on the licensee's option to perform subsequent periodic leak tests at reduced pressure rather than peak pressure. In light of the above-stated anomalies in the acceptance criteria for the reduced pressure test, Con Edison desires to conduct future periodic leak tests at peak pressure. The elimination of the reduced pressure will not endanger life or property or the common defense and security and is otherwise in the public interest. It is further requested that the Technical Specifications for Indian Point Unit No. 3, when issued, reflect this exemption.

Very truly yours



mrB

William J. Cahill, Jr.  
Vice President

Sworn to before me  
this 10<sup>th</sup> day of  
November, 1975.

  
\_\_\_\_\_  
Notary Public

**ANGELA ROBERTI**  
Notary Public, State of New York  
No. 03-8593813  
Qualified in Bronx County  
Commission Expires March 30, 1976