

December 15, 2003

Pamela Blockey-O'Brien
D-23 Golden Valley
7631 Dallas Highway
Douglasville, GA 30134

Dear Ms. Blockey-O'Brien:

After our conversation, I researched the issue of radiation embrittlement of the carbon steel rails that the reactor building overhead crane runs on. As I stated during our conversation, the radiation levels within the reactor building where the crane operates is at about background levels. The radiation level in the area of the reactor building crane rails is this low due to the various types of shielding that were installed during the construction of the plant. This includes the drywell shield plug over the top of the reactor and the concrete drywell itself. The spent fuel pools that contain highly radioactive spent fuel assemblies are also in this area. However, radiation shielding is provided by concrete walls surrounding the spent fuel pools and 21-feet of water above the fuel assemblies.

Because the radiation level in the area of the reactor building crane rails is at about background level (i.e., radiation levels naturally occurring), the rails are no more prone to radiation embrittlement than any other man-made structure. Therefore, there is no concern about the crane rails developing embrittlement and failing during a dry cask movement and it is not necessary to ask the licensee to prove that there is no embrittlement.

The only locations in a nuclear power plant that are susceptible to significant amounts of neutron irradiation embrittlement are the reactor vessel beltline materials and the reactor internals materials that are adjacent to the reactor core. These materials only begin to exhibit radiation embrittlement when the neutron fluence exceeds greater than 10^{17} neutrons/cm². The neutron fluence received by the overhead crane would be many orders of magnitude below the value of 10^{17} neutrons/cm² and, therefore, would not be susceptible to neutron irradiation embrittlement.

I hope that this addresses your concern. If you have any questions please contact me at 301-415-1313, or at sdb1@nrc.gov.

Sincerely,

/RA/

Steven Bloom, Project Manager, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

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Steven Bloom, Project Manager, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Adams: ML033490030

*see previous concurrence

OFFICE	PDII-1/PM	PDII-1/LA	EMCB*	PDII-1/SC
NAME	SBloom	CHawes	WBateman	JNakoski
DATE	12/12/03	12/12/03	12/11/03	12/15/03

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