

SECY Related to Exelon Legal and Financial Issues

Purpose: Discuss proposed staff positions on Legal and Financial Issues related to licensing the pebble bed modular reactor (PBMR)

Success: Understanding of staff positions in SECY paper

Discussion Time: 60 minutes

White Papers:

Exelon submitted white papers in a letter dated May 10, 2001 providing proposals for legal and financial issues related to licensing modular reactors and merchant plants. Exelon requested a Commission response by December. Exelon plans to use this information as part of their feasibility study that assist them in the decision to proceed with licensing in the US. The 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 (Price-Anderson)

In addition to addressing Exelon's proposals, the staff identified several issues related to Exelon's proposals that may affect the PBMR application:

- license life for one combined license for multiple reactors
- duration of design approval under a combined license for multiple reactors
- commencement of annual fees
- testing of new design features for a combined license

The staff has assessed Exelon's proposals and has prepared a SECY paper to inform the Commission of its positions.

Status of SECY Paper:

Paper was forwarded to the EDO for concurrence on November 7, 2001.

Stakeholder Notification:

It is expected that the paper will be released to the public 10 business days after it is provided to the Commission. NRLPO will follow a communications plan to inform internal and external stakeholders (Exelon, NEI, and interested members of the public) when the SECY paper is released.

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Staff's positions:

1. Operator staffing in 10 CFR 50.54(m)

The regulations do not address the possibility of having three or more reactors controlled from one control room. The staff agrees with Exelon that Exelon will need to address the safety implications to justify that more than two reactors can be adequately controlled from one control room. Further, an exemption to the regulations would be necessary for an alternate level of operator staffing for the PBMR. In its application, Exelon must provide adequate justification for the proposed staffing level.

2. Fuel cycle impacts: Tables S3 and S4 in 10 CFR 51.51 and 51.52

For other-than-light-water-reactor applicants, the staff must review on an application-by-application basis design-specific environmental impacts, because current Tables S-3 and S-4 do not cover PBMR fuel design and fuel cycle considerations. The impacts should be discussed in a manner similar to that presented in 10 CFR 51.51 and 51.52. The fuel cycle and fuel transportation impacts for non-light-water reactors (LWRs) could differ from the impacts codified in 10 CFR Part 51; absent a rule, these impacts will have to be addressed in each application.

3. Fuel cycle impacts: Waste Confidence in 10 CFR 51.23

It appears that a PBMR facility would be within the scope of the generic determination in Section 51.23(a). With respect to the Department of Energy's (DOE's) acceptance of PBMR spent nuclear fuel, Exelon should enter into discussions with DOE, as appropriate, to confirm that DOE will accept PBMR fuel.

4. Financial qualifications in 10 CFR 50.33(f)

The Commission has the authority to determine by rule or regulation that a given class of non-electric utility applicants for nuclear power plant licenses shall not be required to submit financial qualifications information. However, Exelon has not yet presented sufficient technical and regulatory information to support the establishment of such a class of applicants, nor has the staff identified a reasonable basis for establishing such a class of applicants.

For the first PBMR application, Exelon must submit estimates for the total construction costs and annual operating costs for each of the first 5 years of operation of the entire PBMR facility and identify the source of funds to cover such operating costs, as required by Appendix C of Part 50. Exelon's submittal will be reviewed by the staff using the process provided in the Standard Review Plan on Power Reactor Licensee Financial Qualifications and Decommissioning Funding Assurance (NUREG-1577, Rev. 1, March 1999).

5. Decommissioning funding requirements in 10 CFR 50.75

Exelon proposes to seek a license as a nonutility. This will, according to current NRC regulations, provide Exelon with several options for funding decommissioning, but not the sinking fund option. Exelon's proposed payment scheme would not provide the same assurance of adequate decommissioning funding.

6. Minimum decommissioning cost estimates in 10 CFR 50.75(c)

The staff will accept a minimum decommissioning cost estimate specifically for the PBMR if the NRC finds the technical justification to be adequate.

