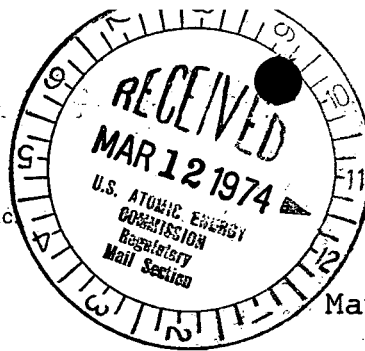


William J. Cahill, Jr.
Vice President

Regulatory

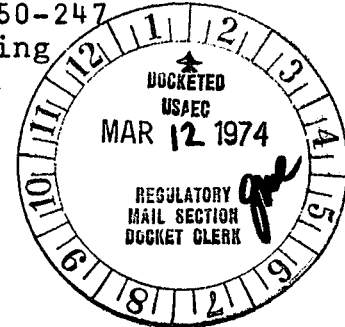
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Consolidated Edison Company of New York, Inc.
4 Irving Place, New York, N Y 10003
Telephone (212) 460-3819



March 12, 1974

Re: Indian Point Unit No. 2
AEC Docket No. 50-247
Facility Operating
License DPR-26



Mr. John F. O'Leary, Director
Directorate of Licensing
U. S. Atomic Energy Commission
Washington, D. C. 20545

Dear Mr. O'Leary:

On January 14, 1974, Con Edison transmitted to the AEC a report describing a feedwater pipe break incident which occurred at Indian Point Unit No. 2 on November 13, 1973. In that report two special tests were described which Con Edison had performed to verify the containment liner integrity following slight bulging which resulted from the feedwater incident.

At a meeting with the Regulatory Staff on January 14, Con Edison reported results of the special leakage test. The leakage was determined to be approximately 0.029% per day of the containment free volume. This result was well within both the design leakage limit of 0.1% per day and the more restrictive criterion for this test of 0.04% per day.

During this meeting and subsequent telecons on January 16 (C. W. Jackson of Con Edison and R. Schemel and R. Woodruff of the Regulatory Staff) several questions were raised by the Regulatory Staff concerning the analysis of the test data. The principal concern was that leakage from the weld channel and containment penetration pressurization system (WCPPS) could be into and/or out of containment. The Regulatory Staff asked if a determination could be made as to the relative leakage from the WCPPS into versus out of containment to enable a conclusion that the analysis performed by Con Edison of the test data was valid.

On January 17, 1974, Con Edison performed a third special leakage test with the WCPPS which was described to the Regulatory Staff in a telecon on that day (C. W. Jackson of Con Edison to R. Woodruff of the Regulatory Staff). The results of this test when analyzed in conjunction with the results of the first two tests yielded a leak rate of 0.034% per day. This analysis of the containment liner leakage rate necessitated including the potential leakage from the WCPPS and containment in the area of the air-lock doors since the sub-system isolation valves

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Mr. John F. O'Leary

-2-

March 12, 1974

Re: Indian Point Unit No. 2
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were not accessible during the first two tests to enable energizing this sub-system of WCPPS.

Attachment 1 to this letter shows a schematic representation of the containment WCPPS and potential leak paths. In addition, this attachment presents the specific test parameters and results. Attachment 2 to this letter presents the analysis of the three tests which demonstrated that the leakage through the liner (including leakage through the air-locks) was no more than 0.034% per day. Material contained in these two attachments was given to the Regulatory Staff on January 18, 1974 in a telecon and via facsimile transmission (C. W. Jackson of Con Edison to R. Woodruff of Regulatory Staff).

As a result of the special liner leakage test and other tests and analysis performed on the containment liner, Con Edison concludes that the effects of the feedwater incident which occurred on November 13, 1973 did not impair the ability of the containment liner to perform its function and that the original acceptance criteria for containment leakage are still satisfied.

