

May 7, 2007

Mr. Christopher M. Crane
President and Chief Nuclear Officer
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: BYRON STATION, UNIT NO. 1 - PRESSURIZER SURGE, SPRAY, SAFETY,
AND RELIEF NOZZLE WELD SUSCEPTIBILITY TO PRIMARY WATER
STRESS-CORROSION CRACKING (TAC NO. MD4136)

Dear Mr. Crane:

This letter acknowledges the receipt of information from Exelon Generation Company, LLC pertaining to the pressurizer surge, spray, safety, and relief nozzle and safe end welds at Byron Station (Byron), Unit No. 1.

The discovery, in October 2006, of five circumferential indications in three Alloy 82/182 dissimilar metal (DM) welds on the pressurizer at the Wolf Creek Generating Station (Wolf Creek) raised safety concerns based on the size and location of the indications. At Wolf Creek, three indications were in the pressurizer surge nozzle-to-safe end weld, and two separate indications were in the safety and relief nozzle-to-safe end welds. These findings also indicated that significant concerns might exist with the inspection schedules for addressing the pressurizer weld concerns issued by the industry-sponsored Materials Reliability Program (MRP), in "Primary System Piping Butt Weld Inspection and Evaluation Guideline (MRP-139)."

The U.S. Nuclear Regulatory Commission (NRC) is concerned about the pressurizer surge nozzle-to-safe end weld indications, as this is the first time that multiple circumferential primary water stress-corrosion cracking (PWSCC) indications have been identified in a weld. This condition calls into question the degree of safety margin present in past structural integrity evaluations for flawed DM welds susceptible to PWSCC, since multiple stress-corrosion cracking flaws may grow independently and ultimately grow together, significantly reducing the time from flaw initiation to leakage or rupture.

Based on discussions with the NRC staff, licensees of plants susceptible to this condition have committed to enhanced inspection frequency and reactor coolant system leakage monitoring until actions to mitigate the potential of PWSCC in the affected welds have been completed.

In your letter dated January 30, 2007 (Agencywide Documents Access & Management System (ADAMS) Accession No. ML070310279), you stated that the pressurizer surge, spray, safety, and relief nozzle welds containing Alloy 82/182 material have been mitigated through

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application of full structural weld overlay at Byron, Unit No. 1. As a result, your response adequately addresses the concerns that the NRC has at this time regarding PWSCC susceptibility of these welds.

This completes the NRC staff efforts on TAC No. MD4136 for the review associated with this issue. If you have any questions regarding this matter, please contact the Byron Project Manager, Robert Kuntz at (301) 415-3733.

Sincerely,

/RA/

Catherine Haney, Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-454

cc: See next page

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Byron Station, Units 1 and 2

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