John D. O'Toole
Vice President

Consolidated Edison Company of New York, Inc.
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June 9, 1983

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

Director of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washingtion, D. C. 20555

ATTN: Mr. Steven A. Varga, Chief
Operating Reactors Branch No. 1
Division of Licensing

Dear Mr. Varga:

This letter is in response to your letter dated May 2, 1983, regarding Clarification of Environmental Qualification SER. As directed, we have reviewed our thirty day response which was submitted to the NRC on February 5, 1983. We have determined that the Justifications for Continued Operation contained in that response as well as those referred to that were previously provided are still applicable for the individual items of equipment that were addressed.

In addition, Enclosure 1 to this letter contains additional Justifications for Continued Operation for specific items of equipment. This equipment was included in section 4 of our May 20, 1983 response to the new Environmental Qualification Rule, 10 CFR 50.49.

Very truly yours,

Donald A. Downey for John O'Toole

John D. O'Toole
Vice President

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ENCLOSURE 1

JUSTIFICATION FOR CONTINUED OPERATION

EQUIPMENT FOR WHICH QUALIFICATION HAS NOT BEEN FULLY ESTABLISHED

CONSOLIDATED EDISON COMPANY
INIDAN POINT UNIT NO. 2
DOCKET NO. 50-247
June 1983

Equipment Type:	Acoustic Monitor components (Charge Converters, Cable assembly)
Manufacturer:	TEC Model 501 Charge Converters (Preamplifier) and TEC2273-C1 Cable Assembly
Function:	PORV Relief Valve position indication
Location:	Containment

Discussion: A TEC acoustic monitoring system was installed in accordance with TMI action plan requirements to provide positive indication of relief valve position (closure). Testing reported in TEC report 517-TR-03 identified problems with the charge converter (preamplifier) and a teflon cable assembly. The testing was conducted at pressures more than twice the Indian Point worst case accident pressure and temperatures 175°F higher than the Indian Point worst case accident temperature.

Qualification Deficiency: Testing equivalent to Indian Point Unit No. 2 conditions.

Justification for Continued Operation

In addition to the acoustic monitor system, qualified NAMCO EA 180 limit switches have been installed on the PORV's which provide positive indication of valve closure.

Regarding the acoustic monitor, the accident it is intended to address, involves a PORV (stuck in the open position). The PORV is not required for a large break LOCA because it would not be operated for a large break LOCA. The PORV can be used to reduce Reactor Coolant System pressure for small break LOCA's that would not depressurize the System to RHR pump discharge pressure; the PORV can also be used for MSLB inside containment (which is enveloped by the LOCA profile) and for a steam generator tube rupture which does not result in any harsh environment for the acoustic monitors. The above accidents do not produce radiation levels which would degrade the teflon cable insulation.

It is obvious that the testing conducted by TEC was a significant overtest for the Indian Point accident conditions. Even with the overtest, the equipment performed satisfactorily for the first transient. Failures occurred during the second transient due to long term exposures to temperatures which exceeded the limits of the materials used. Even in the severe second transient one of the channels still performed adequately.

The Indian Point accident conditions (temperature, pressure and time) would not exceed the temperature limits for the materials that failed due to overheating in the TEC overtest. Accordingly it is concluded that the acoustic monitor system will function properly at Indian Point Unit 2 and continued operation is justified in the interim.

Final Resolution

The Charge Converter and Cable Assembly will be replaced with qualified equipment. Qualification documentation and replacement will be achieved prior to March 31, 1985.

Equipment Type: Electrical Cable

Manufacturer: Harbour Industries, Silicone Rubber

Function: Electric power, control and instrumentation for TMI electrical equipment

Location: Containment

Discussion: This cable was purchased in accordance with specifications for inside containment applications at Indian Point Unit No. 2 and has been installed in power, control and instrumentation application associated with some TMI action plan equipment. The manufacturer, however, has not provided test documentation.

Qualification Deficiency: Lack of documentation.

Justification for Continued Operation:

The installed cable is insulated and jacketed with Silicone rubber. Silicone rubber cables tested by several manufacturers and independent test laboratories have shown radiation, steam and chemical spray resistance equal to or superior to any of the other cable insulation and jacket materials used in nuclear power plant safety-related applications. Silicone rubber is also highly resistant to thermal aging. Cables of similar size (conductor size, insulation and jacket thickness and number of conductors) and basic material composition were tested and documented by Rockbestos (Firewall SR), Lewis Engineering, Anaconda Corporation, General Electric Company, and General Cable Corporation. Tests by Independent laboratories (Franklin Institute and Wyle Labs) were also conducted on cables from the above listed manufacturers. All testing conducted showed satisfactory results. Because of the similarity of the installed cable (Harbour Industries) to cables that have been successfully qualified, it is expected that the installed cable will perform satisfactorily.

