

Exelon Generation  
4300 Winfield Road  
Warrenville, IL 60555

www.exeloncorp.com

RS-02-026

February 6, 2002

Mr. James Dyer  
Regional Administrator – NRC Region III  
801 Warrenville Road  
Lisle, IL 60532-4351

Dresden Nuclear Power Station, Units 2 and 3  
Facility Operating License Nos. DPR-19 and DRP-25  
NRC Docket Nos. 50-237 and 50-249

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:** Update Concerning Jet Pump Hold Down Beam Activities at Dresden Nuclear Power Station, Units 2 and 3 and Quad Cities Nuclear Power Station, Units 1 and 2

**Reference:** Letter from J. A. Benjamin (Exelon Generation Company) to J. Dyer (U. S. NRC), "Communications with the NRC Regarding the Quad Cities Nuclear Power Station, Unit 1 Jet Pump Hold Down Beam Replacement Activities and Continued Operation of Quad Cities Nuclear Power Station, Unit 2 and Dresden Nuclear Power Station, Units 2 and 3," dated January 18, 2002

In the referenced letter, Exelon Generation Company (EGC), LLC, informed the NRC of our jet pump hold down beam (beam) repair/replacement actions at Quad Cities Nuclear Power Station (QCNPS) Unit 1 and summarized the bases of jet pump operability determinations for QCNPS Unit 2 and Dresden Nuclear Power Station (DNPS) Units 2 and 3. The reference letter also described our intent to keep the NRC informed of future actions as the related laboratory analyses are completed to support the root cause determination. The purpose of this letter is to provide an update on jet pump beam activities completed and planned since the referenced letter.

QCNPS has replaced all of the original design beams in Unit 1 with redesigned beams. The redesigned beams are less susceptible to intergranular stress corrosion cracking (IGSCC). In addition, all of the original design beams on QCNPS Unit 2 will be examined and replaced during the upcoming Unit 2 refueling outage, currently scheduled to begin on February 12, 2002. DNPS Unit 3 is currently scheduled for beam replacement prior to May 1, 2002, during a planned maintenance outage. DNPS Unit 2 beam replacement will occur during the next refueling outage in December 2003. Since assessing operability is an on-going process, we will continue to factor additional information into our conclusions and actions we have implemented or planned. In this regard, should any information change significantly, we will communicate that to you in a timely manner.

1037

February 6, 2002  
U. S. Nuclear Regulatory Commission  
Page 2

The initial operability determinations described in the referenced letter have been revised to incorporate additional evaluations and technical analyses that were performed subsequent to Revision 0. The conclusion of the initial operability determinations have not changed and they continue to support operability of the jet pumps at QCNPS Unit 2 and DNPS Units 2 and 3. In addition, although the jet pumps are operable, we have implemented prudent and conservative actions as described in the Attachment to enhance operator sensitivity and response for each of the affected Units during the interim period until the original design beams are replaced. The failure mechanism for the QCNPS Unit 1 beam has been determined to be IGSCC in the transition region of the beam. In the referenced letter, we stated that the failed beam may have had a unique initiation site in the transition region which caused the beam to develop a flaw and fail. Subsequent laboratory analysis results did not support the possibility of the failure being due to something unique to that beam. Additional laboratory analyses of the beams removed from QCNPS Unit 1 and a root cause evaluation for the beam failure are ongoing to further characterize and understand the failure mechanism. The root cause evaluation results will be forwarded to the appropriate industry groups for their use.

Should you have any questions related to this letter, please contact Mr. Keith R. Jury at (630) 657-2831.

Respectfully,



Jeffrey A. Benjamin  
Vice President - Licensing and Regulatory Affairs

Attachment

cc: Director, Office of Nuclear Reactor Regulation  
NRC Senior Resident Inspector – Dresden Nuclear Power Station  
NRC Senior Resident Inspector – Quad Cities Nuclear Power Station  
Office of Nuclear Facility Safety – Illinois Department of Nuclear Safety  
Document Control Desk

## Attachment

Although the jet pumps are operable, we have implemented prudent and conservative actions as described below to enhance operator sensitivity and response for each of the affected Units during the interim period until the original design jet pump beams are replaced.

Dresden Nuclear Power Station, Unit 3 and Quad Cities Nuclear Power Station, Unit 2  
Additional actions as specified in Revision 1 of the Operability Determinations for Condition Reports 90478 and 90738, respectively.

- a) A briefing will be provided to each operating crew to inform them of the Quad Cities Unit 1 Jet Pump event and these prudent actions. Each Operating crew will review the Jet Pump failure diagnosis, the importance of Jet Pump integrity to the design basis accident analysis (re-flooding to two-thirds core height), the need to perform a daily Jet Pump flow surveillance test, and review the Operator response actions required per plant procedures. (Complete)
- b) A key plant parameter affected by a jet pump hold-down beam failure will be continuously monitored by computer and an audible alarm will be provided for the control room operators of a significant change from steady-state conditions, total jet pump flow ( $\sim 1.0E6$  lbm/hr increase or decrease). Audible computer monitoring of these points will be controlled by procedure. (Complete)
- c) Revise the jet pump flow surveillance procedure to require the jet pump flow surveillance test be performed each shift. If there is a test failure, then the applicable Technical Specification actions will be taken. Increased surveillance performance will be controlled by procedure. (Complete)
- d) Remote indication (video camera and monitor) of individual jet pump flow indicators, in the auxiliary electric room, will be provided to the control room. This provides the capability for control room operators to quickly assess jet pump flow indication in response to appropriate alarms. (Complete)
- e) Evaluate the scheduled activities on the ECCS systems (High Pressure Coolant Injection, Core Spray, Low Pressure Coolant Injection (LPCI), Emergency Diesel Generator(EDG)) and their support systems to maximize availability and reliability by limiting discretionary maintenance. (Complete)
- f) The core spray system will have one train (including associated EDG) treated as "protected," and LPCI will have two trains (including associated EDG) treated as "protected" in accordance with the general guidance of OU-AA-103, section 4.5 (signage, and daily signage verification) in MODES 1 and 2 until the suspect beams are replaced. (Complete)
- g) Implement the new fuel limit as analyzed by the LOCA analysis coincident with a jet pump beam failure (MAPRAT  $\leq 0.90$ ). (Complete)

Dresden Nuclear Power Station, Unit 2

Additional actions as specified in Revision 1 of the Operability Determination for Condition Report 90478.

- a) A briefing will be provided to each operating crew to inform them of the Quad Cities Unit 1 Jet Pump event and these prudent actions. Each Operating crew will review the Jet Pump failure diagnosis, the importance of Jet Pump integrity to the design basis accident analysis (re-flooding to two-thirds core height), the need to perform a daily Jet Pump flow surveillance test, and review the Operator response actions required per plant procedures. (Complete)
- b) A key plant parameter affected by a jet pump hold-down beam failure will be continuously monitored by computer and an audible alarm will be provided for the control room operators of a significant change from steady-state conditions, total jet pump flow ( $\sim 1.0 \times 10^6$  lbm/hr increase or decrease). Audible computer monitoring of these points will be controlled by procedure. (Complete)
- c) Revise the jet pump flow surveillance procedure to require the jet pump flow surveillance test be performed each shift. If there is a test failure, then the applicable Technical Specification actions will be taken. Increased surveillance performance will be controlled by procedure. (Complete)