

TOSHIBA CORPORATION

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TOS-CR-4S-2007-0001

August 24, 2007

PROJ - 760

Document Control Desk
Attn: Dr. Brian W. Sheron, Director
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Pre-Application Meeting Request for Design Approval of the Toshiba 4S Reactor

Dear Dr. Sheron,

Toshiba Corporation requests a pre-application review of the 4S reactor design. This review will provide the NRC with a familiarization of the 4S Reactor design, operation, and inherent safety features, and will initiate a dialogue with the NRC to proceed with the application process. Toshiba intends to apply for formal Design Approval once the detailed design of the 4S is sufficiently complete. In preparation for the formal application for NRC Design Approval, the pre-application review with the NRC will allow Toshiba to obtain early feedback to facilitate the formal licensing process.

The 4S Reactor (Super-Safe, Small and Simple) has been jointly developed by Toshiba and CRIEPI (Central Research Institute of Electric Power Industry in Japan). Toshiba will be assisted in the licensing process by Westinghouse Electric Company, which is a group company of Toshiba Corporation. Westinghouse will provide the licensing interface with the NRC.

The 4S Reactor is a small-scale (30 MW thermal), sodium-cooled fast reactor that features a core life of 30 years with no on-site refueling, passive safety, inherent security associated with an embedded reactor, and long response time to transient events. Its unique combination of features makes the 4S, known as a nuclear battery, particularly well suited to meeting the needs for clean energy in remote area applications, such as small communities in Alaska, Galena for example. The 4S is a Japanese candidate for the assessment relative to the requirements in the GNEP (Global Nuclear Energy Partnership) Small and Medium Reactors Working Group between the United States Department of Energy (DOE) and Ministry of Economy, Trade and Industry of Japan (METI). METI is planning a new technical support program for nuclear technologies that contribute to commercial deployment. The 4S could be an excellent candidate for this program.

Our proposed plan for the pre-application review consists of two phases. In Phase I, Toshiba intends to hold a series of meetings with the NRC to familiarize the NRC Staff with the 4S plant and safety design features. The first meeting, which would provide an overall introduction to the 4S, would be followed with several more detailed meetings to discuss such topics as safety analysis, reactor core and fuel design, seismic isolation, and PIRT (Phenomena Identification and Ranking

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Table) development. Recognizing that this is a new reactor design, these meetings are also intended to facilitate policy guidance discussions with the NRC Staff. In Phase II, technical reports addressing these and other topics will be submitted for NRC review prior to the formal application for Design Approval. The technical reports will include the PIRT, which will be used to develop a consensus between Toshiba and the NRC regarding the verification testing that would be required to support the Design Approval. We expect the pre-application review to require approximately two years, with the formal submittal of the application for Design Approval planned for 2009.

By this letter, we respectfully request an initial meeting with the NRC Staff to allow us the opportunity to present an overview of the 4S plant design and to discuss matters regarding how to proceed with the pre-application review. We are hopeful that we can hold this first meeting in September 2007. Please let us know the feasibility of having this meeting with your staff in this timeframe. Our contact individual for this project in the US is Mr. Bradley F. Maurer of Westinghouse whose contact information is provided below.

We appreciate your kind consideration of our request and are looking forward to hearing from you.

Very sincerely yours,



Akio Shioiri
Senior Manager
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Power System Company
Toshiba Corporation

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