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Vice President

Regulatory File Cy.

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January 23, 1973

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

Mr. Richard C. DeYoung
Assistant Director for
Pressurized Water Reactors
Directorate of Licensing
U. S. Atomic Energy Commission
Washington, D. C. 20545

Dear Mr. DeYoung

In response to a September 26, 1972 Directorate of Licensing letter, Consolidated Edison has conducted a review of Indian Point Unit No. 3 to determine whether failure of any non-Category I (seismic) equipment could result in a condition that might potentially adversely affect the performance of safety-related equipment required for safe shutdown of the facility or to limit the consequences of an accident. The equipment in the Indian Point Unit No. 3 plant is categorized into three seismic classifications, Class I, Class II and Class III, and is designed according to the seismic criteria defined in Appendix A of the FSAR. Class III equipment is not seismically designed; therefore, the investigation was concerned with the potential adverse effects on safety-related equipment caused by a failure of any Class III equipment.

The review consisted of determining the Class III lines in the Diesel Generator Building, Vapor Containment, Fuel Handling Building, Service Water Pump Area, Control Building, Turbine Hall, Primary Auxiliary Building and the Auxiliary Boiler Feed Pump Room and assessing the flooding potential from each line. This was accomplished by identifying the Class III systems and portions of systems and tracing them through drawings for location and arrangement in the plant. It was determined from the review that failure of Class III equipment would not potentially adversely affect the performance of safety-related equipment in the following buildings: Diesel Generator Building, Vapor Containment, Fuel Handling Building, Service Water Pump Area and the Turbine Hall.

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The Indian Point Unit No. 3 portion of the fire protection system, although classified as a Class I system, was investigated for the effect of inadvertent actuation in the Diesel Generator Building. Two 500 gpm sump pumps provided in this building are sized to accept water from the fire protection system or from rupture of the diesel engine cooling water system. These pumps are controlled by independent float switch assemblies, each set at a different elevation to start the pumps in sequence. In case of a rupture of the service water pipe supplying water to the diesel engine cooling system, 24" drain lines collect water from the Diesel Generator Building and discharge into the river. In view of the above, performance of the Diesel Generators would not be adversely affected by actuation of the fire protection system or rupture of the service water piping.

Essentially all equipment in containment is Class I. Flooding in containment would be indicated within a few minutes by various methods, including humidity detectors and sump level sensors. A description of the leak detection systems is provided in Section 6.7.1, "Leakage Detection Systems", of the FSAR.

A portion of the spent fuel cooling loop in the Fuel Handling Building is classified as Class III. The largest source of water in this building is the storage pool. The spent fuel storage pool cooling connections enter near the water level at the top of the pool so that it is physically impossible to drain the pool with this system.

The Service Water Pump Area is not enclosed in a building and the piping is underground. Flooding water from Class III equipment would flow down to the river without damage to the service water equipment.

No safety-related equipment is located in the Turbine Hall. However, flooding from the Turbine Hall could potentially affect the performance of the 480 volt switchgear located in the Control Building at Elevation 15', only if the water reached the elevation of 15'6". Since the Circulating Water System is an open system having absolutely no valves, and therefore no means of producing a high dynamic head, the probability of a failure is practically zero. However, to assure that the 480 volt switchgear would not be adversely affected from flooding, redundant level alarm switches will

be installed in the pipe tunnel at Elevation 3'3" of the Turbine Hall. These switches will sense high water in the pipe tunnel and give an indication in the Central Control Room. The operators will then have at least four minutes to investigate the problem and take appropriate action by shutting down the circulating pumps to prevent flooding to Elevation 15'6".

Inadvertent actuation of the fire protection system in the electrical tunnels will not potentially adversely affect the performance of safety-related equipment in the Control Building. The electrical tunnels are provided with floor drains to handle water from the cable tray fire protection spray system. These drains discharge to grade outside the tunnel.

The Primary Auxiliary Building is so designed that flooding from any elevation will result in the water settling at the lowest level (Elevation 15') as each room has various floor penetrations which permit drainage to this elevation. In addition, the stairways provide substantial flow area. Performance of the two (2) Residual Heat Removal Pumps located at the 15' elevation of the Primary Auxiliary Building would be affected by flooding only if the water reached an elevation of 19'. Approximately 120,000 gallons of water would be required to cause flooding to this elevation. The combined volume, approximately 2,800 gallons, of all non-Class I tanks in the Primary Auxiliary Building would cause negligible flooding if they failed. There are several Class III lines in the Primary Auxiliary Building that have sufficient capacity to cause flooding of the Residual Heat Removal Pumps. However, the Class III line in the Primary Auxiliary Building with the largest nominal flow rate would take approximately 6½ hours to flood to the Elevation 19'. Although it is evident from the above that operators would have sufficient time to discover that a failure has occurred and take appropriate actions to prevent flooding to the 19' elevation in the Primary Auxiliary Building, modifications will be made to assure that there is adequate drainage area to preclude flooding of the Residual Heat Removal Pumps in the unlikely event that the flooding is not discovered.

Evaluation of the Auxiliary Boiler Feed Pump Area, located between containment and the shield wall, reveals that safety-related equipment would not be affected by failure of the Class III portion of the main steam system. Failure of the main feedwater lines, located above and outside of the Auxiliary Boiler Feed

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Pump Room, would result in water accumulating at the 18'6" elevation. Performance of the Auxiliary Boiler Feed Pumps would be potentially adversely affected only if the water reached Elevation 19'8" in the Auxiliary Boiler Feed Pump Room. Modifications will be made to assure adequate drainage under the worst postulated conditions of main feedwater line failure.

Installation of the level alarm switches in the Turbine Hall and the modifications in the Primary Auxiliary Building and the Auxiliary Boiler Feed Pump Area will be made during the normal course of construction of the plant. It is difficult at this time to give a definite installation date as the schedule is contingent upon the completion of other construction.

Also included in the review was the potential effect of chemical releases on safety-related equipment. It was determined that chemical releases caused by failure of Class III equipment would have no potential adverse effect on safety-related equipment.

Very truly yours

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Vice President

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