



Commonwealth Edison

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May 29, 1984

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Quad Cities Station, Unit 1
Environmental Qualification
of Electrical Equipment
NRC Docket No. 50-254

References (a): October 29, 1980 letter from J. Abel
to J. Keppler.

(b): January 18, 1983 letter from D.B.
Vassallo to L.O. DelGeorge.

Dear Mr. Denton:

Commonwealth Edison Company hereby requests an extension of the schedular requirements of 10CFR50.49(g) for replacement/modification of specific equipment subject to the environmental qualification (EQ) rule. Quad Cities Unit 1 began the second refueling outage after March 31, 1982 on March 6, 1984 and is scheduled to return to service July 20, 1984. Replacement of 4 Limitorque actuator motors (MO-1-1402-24A, 24B, 25A, and 25B) and, because EQ testing is not yet complete, any potential modifications involving the Main Steam Isolation Valve (MSIV) solenoid operators (SO-1-203-1A through 1D, 2A through 2D) may not be completed by the end of the current refueling outage. This is principally due to complications and delays encountered in the test program being conducted on the solenoid operators by Wyle Laboratories and delay in Limitorque replacement motor delivery.

Because of these delays, the schedule extension requested is to provide for completion of MSIV testing and any resulting modifications and the Limitorque motor replacement by the end of the fall, 1985 refueling outage. The 1985 Quad Cities Unit 1 refueling outage is scheduled to start October 1, 1985 and, in any event will start no later than November 30, 1985.

The Company has been fully committed to completion of all Quad Cities Unit 1 EQ work by the end of the current refueling outage and maintained this stance even as the outage was underway. The substantial effort applied to the EQ Project as a whole is evidenced by the work accomplished during the current refueling outage and, more specifically to the two items for which extension is requested, by development of the MSIV qualification program and Limitorque replacement activity as provided in Attachment A1 and B1.

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Despite the Company's strong commitment to completing all EQ work during the current outage, final estimates of time required to install any MSIV solenoid manifold modifications, based on the final MSIV test program completion precludes any additional work during this outage. However, please note that the MSIV solenoids will be replaced during this outage with the new solenoids qualified life being dependent upon final completion of the qualification test presently scheduled for November 1984.

Due to the tentative nature of the scheduled delivery of the four Limitorque actuator motors and proximity to the end of the outage, installation may not be feasible before the scheduled restart of the Unit. All efforts are being made to complete this work if the equipment does arrive on schedule. However, due to the uncertainty involved we are requesting an extension to the scheduler requirements of 10 CFR 50.59 at this time.

Justification for continued operation was previously submitted by Reference (1); in response, the NRC concluded in its safety evaluation report transmitted by Reference (2) that "Continued operation until completion of the licensee's environmental qualification program has been determined to not present undue risk to the public health and safety." The justifications for continued operation are in part repeated, supplemented, and updated as Attachment A2 and B2. The Company is confident that continued operation of Quad Cities Unit 1 is justified until these required modifications can be implemented during the 1985 refueling outage.

It should be noted that our present schedule is based on the delivery of additional motor operators and electrical components in mid-June, 1984. Should problems be encountered in the delivery of these additional items, we will inform you of the delay in schedule by June 30, 1984. Based on the current outage schedule favorable response to this request is required by July 2, 1984 to prevent schedule impact.

If there are any questions regarding this matter, please contact this office.

Very truly yours,



B. Rybak
Nuclear Licensing Administrator

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cc: NRC Resident Inspector - Quad Cities
R. Bevan - NRR

