

John D. O'Toole  
Vice President

Consolidated Edison Company of New York, Inc.  
4 Irving Place, New York, NY 10003  
Telephone (212) 460-2533

November 30, 1984

Re: Indian Point Unit No. 2  
Docket No. 50-247

Dr. Thomas E. Murley, Regional Administrator  
Region I  
U.S. Nuclear Regulatory Commission  
631 Park Avenue  
King of Prussia, Pa. 19406

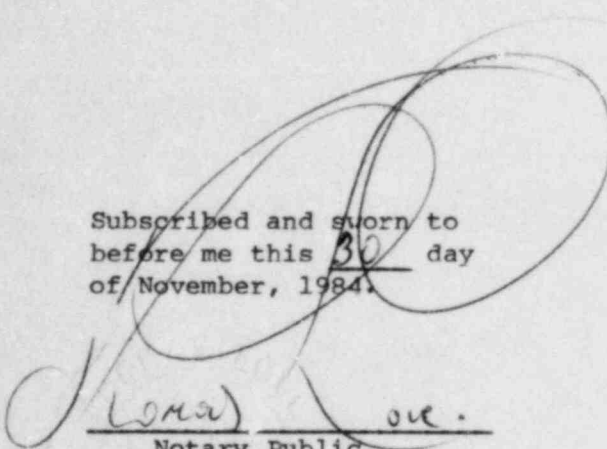
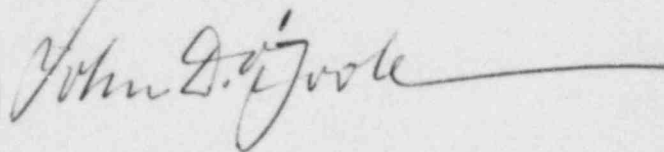
Dear Dr. Murley:

Attachment A to this letter contains our response to IE Bulletin No. 84-03 "Refueling Cavity Water Seal."

This response is being provided pursuant to Section 182a of the Atomic Energy Act as amended.

Should you or your staff have any questions, please contact us.

Very truly yours,



Subscribed and sworn to  
before me this 30 day  
of November, 1984.

Thomas Love  
Notary Public  
THOMAS LOVE  
Notary Public, State of New York  
No. 31-2400638  
Qualified in New York County  
Commission Expires March 30, 1985

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cc: U. S. Nuclear Regulatory Commission  
→ Document Control Desk  
Washington, D.C. 20555

Senior Resident Inspector  
U.S. Nuclear Regulatory Commission  
P.O. Box 38  
Buchanan, New York 10511

ATTACHMENT A

Response to I.E. Bulletin No. 84-03  
Refueling Cavity Water Seal

Consolidated Edison Company of New York, Inc.  
Indian Point Unit No. 2  
Docket No. 50-247  
November 1984

#### ATTACHMENT A

Response to NRC I.E. Bulletin No. 84-03

#### Action To Be Taken By Plants Prior To Beginning Refueling Or Within 90 Days Of Receipt Of This Bulletin, Whichever Is Sooner:

2. Evaluate the potential for and consequences of a refueling cavity water seal failure and provide a summary report of these actions.

#### Response:

Prior to flooding the refueling cavity in preparation for refueling at Indian Point 2, it is necessary to install closure seals over existing openings in the refueling cavity floor. One such seal is a ring seal to close off the ventilation annulus surrounding the reactor vessel. Indian Point 2 employs an elastomeric inflatable ring manufactured by Presray Inc. for this application. This design was first installed in 1976 and is Seismic I.

To insure that the Presray seal would properly seat in the annular opening the annulus surface and edges were resurfaced, machined and cleaned to suit. Installation of the Presray seal consists of placing it in the annulus and pressing it into place. Before inflation, a heavy, flat metal annular plate is positioned on the flat top surface of the Presray seal to weight it and maintain seal stability upon inflation and subsequent cavity flooding.

At Indian Point 2, the annulus in which the Presray seal is placed is 2 1/4" in width and bounded by the reactor vessel flange and the lip of the biological shield concrete wall as shown in figure 1. Both of these structures are rigid and provide ample support for maintaining a tight seal. In contrast, the Haddam Neck annulus is of greater width, and must utilize two concentric Presray seals with a floating seal ring between. The mechanics and dynamics of the two annulus sealing designs are different.

For the Indian Point 2 Presray seal, two inflation hoses supplied from independent sources are attached to the seal 180° apart. Each inflation system is equipped with a deflation restricting orifice to maintain a minimum seal inflation pressure assuming a hypothetical severance of one hose. Continuous inflation of the seal is achieved by supplying N<sub>2</sub> at 30 psig. Although the design life of the seal is 5 years, a new seal and accessory equipment are normally used at each Indian Point 2 refueling. The system also incorporates a pressure relief valve to prevent overpressurization of the seal.



The Presray seal configuration of Indian Point 2 presents a static and dynamic seal insuring positive protection against gross cavity water leakage as experienced at Haddam Neck. During the past six refuelings, even minor leakage has not occurred at these seal interfaces. Due to the configuration of the seal cross-section and the fit of the seal in the annulus, even the loss of seal inflation-pressure will not cause the seal to dislodge from its sealing mode although some leakage may be present. When the Presray seal is in service, under a minimum height of 25 feet of water (approximately 11 psig), any gas leakage from the top would be readily observable as rising bubbles from the refueling deck.

