



Commonwealth Edison

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July 22, 1985

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

Subject: Quad Cities Station Unit 1
Supplemental Information Regarding
Extension of Technical Specification
Repair Period for RHR Pump
NRC Docket No. 50-254

Reference: Letter from J. R. Wojnarowski to H. R.
Denton dated July 11, 1985 - Request for
Exigent Technical Specification Amendment
for Quad Cities Unit 1.

Dear Mr. Denton:

In response to a request from your staff, this letter provides additional information supporting our requested 30 day extension of the Technical Specification repair period for an inoperable RHR pump. As discussed below, this letter also documents a commitment to perform additional operability surveillances on redundant Emergency Core Cooling Systems (ECCS) during the extended repair period.

The Low Pressure Coolant Injection (LPCI) mode of the RHR system is one of three independent ECCS subsystems, any one of which can maintain adequate core cooling following an intermediate or large break Loss of Coolant Accident (LOCA). Although the RHR system contains four RHR pumps, only three are required to achieve the design flow rate for LOCA mitigation. In the event of loss or degradation of the LPCI mode of RHR, either of the two independent Core Spray subsystems can maintain adequate cooling. Due to this redundancy in the available RHR pumps for LPCI operation and in the alternate low pressure cooling systems, extending the repair time for an RHR pump will not significantly impact our ability to respond to and mitigate a LOCA.

As described in the Technical Specification bases repair periods for inoperable equipment are established to ensure that the average risk during the repair period does not exceed the basic risk during normal operation. To ensure this philosophy is maintained during the extended repair period of our RHR pump, we will perform a weekly operability surveillance on both Core Spray subsystems during the period beyond the normal 30 day repair period.

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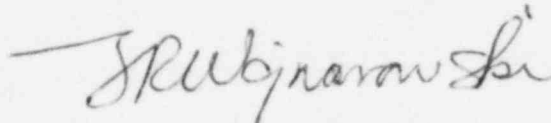
Attachment 1 provides additional discussion of the bases for establishing allowable repair periods and for utilizing additional surveillances of redundant systems during extended repairs.

In summary, we feel that the existing redundancy in RHR pumps and low pressure ECCS systems, coupled with the additional weekly Core Spray surveillance, ensures that the allowable repair period can be extended without increasing risk or degrading the margin of safety.

Please direct any questions you may have concerning this matter to this office.

Three (3) signed originals and thirty-seven (37) copies of this transmittal and its attachments are provided for your use.

Very truly yours,



J. R. Wojnarowski
Nuclear Licensing Administrator

lm

Attachment (1): Supplemental Information on Allowable
Repair Periods.

cc: Region III Inspector - QC
R. Bevan - NRR
M. C. Parker - State of IL

SUBSCRIBED AND SWORN to
before me this 22nd day
of July, 1985


Notary Public

ATTACHMENT 1

SUPPLEMENTAL INFORMATION ON ALLOWABLE REPAIR PERIODS

Reference: I. M. Jacobs and P. W. Marriott, GE Topical Report
APED 5736, "Guidelines for Determining Safe Test
Intervals for Repair Times for Engineered Safeguards,"
April 1969.

The determination of allowable repair periods for ECCS equipment is discussed in the Technical Specification bases (Section 3.5) and is based on the methodology described in the above reference. Equipment repair times are established to ensure that the average risk during repair would be no greater than the basic risk during normal operation with all systems operable. The Quad Cities Unit 1 Technical Specifications bases indicate an allowable average repair time of 30 days for loss of the LPCI mode of the RHR or the Core Spray subsystems utilizing the referenced methodology. The body of the Technical Specification conservatively establish a 7 day repair period and further require daily surveillance of the remaining low pressure ECCS subsystems.

The allowable repair period for a single RHR pump should logically be greater than that for repair of an inoperable subsystem since the LPCI mode of RHR remains fully operable and meets its design basis with the three remaining pumps. This would indicate an allowable RHR pump repair period in excess of 30 days using the referenced methods. On this basis, a reasonable extension of the Technical Specification 30 day repair period for an RHR pump will not significantly increase the risk beyond the basic risk, particularly since daily surveillance of the remaining three RHR pumps is performed.

The reference explicitly addresses extension of allowable equipment repair periods and indicates that the average risk for repair can be maintained less than the basic risk by performing additional operability surveillances on the redundant ECCS subsystems. Table 2.3 and Example 3 of the reference indicate that an indefinite repair period can be justified for loss of an entire redundant system (for the case where three systems are normally available) by performing operability surveillances on the remaining systems every 126 hours. For Quad Cities Unit 1, we will perform operability surveillances on both Core Spray subsystems weekly during the extended repair period for the RHR pump. Since the LPCI and both Core Spray subsystems are operable and we're performing daily surveillance on the three operable RHR pumps, the additional weekly Core Spray surveillance will ensure that there is no increase in risk during the extended RHR pump repair period.