Therefore continued operation is justified.

Final Resolution: Qualification testing of the Harbour Industries cable which will envelope the Indian Point Unit No. 2 accident and post-accident conditions will be conducted to establish qualification. Testing will be completed prior to March 31, 1985.

Equipment Type: High Range Radiation Monitor Components (Cable/Connector Assembly)

Manufacturer: Victoreen Model 878-1

Function: Radiation monitoring for accident conditions

Location: Containment

Discussion: A Victoreen High range radiation monitoring system (Model 877-1 detectors and Model 878-1 Cable/Connector assembly) was installed in accordance with TMI action plan requirements for containment radiation monitoring during accident conditions. Testing was conducted and reported in Victoreen report dated June 19, 1981. As is the case with most new equipment the test parameters were significantly more severe than the Indian Point accident parameters. The temperature was 70°F higher and the pressure more than a factor of 3 higher than the Indian Point worst case accident transient conditions. The detector functioned normally throughout the test. However, due to the high pressure of the test, steam/chemical spray diffused into the connector assembly and caused spurious signals. The high pressure (133 psig) was maintained for 3 hours. The connector was covered with a heat-shrink splice and the test was satisfactorily completed.

Because the rate of diffusion of steam chemical spray into the connector assembly depends on the external pressure and the time duration over which the pressure is applied, it is expected that the connector assembly will perform satisfactorily under Indian Point accident conditions (40 psig for 15 minutes) without any infiltration of the steam/chemical spray environment. However, to provide additional margin the connectors will be covered with qualified splice tape or splice sleeving.

Final Resolution: The connectors located at the radiation monitor and at the electrical penetrations will be covered with qualified splice tape or splice sleeves prior to March 31, 1985.

Equipment Type: Electric Motor

Manufacturer: Westinghouse 509 Frame

Function: Drives Residual Heat Removal (RHR) Pump

Location: Primary Auxiliary Buliding
(RHR Pump Room)

Discussion: The RHR Pump Motors were identified as safety-related equipment requiring qualification in a letter from W.J. Cahill, Jr. (Con Edison) to S.A. Varga (NRC) dated May 9, 1980. Franklin Research Center TERC5257-200 dated April 9, 1981 stated the following concerning these motors:

> "FRC Conclusion:
>
> These equipment items are assigned to NRC Category VI because the area has been defined as nonharsh by the Licensee except for the radiation service condition that occurs during the long-term cooldown phase. Because these equipment items are located in a mild area for the accident they are to mitigate or are needed for cold shutdown, they are deferred in accordance with Sections 2.2.3 and 2.2.5. The Licensee should establish traceability of the motors to previously tested motors and should address the equipment's qualified life and aging mechanisms."

The RHR pump motors were not addressed in Franklin Research Center TER-458 dated June 11, 1982.

It should be noted that the RHR pumps are not only used for long term cooling but are also used for accident mitigation during the recirculation phase.

Qualification Deficiency: Traceability to test documentation and establishment of a qualified life.

Justification for Continued Operation: As noted by FRC, the only harsh parameter in the RHR pump room is radiation caused by

recirculation of radioactive sump water from the containment (total integrated dose of 3.6 Mrad). Traceability to testing at 200 Mrad conducted by Westinghouse and reported in WCAP-8754 was established and certified to NRC for Indian Point Unit No. 2 by letter NS-TMA-2319 dated October 3, 1980 from T.M. Anderson (Westinghouse) to Z.R. Rosztoczy (NRC).

Independent aging analyses of the motor materials have been conducted which verify the 40 year life established in the qualification documentation (WCAP-8754).

Con Edison therefore considers that traceability and aging (qualified life) deficiencies have been resolved and that qualification of the motors has been established. We are however, evaluating the maintenance, lubrication, and periodic testing recommendations contained in WCAP-8754 and other Westinghouse Technical Documents to ensure that the Indian Point Unit No. 2 maintenance program procedures will maintain the motors in a qualified status for the life of the plant.

Therefore continued operation is justified.

Final Resolution: The plant maintenance procedures for the RHR pump motors will be evaluated against current Manufacturer's recommendations and revised (if required) prior to March 31, 1985.