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Safety Evaluation Report
Alabama Power Company (APC)
Application Signed September 18, 1979
for a License for Fuel and Accessories for the
Joseph M. Farley Nuclear Plant, Unit 2
Docket 70-2920

The subject application requests a license to receive up to 1900 kilograms of U-235 contained in uranium enriched up to 3.1 percent in the form of fuel assemblies, 100 milligrams of U-235 at any enrichment contained in fission chambers or detectors, 8.53 curies of Pu in a Pu-Be neutron source (Pu-238), and 0.005 millicuries of Pu-239 electroplated on nickel for calibration purposes.

Because of measurement and enrichment variations usually encountered, it is proposed that a maximum U-235 enrichment of 3.15 percent be authorized for the uranium in fuel assemblies. The U-235 fission chambers and the plated Pu-239 sources will be stored and used under the jurisdiction of the APC Chemistry and Health Physics Group. The Pu-Be neutron source will be stored in its shipping container. Since the applicant did not provide detailed information regarding the use of this source, a license condition has been added restricting use of the neutron source to storage only.

The new fuel assemblies will be stored in their shipping containers, in the new fuel storage racks and in the spent fuel storage racks. The new fuel storage racks provide for a 21-inch center-to-center spacing between fuel assemblies. The safety of storage at 21-inch centers has previously been established. The spent fuel storage racks provide for a nominal 13-inch center-to-center fuel spacing. This fuel storage spacing has already been approved for the Joseph M. Farley Nuclear Plant Unit 1. The staff has added a license condition: "Fuel assemblies shall be stored in such a manner that water would drain freely from the assemblies in the event of flooding and subsequent draining of a storage area." This condition is to minimize the chances for having moderated fuel assemblies without the water shielding between assemblies.

Conservative calculations by the staff have shown that two or more of these fuel assemblies are required in order to achieve criticality. APC will permit only one assembly to be out of a shipping container or storage location at one time in either the new fuel storage area or the spent fuel storage area. It is the staff's opinion that under these conditions, the applicant has established reasonable and satisfactory precautions to avoid accidental criticality.

The Division of Safeguards has reviewed the applicant's proposed plans for physical protection of special nuclear material and has determined that the plans are acceptable. At the request of SG, a license condition has been added as follows:

> The licensee shall maintain and fully implement the physical protection measures identified in Sections 1.2 and 1.4 of the license application signed on September 18, 1979, and the supplement thereto dated February 7, 1980.

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The applicant has also described the basic aspects of its radiation safety control program, including a description of the training and experience of personnel responsible for administering the program. The Staff has concluded that the applicant's radiation safety program and personnel are adequate to allow them to reasonably carry out the activities for which a license is requested.

The applicant has requested, pursuant to 10 CFR 70.24(b), an exemption from the provisions of 10 CFR 70.24. Because of the inherent features associated with the storage and inspection of unirradiated fuel containing uranium enriched to less than 5 percent in the U-235 isotope when no fuel processing activities are to be performed, the Staff hereby determines that granting such an exemption will not endanger life or property or the common defense and security, and is in the public interest. This exemption is authorized pursuant to 10 CFR 70.14.

The NRR Project Manager, Mr. L. L. Kintner, and Mr. W. H. Bradford, Inspector, I&E, Region II, have stated that they have no objections to the issuance of the license.

Conclusion

Based on the above statement, the Staff believes that the proposed activities can be performed without undue risk to the health and safety of the public. It has been determined by the Staff that the application fulfills the requirements of 10 CFR 70.23(a). Further, the issuance of this license is not a major Federal action significantly affecting the quality of the human environment and thus, pursuant to 10 CFR 51.5(a)(4), no environmental impact statement, negative declaration, or environmental appraisal need be prepared.

Recommendation

The Staff recommends approval of the application and of the exemption of the licensee from the requirements of 10 CFR 70.24.

J. C. Delaney

Approved: W. T. Crow
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