7. Antitrust review requirements in 10 CFR 50.33a

The ability of the NRC to except certain applicants for new nuclear generating facilities from the NRC's antitrust review requirements is being addressed separately by the Office of the General Counsel.

8. Number of licenses and license duration for one combined license (COL) for multiple reactors in 10 CFR Part 52

Congress did not specifically address the prospect of combining individual COLs for multiple reactor modules into a single combined COL. Nevertheless, there appears to be nothing in the legislative history of the AEA which explicitly precludes the possibility that the Commission may, under the authority of Section 161.h. of the AEA, combine into a single license the individual Part 52 COLs for reactor modules of a substantially similar design co-located at a single site. If the Commission considers this course, it should also consider rulemaking to clarify: (i) the nature of "reactor modules" and modular designs whose licensing may be combined under the authority of Section 161.h. of the AEA and (ii) the process for making findings under 10 CFR 52.103(g) for reactor modules (and possibly the process for NRC staff inspection and publication of notices concerning completed inspections, tests, analyses and acceptance criteria (ITAAC) in 10 CFR 52.99).

The terms of operation for a single combined COL would be limited to 40 years from the date of issuance of the COL. Sequential 40-year terms for each reactor module are not possible inasmuch as a "single license" would be issued. Legislation recently submitted by the Commission addressing the matter of 40-year terms would, if enacted, permit the 40-year term of operation to begin when the Commission made the initial 10 CFR 52.103(g) finding, but would not permit sequential 40-year terms.

The staff has a concern with the effective duration of a design approval resulting from a multiple module license issued under 10 CFR Part 52. Therefore, if a single combined license is issued for multiple modules (nuclear reactors), then the license should be conditioned so that the design can be reviewed every 5 years without the constraints of the backfit requirement in 10 CFR 50.109.

9. Annual fee requirements in 10 CFR Part 171 and commencement of annual fees in 10 CFR Part 52

The Chief Financial Officer (CFO) plans to include, in the FY 2002 fee rulemaking, revisions to Part 171 that would specifically authorize annual fees to be charged to facilities licensed under Part 52; clarify that the NRC annual fee is charged per license, not per unit; and establish when NRC will begin to charge an annual fee to a holder of a Part 52 combined license. Until a final decision is made on the number of modules that will be allowed under a single license, and the NRC receives sufficient information from Exelon to enable it to determine what kind of regulatory oversight the proposed design will likely require, no staff recommendations on establishing a new license fee category for modular reactors will be offered.

For a Part 52 combined license, the staff plans to assess the annual fee only after construction has been completed, all regulatory requirements have been met, and the Commission has authorized operation of the reactor(s).

10. Financial protection requirements in 10 CFR Part 140

The Commission has stated its position, in letters to Congress, on the application of Price-Anderson financial protection requirements to multiple modular reactor units co-located at a single site. The Commission stated, in part, that it "believes there are substantial doubts whether it has authority to treat multiple reactor units as only one facility for purposes of the retrospective assessment because the specific financial protection and retrospective assessment provisions in Section 170b. of the AEA are specified for a 'facility', elsewhere defined as a single reactor or even an important component part of a reactor. In our view, Congress should amend the AEA if it seeks to assure that multiple modular units at a single site are treated as a single facility."

11. Testing of new design features

The NRC has initiated rulemaking to update 10 CFR Part 52 and will request public comment on its proposed revisions to Part 52. In the current draft rulemaking language that was made available on the NRC's rulemaking web site, the NRC staff proposed to revise Subpart C of Part 52 to make it consistent with Subpart B of Part 52 and the original intent of Part 52. Thus, if approved, revised Part 52 would require that all testing determined to be necessary to demonstrate that new design features will perform as predicted in the final safety analysis be completed before issuance of the COL. A recommendation on this issue will be made after review of public comments provided in response to the proposed Part 52 rule change.

Status of PBMR Project:

- South African PBMR project delayed 1 year
- U.S. pre-application ongoing, may be extended beyond original schedule
- U.S. ESP application still expected in 2002
- U.S. COL application delayed until Late CY 2003