8700N

Attachment A1

QUAD CITIES UNIT 1 MSIV OPERATOR
SO-1-203-1A THROUGH 1D, 2A THROUGH 2D

April 22, 1980	CECo submitted the response to I.E. Bulletin 79-01B
June 10, 1980	CECo submitted the revised response to I.E. Bulletin 79-01B
November 1, 1980	CECo submitted a revised response to I.E. Bulletin 79-01B
September 1, 1981	CECo submitted a response to the April 20, 1981 SER
July, 1982	CECo gave tentative confirmation on participation in the TVA/Wyle Test Program
March, 1983	Testing begins on the MSIV manifold assembly at Wyle
June, 1983	Following radiation exposure, all three solenoids failed to operate. Failure was determined to be due to degradation of the lubricant. Failure evaluation was performed, the test was revised, and two new solenoid assemblies were purchased and testing was restarted.
November, 1983	During thermal aging failure of one of the DC solenoid occurred as a result of a manufacturer's defect. The coil was changed out, aging time was recalculated, and aging was continued.
January, 1984	During thermal aging the other DC solenoid shorted out. The solenoid manufacturer performed a failure evaluation. Results were analyzed and thermal aging was resumed.
May, 1984	Viton seal in the 2-way valve required replacement. A second 2 way valve with EPDM seals will be included in the testing. Thermal aging on hold awaiting receipt of the second 2-way valve.

JUSTIFICATION FOR CONTINUED OPERATION
MSIV SOLENOIDS
SO-1-203-1A THROUGH 1D, 2A THROUGH 2D

Continued operation is justified for the following reasons:

- A. These components are designed as redundant pairs, each separated from the other.
- B. These components complete their function in a very short period of time and would not be significantly affected by increased environmental conditions in this period.
- C. These components undergo periodic functional testing to verify operability. This testing would identify age-related degradation.
- D. Operator action to cut the air supply to the solenoids would close the MSIVs.
- E. During a design basis accident, one of each redundant pair would not be subjected to accident environmental conditions. Therefore the accident environment conditions would not prevent isolation of the main steam lines.
- F. Replacements of viton seals and solenoids are being made in anticipation of the probable test results to establish qualification of these operators.

Attachment B1

QUAD CITIES UNIT 1 QUALIFICATION SUMMARY FOR
MO-1-1402-24A, 24B, 25A, 25B

May 5, 1983	Letters sent to Limitorque for MO-1-1402-24A, 24B and MO-1-1402-25A, 25B (actuators with motor brakes) requesting their qualification status and available modifications options.
June 10, 1983	Limitorque responded with recommendation of SB actuators as replacement or providing Dings motor brakes.
July 1, 1983	Based on Dresden experience it was determined that brakes were not required and supporting calculations were transmitted to Limitorque for their review.
September 19, 1983	Limitorque submitted a quotation for replacing motors with qualified motor only for 1402-25A, 25B and replacing whole actuators for 1402-24A, 24B.
October 5, 1983	CECo procurement issued a purchase order for replacement of MO-1-1402-24A, 24B and MO-1-1402-25A, 25B with actuators having motor brakes.
November 30, 1983	Based on Limitorque quotation of September 19, 1983, CECO procurement issued a change order for MO-1-1402-24A, 24B indicating actuators without brakes and MO-1-1402-25A, 25B as motor replacements only without brake.
February, 1984	During the status review of Limitorque purchase orders, it was noticed that Limitorque had not processed the change order and the replacement units had still been ordered with motors with unqualified brakes.
February, 1984	Limitorque confirmed that they had the correct motors on stock and they would be delivered by mid April, 1984.
April 12, 1984	Limitorque informed CECO that the actuators for motor MO-1-1402-24A, 24B and MO-1-1402-25A, 25B were identical and they could supply 1402-24A, 24B as motor replacements only.
May 2, 1984	During delivery status call to Limitorque, Limitorque informed CECO that the stock motors for 1402-24A, 24B and 1402-25A, 25B units were not environmentally qualified and that qualified motors had to be ordered from Reliance. The delivery for these motors was quoted as mid July, 1984.

Attachment B2

JUSTIFICATION FOR CONTINUED OPERATION
MOTOR OPERATORS MO-1-1402-24A,B and MO-1-1402-25A, B

- A. The source terms utilized as a basis for radiation dose calculations are extremely conservative. As a result, the calculated doses to these valves are conservative bounding values that are not expected to be reached during a realistic accident.
- B. These components undergo functional testing to verify operability. This testing would identify age-related degradation.
- C. Other equipment similar in design to this equipment has successfully been qualified for environments in excess of the calculated requirement for this equipment.
- D. These actuators require motor replacements only to eliminate unqualified motor brakes. These actuators are located in normally mild environments. Upon initiation of core spray these injection valves are required to open. Their opening will occur prior to receiving any significant accident dose. Subsequent actuator failures due to the unqualified brakes will not prevent the safety function of providing an injection path for core spray.