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October 25, 2001

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Quad Cities Nuclear Power Station, Units 1 and 2
Facility Operating License Nos. DPR-29 and DPR-30
NRC Docket Nos. 50-254 and 50-265

Subject: Response to Request for Additional Information Regarding Request for Technical Specifications Change, Reactor Protection System Instrumentation Scram Discharge Volume Water Level - High

Reference: Letter from R.M. Krich (Exelon Generation Company, LLC) to U.S. NRC, "Request for Technical Specifications Change Reactor Protection System Instrumentation Scram Discharge Volume Water Level - High," dated July 6, 2001

In the reference letter, Exelon Generation Company (EGC), LLC, requested a change to the Quad Cities Nuclear Power Station Technical Specifications (TS). Specifically, the requested change was for TS Section 3.3.1.1, "Reactor Protection System Instrumentation." The proposed change modified the description for Reactor Protection System (RPS) Function 7.a, "Scram Discharge Volume Water Level – High" resulting from a planned instrumentation upgrade.

In an October 3, 2001, telephone conversation between S. Bailey of the NRC and J. Dubon, EGC, the NRC requested additional information regarding the improved reliability of the upgraded instrumentation. In Attachment A to the reference letter, we stated that the upgraded instrumentation (i.e., float switches) is more reliable in the detection of water level changes within the scram discharge volume than the existing thermal type level switches. The attachment to this letter provides the requested information.

A001

Should you have any questions concerning this letter, please contact Mr. Wally Beck at (309) 227-2800.

Respectfully,

K. A. Ainger

K.A. Ainger
Director – Licensing
Mid-West Regional Operating Group

Attachments Affidavit
Additional Information Regarding Reliability of Instrumentation

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Quad Cities Nuclear Power Station

STATE OF ILLINOIS	)	
COUNTY OF DUPAGE	)	
IN THE MATTER OF	)	
EXELON GENERATION COMPANY, LLC	)	**Docket Numbers**
QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2	)	**50-254 AND 50-265**

SUBJECT: Response to Request for Additional Information Regarding Request for Technical Specifications Change, Reactor Protection System Instrumentation Scram Discharge Volume Water Level - High

AFFIDAVIT

I affirm that the content of this transmittal is true and correct to the best of my knowledge, information and belief.

K. A. Ainger
Director – Licensing
Mid-West Regional Operating Group

Subscribed and sworn to before me, a Notary Public in and for the State above named, this 25th day of October, 2001.

Betty Fox
Notary Public

OFFICIAL SEAL
BETTY FOX
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES:05/14/05

Attachment

Additional Information Regarding Reliability of Instrumentation

The existing Scram Discharge Volume (SDV) – High Level trip function is provided by Fluid Components International (FCI) thermal type level switches. The sensor of each switch is mounted directly in the Scram Discharge Instrument Volume (SDIV) and is comprised of a pair of Resistance Temperature Detectors (RTD), one heated and one unheated. When covered with water, the temperatures and RTD outputs will approach the same value. These signals are compared via a bridge circuit and a trip signal is generated when the appropriate setpoint is reached. The setpoint currently used corresponds to a 4-second delay from the time of immersion. This delay is provided to desensitize the instrument loop to transient type conditions in the SDIV (e.g., splashing, moisture/steam intrusion, etc.). The current setpoint incorporates the maximum delay that ensures that the SDV is not full at the end of the time delay. Thus, sufficient free volume remains within the SDV to provide rod insertion capability. Quad Cities Nuclear Power Station (QCNPS) has experienced spurious half and full scrams because this delay is inadequate to fully desensitize the instrument to low quality steam flow.

The proposed replacement instrumentation consists of a float attached to a vertical shaft which magnetically actuates a switch on a high level condition. The application of buoyancy principles to level measurement and control represents one of the oldest and simplest operating systems in the nuclear industry. The simplicity of these replacement instruments makes them inherently reliable and provides consistently repeatable setpoints. The proposed replacement instruments mount in an external configuration that eliminates sensitivity to transient conditions in the SDIV and thus eliminates spurious half or full scrams. The new assemblies will be mounted to actuate at the same level as the existing FCI sensors. Since there is essentially no time delay involved with the new assemblies, the scram signal will be received 4 seconds earlier. This is considered a benefit that will enhance response time.

Historically, throughout the nuclear industry, these instruments have proven to be reliable in that they require low maintenance and have experienced little to no functional failures. Particularly, in similar installations at QCNPS (Contaminated Condensate Storage Tank Level and Torus Level) as well for Dresden Nuclear Power Station and LaSalle County Station SDIVs, these same level switches are being used with an equivalent good record of performance and reliability. A search of Operating Experience (OPEX) records did not identify any instances in which spurious half or full scrams occurred at these units. The QCNPS float switch history identified only one minor maintenance order on a float switch in approximately eight years of surveillance and maintenance history for the eight switches installed at QCNPS.

Therefore, based on the proven performance record, absence of significant component failure history from OPEX records, and low to insignificant maintenance occurrences, we consider that the float switches offer improved reliability when compared to the thermal switches.