A gas leak below the sealing junction would result in gas consumption as evidenced by a decreasing pressure on the gas supply pressure gauge. During prior seal installation a gas leak has never been observed nor has a change in the gas supply pressure occurred.

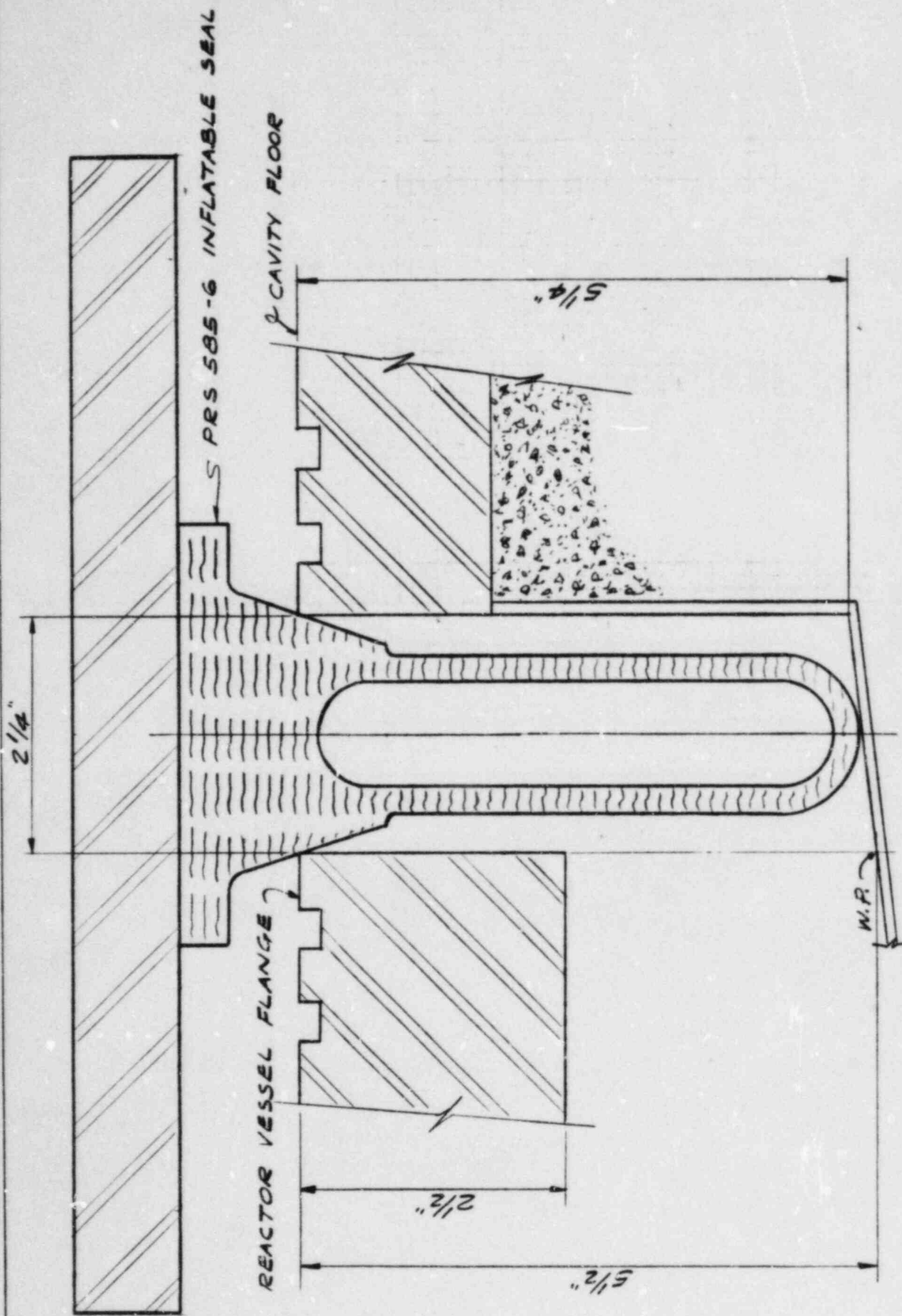
Based on the design provisions described above it is concluded that the Indian Point 2 Presray seal installation will not result in a gross leak. In the improbable event that an undersirable decrease in reactor cavity water level should occur a procedure is available to the operators. The procedure covers evacuation of personnel from Containment, placement of fuel in transit, closure of Fuel Transfer Tube valve and Spent Fuel Pit Gate and establishment of an RHR pump path from the Containment sump if a fuel assembly is in the refueling cavity. An alternate supply of water would be the Recirculation pump in the Recirculating sump. Even if the water level were to drain down to the vessel flange elevation, the spent fuel assemblies stored in the spent fuel pool would not be uncovered. Any additional drain down required to expose the spent fuel assemblies stored in the spent fuel pool is precluded by the geometric configuration and relative elevations. The spent fuel pool under this unlikely condition would have a minimum water level of 15 feet which ensures that the spent fuel assemblies remain covered.

In conclusion, based on the above information, no additional actions are necessary.

0661F

STATION

DWG. NO. **D**



REVISIONS

STATION-INDIAN POINT 2  
CAVITY SEAL RING

DRAWN BY: G. GAMBETTA CHECKED  
SCALE: NONE J.O.

CHIEF  
DESIGN  
ENG.

ENG.

ENG.

DWG. NO. **D**

RECORDED

CONSOLIDATED EDISON CO. OF N. Y., INC.