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PBMR – Current NRR and RES Activities

1. PBMR preapplication review began in April 2001. Staff have been meeting monthly with Exelon and DOE on legal, financial and technical issues. This is a joint activity involving RES, NRR, NMSS, and OGC.
2. On May 10, 2001, Exelon submitted nine white papers on legal and financial issues that Exelon believes merits special consideration by the staff due to the unique nature of a modular design, gas-cooled reactor design, or operation as a merchant plant. The nine white papers addressed requirements on:
 - Operator staffing
 - Fuel cycle impacts
 - Financial qualifications
 - Decommission funding
 - Minimum decommissioning costs
 - Antitrust review
 - Number of licenses
 - Annual fees
 - Financial protection

Exelon plans to use this information as part of their feasibility study that will assist them in the decision to proceed with licensing in the US. Exelon will make their decision in December 2001. The staff is in the process of developing response to the white papers. A final meeting with Exelon is scheduled for September 19, 2001. A SECY paper is scheduled to be submitted to the Commission in November 2001.

2. By letter dated June 1, 2001, Exelon submitted its initial proposed risk-informed licensing approach that Exelon believes merits special consideration by the staff due to the unique nature of a gas-cooled reactor design. The staff developed an interoffice working group to assess Exelon's proposal and provided feedback to Exelon in a letter dated August 16, 2001. Exelon provided the staff a revised version of its licensing approach on August 31, 2001. A final meeting with Exelon is scheduled for September 19, 2001. The staff will use this revised version as the basis of its assessment to be provided to the Commission in November 2001.
3. On September 5, 2001, NRR and Exelon will begin a series of meetings to discuss the COL application submittal and staff review. The objective is to achieve a focused and efficient application and review process.
4. Staff members continue to participate in international visits to gather information on pebble bed and high temperature gas-cooled reactor designs. These visits are sponsored, at least in part, by DOE to gather generic high temperature gas-cooled reactor design information. Information is being collected for our foreign contacts with HTGR experience:
 - South Africa – March 2001
 - United Kingdom – June 2001

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- Germany – July 2001
 - China/Japan – September 2001
 - Staff organizing international workshop – October 2001
5. Approximately 6 NRR, 14 RES, and 3 NMSS members will attend the DOE-sponsored training on high temperature gas-cooled reactor technology from September 10 - 14, 2001.
 6. Papers for major technical issues and related policy issues are due in April 2002 and October 2002, respectively.
 7. PBMR work partially funded by DOE-NE (i.e., technology assessment and transfer) thru a reimbursable agreement with DOE.
 - FY01 – 500K from DOE (funds 1 FTE and 300K contract assistance)
 - FY02 – 900K from DOE (funds 2 FTE and 500K contract assistance)
 8. Planning a research plan for regulatory infrastructure development.

NRR No. 02-010

**Background Information for Courtesy Visit
by Marvin Fertel (Nuclear Energy Institute) on February 14, 2002**

DISCUSSION TOPICS:

- New Reactor Licensing
- Yucca Mountain Licensing

SCHEDULE:

- 9:00 am - Commissioner Merrifield
- 10:00 am - Commissioner McGaffigan

VISITORS:

- Marvin Fertel - Nuclear Energy Institute

Contact:
Tom Bergman 415-1725

NRR 12/20/01

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NEW REACTOR LICENSING

The purpose of this briefing sheet is to provide a summary of the current status and near term issues for new reactor licensing efforts that are taking place in NRR and the Office of Research. Background information is provided for the following areas:

- NEI letter dated December 20, 2001 regarding new reactor licensing issues
- Regulatory infrastructure including:
 - Part 52
 - Inspections, tests, analyses, and acceptance criteria
 - financial requirements
 - regulatory framework
- Early Site Permits (ESP)
- Preapplication reviews for
 - Exelon's pebble bed modular reactor (PBMR)
 - Westinghouse's AP1000
 - General Atomics' gas turbine modular helium reactor (GT-MHR)
 - Westinghouse's international reactor innovative and secure (IRIS) design

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NEI letter dated December 20, 2001, regarding new reactor licensing issues (Attached)

Marvin Fertel sent a letter to the Chairman updating industry's activities associated with new reactor licensing and to provide the industry's perception on certain aspects of the staff's readiness assessment (see attached). The letter had 3 major points:

- Integration of two NEI petitions for rulemaking with the Part 52 notice of proposed rulemaking
- The need for continued priority on resolving ITAAC issues
- Consistency of ESP and COL schedule estimates used by industry and the NRC

EX 5

Regarding the need for continued priority on resolving ITAAC issues, NEI states in its letter that it believes the Commission should place a high priority on the policy issue concerning the required scope of ITAAC in a combined license (COL), and in particular, whether ITAAC are required on operational programs (programmatic ITAAC). The staff originally intended to provide its position in a paper to the Commission in early March. (Note: The staff is in the process of asking for an extension because key OGC personnel are assigned to other higher priority work.) The staff's preliminary position is that programmatic ITAAC in the COL application are necessary, while NEI's position is that they are not.

NEI also requests the Commission to monitor activities associated with an NEI white paper dated November 20, 2001 related to ITAAC implementation. The staff met with NEI on 1/10/02 to discuss this paper and provided NEI with high-level comments on the paper. The staff committed to provide detailed written comments to NEI on the paper in May of 2002.

Regarding the consistency of ESP and COL schedule estimates, NEI states in its letter that 27 months to obtain a COL that references both an ESP and a certified design seems excessive. NEI suggests that the NRC and the industry continue to work toward a consistent set of schedule estimates for the respective ESP and COL activities.

NRR release

Regulatory Infrastructure

The following is a brief status of the activities presented in NEI's integrated schedule attached to the December 20, 2001, letter.

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|-------------------------------|---|
| Part 52 rulemaking | Publicly released draft rule language 9/27/02. The staff is considering releasing revised version in February 2002. Proposed rule to the Commission by early April 2002. |
| ITAAC | current status discussed above |
| Financial requirements | Preliminary position for this issue for Exelon is provided in SECY-01-0207, "Legal and financial issues related to Exelon's PBMR." This paper was made publicly available on 1/15/02. |
| Regulatory framework | NEI is exploring replacement of 10 CFR Part 50 and 52. NEI to provide white paper in April of 2002. |

Early Site Permits (ESPs)

The staff met with NEI on 1/10/02 to discuss ESP issues. The meeting participants included representatives from Exelon, Entergy, Southern Nuclear, and Dominion, who are in the process of scoping the work associated with an ESP application. Prior to the meeting NEI submitted a series of questions. At the meeting the staff responded to the questions. There was general agreement that the exchange of information was useful and that such meetings would be held on a periodic basis in the near future to try to resolve issues as soon as possible.

Preapplication reviews for the PBMR, AP1000, and GT-MHR

PBMR

- Staff meeting with Exelon on a periodic basis.
- SECY-01-0207 released to the public on January 15, 2002. This paper contains the staff's preliminary positions related to Exelon's proposals on legal and financial issues related to modular gas-cooled reactors and merchant plant applicants. The staff will engage stakeholders, and plans to provide policy recommendations to the Commission in June 2002.
- Staff is performing a preliminary assessment of Exelon's proposed licensing approach on the basis of the information provided to date. Exelon proposes an approach that is risk-informed.
- Preapplication review to be completed early calendar year 2003

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PBMR (continued)

- ESP application expected late 2002 or early 2003, and a combined operating license (COL) application late 2003 early 2004, which is a slip of approximately 6 months for the ESP and 1 year for the COL from Exelon's original schedule.
- Exelon informed the staff that Exelon is considering a demonstration unit in the U.S.

AP1000

- Staff expects to provide two Commission papers in March/April 2002.
 - 1st paper to address AP1000 design acceptance criteria and the acceptability of certain exemptions for the AP1000 design.
 - 2nd paper will address the applicability of the AP600 test program and analysis codes to the AP1000 design.
- Design certification application expected in April of 2002.

GT-MHR

- Staff met with General Atomics (GA) on 12/3/01. GA requested the staff perform a preapplication review of the GT-MHR at this meeting.
- Staff expecting a letter from GA in early calendar year 2002 detailing its plans for a preapplication review.
- Staff will prepare a Commission paper to inform the Commission of its plans after GA letter is received.

IRIS

- Met with Westinghouse on May 7, 2001.
- Preapplication review has not begun.
- NEI's 12/20/01 letter indicates that the preapplication review could begin Spring of 2002.