

RS-15-119

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May 8, 2015

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

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

**Subject:** Supplemental Information Regarding License Amendment Request Regarding Spent Fuel Storage Pool Criticality Methodology and Proposed Change to Technical Specification 4.3.1, "Criticality"

- References:**
1. Letter from Patrick R. Simpson (Exelon Generation Company, LLC) to U. S. NRC, "License Amendment Request Regarding Spent Fuel Storage Pool Criticality Methodology and Proposed Change to Technical Specification 4.3.1, 'Criticality'," dated December 30, 2014
  2. Letter from U. S. NRC to Bryan Hanson (Exelon Generation Company, LLC), "Dresden Nuclear Power Station, Units 2 and 3 – Non-acceptance of Requested Licensing Action – License Amendment Request Regarding Spent Fuel Storage Pool Criticality Methodology and Proposed Change to Technical Specification 4.3.1, 'Criticality,' (TAC Nos. MF5734 and MF5735)," dated April 24, 2015

In Reference 1, Exelon Generation Company, LLC (EGC) requested an amendment to Renewed Facility Operating License Nos. DPR-19 and DPR-25 for Dresden Nuclear Power Station (DNPS), Units 2 and 3, respectively. Specifically, EGC is utilizing a new Criticality Safety Analysis (CSA) methodology for performing the criticality safety evaluation for legacy fuel types in addition to the new ATRIUM 10XM fuel design in the spent fuel pool (SFP). In addition, EGC is proposing a change to the DNPS Technical Specification (TS) 4.3.1, "Criticality," in support of the new CSA. EGC proposes to add a new TS 4.3.1.1.c that will require an in-rack k-infinity limit for the fuel assemblies that are allowed to be stored in the DNPS Units 2 and 3 SFP storage racks.

In Reference 2, the NRC provided the results of the acceptance review of the license amendment request. The NRC concluded that supplemental information is needed to enable the NRC to make an independent assessment regarding the acceptability of the proposed amendment request in terms of regulatory requirements and the protection of public health and safety and the environment. As documented in Reference 2, the NRC requested that EGC

supplement the application to address the information requested by May 13, 2015. In response to this request, EGC is providing the attached information.

EGC has reviewed the information supporting a finding of no significant hazards consideration, and the environmental consideration, that were previously provided to the NRC in Attachment 1 of Reference 1. The additional information provided in this submittal does not affect the bases for concluding that the proposed license amendment does not involve a significant hazards consideration. In addition, the additional information provided in this submittal does not affect the bases for concluding that neither an environmental impact statement nor an environmental assessment needs to be prepared in connection with the proposed amendment.

There are no regulatory commitments contained in this letter. Should you have any questions concerning this letter, please contact Mr. Timothy A. Byam at (630) 657-2818.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 8<sup>th</sup> day of May 2015.

Respectfully,



David M. Gullott  
Manager – Licensing

Attachment: Response to Request for Supplemental Information

cc: NRC Regional Administrator, Region III  
NRC Senior Resident Inspector – Dresden Nuclear Power Station  
Illinois Emergency Management Agency – Division of Nuclear Safety

**ATTACHMENT**  
**Response to Request for Supplemental Information**

**NRC Request:**

Provide the following information about the Boral coupon program in Section 9.1.2.3.1 of the Updated Final Safety Report (UFSAR). Information about this program should include the following information:

- a) Define the periodicity for coupon testing;
- b) Describe the coupon testing procedure;
- c) Define the acceptance criteria for the coupon surveillance program, including what constitutes an adverse condition;
- d) Describe the process and acceptance criteria for the B-10 loading analyses;
- e) Describe those measures taken to address a failure to meet the acceptance criteria for either the coupon surveillance program and/or the B-10 loading analyses; and,
- f) Address any adverse conditions other than identified corrosion that may be identified during testing, and whether different acceptance criteria apply to those other adverse conditions.

**Response:**

The Boral coupon sample surveillance program at Dresden is described in Section 9.1.2.3.1 of the Updated Final Safety Analysis Report (UFSAR) and controlled by plant procedures.

- a) Coupon testing is currently performed on a ten year frequency. This frequency takes into account license renewal, the results of earlier coupon testing, and the number of coupons remaining in the pool.
- b) Following removal from the spent fuel pool, the coupon is sent to a qualified laboratory where the coupon jacket is removed to expose the Boral specimen. The Boral specimen is then microphotographed and weighed before it is cleaned (via acid wash) and dried (dehydrated) in a three stage process. After each stage of the drying process, the specimen is weighed. Following drying, the specimen is microphotographed a second time and length, height, and thickness measurements of the specimen are taken. Additionally, the specimen is visually examined for pitting. If pitting is observed, the depth of the pits is measured.
- c) An adverse condition with respect to the Boral specimen is any corrosion, blistering, pitting, or swelling.
- d) The B-10 loading analysis of the Boral specimen is performed by a qualified laboratory. The acceptance criteria is neutron absorber areal density greater than or equal to 0.02 grams per centimeter squared B-10.
- e) If an adverse condition is identified (as defined above in response c), then the condition is entered in the corrective action program and a B-10 loading analysis is performed on the Boral specimen. If the Boral specimen fails the B-10 loading acceptance criterion (as defined above in response d), then the condition is entered in the corrective action program and a B-10 loading analysis is performed on one or both of the full-length vented fuel storage tubes. These tubes would be removed from the spent fuel pool and the B-10 loading analysis performed by a qualified laboratory.

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- f) In addition to the adverse conditions described above in responses c and d, abnormal changes in Boral specimen dimensions and weight may be identified during specimen testing. There are no specific acceptance criteria for these parameters.