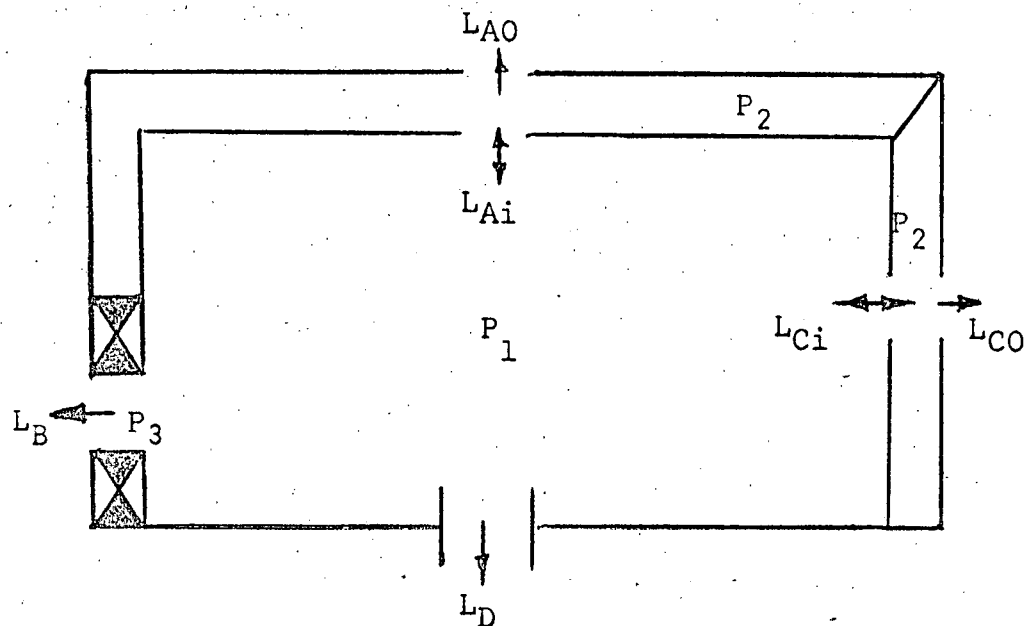
Very truly yours,



William J. Cahill, Jr.
Vice President

enc.
ljc

Copy to James P. O'Reilly, Director
Region I
Directorate of Regulatory Operations
U. S. Atomic Energy Commission
631 Park Avenue
King of Prussia, Penna. 19406



L_A = Penetration Leakage

L_{AO} = Out

L_{Ai} = In

L_B = Air Lock Leakage

L_C = Liner Weld Leakage

L_{CO} = Out

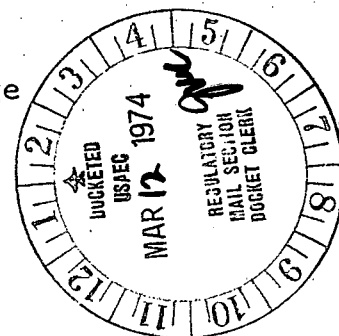
L_{Ci} = In

L_D = Liner Membrane Leakage

P₁ = Pressure Inside Containment

P₂ = Pressure in the WCPPS

P₃ = Pressure in the WCPPS to the Airlocks



Attachment 1

Test No. 1 P₁ = 47 psig P₂ = 0 psig P₃ = 0 psig WCPPS Valved Off

L_T (Measured Total Leakage) = 19.5 lbs/hr = L_A + L_B + L_C + L_D where L_A = L_{Ai} or L_{AO}

Whichever
is Lower

L_T = .057%/Day

L_C = L_{Ci} or L_{CO}
Whichever
is Lower

Test No. 2 P₁ = 47 psig P₂ = 46 psig P₃ = 0

WCPPS Valved Off to Air Locks

∴ L_{Ai} ≈ 0 L_{Ci} ≈ 0 L_{AO} + L_{CO} = 9.08 lbs/hr

Check by Zones L_{AO} = 7.86 lbs/hr
L_{CO} = 1.21 lbs/hr 7.86 + 1.21 = 9.07 lbs/hr

Test No. 3 P₁ = 0 psig P₂ = 46 psig P₃ = 0 psig

WCPPS Valved Off to Air Locks

L_{Ai} + L_{AO} = 21.12 lbs/hr L_{Ci} + L_{CO} = 1.26 lbs/hr

Attachment 2

Leakage Through Penetrations

$$L_{Ai} + L_{AO} = 21.12 \text{ lbs/hr from Test No. 3}$$

$$L_{AO} = 7.86 \text{ lbs/hr from Test No. 2}$$

$$L_{Ai} = \underline{13.26 \text{ lbs/hr}} \therefore L_{AO} < L_{Ai}$$

$$\text{and } L_A = L_{AO} = 7.86 \text{ lbs/hr} = .023\%/day$$

Leakage Through Liner Welds and Weld Channel Over Welds

$$L_{Ci} + L_{CO} = 1.26 \text{ lbs/hr from Test No. 3}$$

$$L_{CO} = 1.21 \text{ lbs/hr from Test No. 2}$$

$$L_{Ci} = 0.05 \text{ lbs/hr} \therefore L_{Ci} < L_{CO}$$

$$\text{and } L_C = L_{Ci} = .05 \text{ lbs/hr} = .0002\%/day \\ \approx 0$$

$$L_T = L_A + L_B + L_C + L_D$$

$$L_T = L_{AO} + L_B + L_{Ci} + L_D$$

$$L_D + L_{Ci} = L_T - L_{AO} - L_B = .057\%/day - .023\%/day - L_B = .034\%/day - L_B$$

Leakage through liner membrane + leakage through liner welds and weld channel over welds = .034%/day less the leakage through the air locks

Leakage through liner membrane + leakage through liner welds and weld channel over welds < 0.04%/day