

March 18, 2008

MEMORANDUM TO: William D. Reckley, Chief  
Rulemaking, Guidance and Advanced Reactors Branch  
Division of New Reactor Licensing  
Office of New Reactors

FROM: Donald E. Carlson, Senior Project Manager */RA/*  
Rulemaking, Guidance and Advanced Reactors Branch  
Division of New Reactor Licensing  
Office of New Reactors

SUBJECT: SUMMARY OF PRE-APPLICATION REVIEW MEETING WITH TOSHIBA  
CORPORATION (TOSHIBA) ON LONG-LIFE METALLIC FUEL FOR THE  
“SUPER-SAFE, SMALL, AND SIMPLE” (4S) REACTOR DESIGN

On February 21, 2008, staff from the Nuclear Regulatory Commission's (NRC) offices of New Reactors (NRO), Nuclear Regulatory Research (RES), Nuclear Reactor Regulation (NRR), and Nuclear Materials Safety and Safeguards (NMSS) met with representatives from Toshiba Corporation (Toshiba) and its three project partners, Japan's Central Research Institute for the Electric Power Industry (CRIEPI), Westinghouse Electric Company (Westinghouse), and Argonne National Laboratory (ANL), to conduct the second of four proposed familiarization meetings on safety-related aspects of the “Super-Safe, Small, and Simple” (4S) reactor design. In addition to familiarization meetings, Toshiba's proposed 4S pre-application review activities include staff reviews of four technical reports to be submitted in April, October, November, and December of 2008, respectively, in preparation for Toshiba's planned submittal of a 4S design approval application in 2009.

This meeting sought to further familiarize the NRC staff with the 4S system design and provide detailed information on its long-life metallic fuel. Held at NRC Headquarters as a Category 1 public meeting, the meeting was attended by seven pre-applicant team members from Japan, eight from the United States, eighteen NRC staff members, and eight members of the public. In addition, four members of the public and one member of the pre-applicant team in Japan listened via telephone bridge line while referring to presentation materials made publicly available beforehand in the NRC's Agencywide Documents Access and Management System (ADAMS, <http://www.nrc.gov/reading-rm/adams.html>). No proprietary information was presented. With Toshiba's permission, the NRC staff made a video recording of the meeting proceedings. Video recordings of this and other technical meetings on advanced reactors are being provided where feasible to address NRC knowledge management needs and to further facilitate information sharing and public observation of the staff's interactions with advanced reactor pre-applicants.

After opening formalities, introductions, and a brief background presentation by NRC staff, 4S team members from Westinghouse and ANL gave a series of detailed technical presentations. During and following the respective presentations, the pre-applicant team responded to clarifying technical questions and comments from NRC staff. Suggested follow-up actions included near-term efforts to resolve NRC staff resource issues for addressing Toshiba's near-term proposal to hold the remaining two 4S familiarization meetings on (a) safety design and regulatory conformance and (b) overview of the pre-applicant's phenomena identification and ranking tabulation (PIRT) results, respectively.

The business portion of the meeting concluded well ahead of schedule because the pre-applicant's presentations had been paced to allow adequate time for staff questions and discussions during and between the respective presentations. Public comments were solicited before adjourning the meeting but none were provided. Detailed records of the meeting and related communications are publicly available as indicated in the following table.

| Document Description                                                                                                                                      | Document Location /<br>ADAMS Accession Number                                                                                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Toshiba's formal request to start pre-application review activities for 4S design approval                                                                | ADAMS ML072540677                                                                                                                                                                                                        |
| NRC's formal response to Toshiba's request                                                                                                                | ADAMS ML072560034                                                                                                                                                                                                        |
| Toshiba's 10/23/2007 presentation including its proposed plan for 4S pre-application interactions                                                         | ADAMS ML072950025                                                                                                                                                                                                        |
| Posted Category 1 public meeting notice                                                                                                                   | ADAMS ML080380442                                                                                                                                                                                                        |
| Meeting agenda                                                                                                                                            | Enclosure 1 / ADAMS ML080600183                                                                                                                                                                                          |
| List of meeting attendees (in-person and call-in)                                                                                                         | Enclosure 2 / ADAMS ML080600212                                                                                                                                                                                          |
| Meeting presentation by NRC staff                                                                                                                         | ADAMS ML080510358                                                                                                                                                                                                        |
| Meeting presentations by pre-applicant team                                                                                                               | ADAMS ML080600037                                                                                                                                                                                                        |
| Video recording of meeting proceedings on three digital video discs (DVDs)                                                                                | DVDs available on request from Donald Carlson ( <a href="mailto:dec1@nrc.gov">dec1@nrc.gov</a> , 301-415-0109)                                                                                                           |
| Trade press article about the meeting: "Long-life metallic fuel touted as key feature of 4S reactor," <i>NuclearFuel</i> , Vol. 33, No. 4, 2/25/2008, p.8 | External: <a href="http://www.platts.com">www.platts.com</a> (subscription)<br>Internal:<br><a href="http://www.internal.nrc.gov/IRM/LIBRARY/ejournal/frame.htm">www.internal.nrc.gov/IRM/LIBRARY/ejournal/frame.htm</a> |

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