

RS-01-009

January 29, 2001

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

Braidwood Station, Units 1 and 2
Facility Operating License Nos. NPF-72 and NPF-77
NRC Docket Nos. STN 50-456 and STN 50-457

Subject: Confirmatory Evaluation Regarding the Spent Fuel Pool Racks at
Braidwood Station

- References:
- (1) Letter from B. Gutherman (Holtec International) to U.S. Nuclear Regulatory Commission, "10 CFR 21 Notification for Discrepant Weight of Spent Fuel Racks," dated January 4, 2001
 - (2) Letter from R. M. Krich (Commonwealth Edison Company) to U.S. Nuclear Regulatory Commission, "Analysis Regarding a Potential Rack Drop Accident During Installation of New Spent Fuel Pool Storage Racks at Byron and Braidwood Stations," dated May 10, 2000
 - (3) Letter from G. F. Dick (U.S. Nuclear Regulatory Commission) to O. D. Kingsley, "Byron and Braidwood – Issuance of Amendments on Spent Fuel Storage Racks," dated March 1, 2000

By letter dated October 18, 2000, Holtec International notified Exelon Generation Company, LLC, (formerly Commonwealth Edison Company), that the four Region 1 Joseph Oat Spent Fuel Pool (SFP) racks recently removed from the Byron Station SFP were heavier than the design values. Holtec International is under contract to remove the existing SFP racks and install new SFP racks at the Byron Station and the Braidwood Station.

Subsequently, in Reference 1, in accordance with 10 CFR 21, "Reporting of Defects and Noncompliance," Holtec International notified the NRC that during disposal of the Byron Station SFP racks, the as-found SFP rack weights of the four Region 1 racks ranged from approximately 8200 lbs. to 10500 lbs. more than the original design weights. The racks in question were designed and fabricated by the Joseph Oat Corporation and are currently still in use at Braidwood Station.

Pool

Upon being notified of this discrepancy, Braidwood Station wrote a Condition Report to document the discrepancy and address operability concerns. A subsequent review was performed to 1) address the impact of the additional rack weight on the original SFP analysis; 2) verify the continued acceptability of the rack drop analysis documented in Reference 2; and 3) confirm that the Braidwood Station SFP rack lift rig conforms to commitments made to NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants."

Additional Rack Weight

The original SFP rack analysis was performed assuming a rack would be fully loaded with fuel. Each of the four Braidwood Station Region 1 racks have a sufficient number of empty fuel cells such that the total weight of a rack plus fuel remains below the design weight of a fully loaded rack despite the additional unexpected rack weight. Therefore, the actual rack total weight remains bounded by the original analysis rack weight assumptions. Braidwood Station administrative procedure (BwAP) 2364-3T3, "Nuclear Component Transfer List (NCTL) Verification," has been revised to provide administrative controls ensuring a sufficient number of open cells are maintained until rack replacement is completed.

Rack Drop Evaluation

A qualitative evaluation of a potential rack drop is documented in Reference 2. Holtec International had previously performed a rack drop analysis on the Millstone Unit 3 SFP which has an elevated concrete slab foundation. Results indicated that damage to the concrete was confined to a local area that measured approximately three inches in depth assuming a rack drop of forty feet. No quantifiable leakage through the concrete slab was identified. The Byron Station and Braidwood Station SFPs are six foot thick concrete slabs founded on bedrock and soil respectively. Since an elevated foundation slab configuration is more limiting than the Byron Station and Braidwood Station SFP configuration, the structural damage to the Byron Station and Braidwood Station SFPs, due to a rack drop, would be no more severe than the Millstone Unit 3 results. Based on the Byron and Braidwood Stations SFP design, it is still reasonable to assume that if a dropped rack weighed an additional 10,000 lbs., the SFP concrete slab damage would still be confined to a local shallow area and there would be no quantifiable leakage through the slab. As noted in Reference 2, the size of the potential SFP liner tear and subsequent leak rate are not dependent on the weight of the rack. A five inch diameter hole in the liner plate was assumed due to a puncture from a single rack support pedestal; however, the maximum possible leak rate is limited by the size of the SFP leakchase system drain lines.

Lift Rig Conformance to Heavy Loads Commitments

Braidwood Station has upgraded the SFP rack lift rig to meet the commitments made to NUREG-0612 assuming that the Braidwood Station Joseph Oat SFP racks may weigh as much as the racks removed from the Byron Station SFP.

Conclusion

Removal and installation of the SFP racks at Braidwood Station remains bounded by the existing analysis and can be performed in a safe manner, consistent with the assumptions documented in the NRC Safety Evaluation transmitted to Exelon Generation, LLC in Reference 3.

Should you have any questions or concerns regarding this information, please contact Mr. J. A. Bauer at (630) 663-7287.

Respectfully,

A handwritten signature in black ink, appearing to read "R. M. Krich", written in a cursive style.

R. M. Krich
Director – Licensing

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Braidwood Station
NRC Senior Resident Inspector – Byron Station