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From: Amy Cubbage
To: Eltawila, Farouk
Date: Mon, Jun 10, 2002 5:23 PM
Subject: NRR comments on draft SECY

Farouk,

The attached file contains NRR comments I have received to date on the draft SECY, "Plan for Resolving Policy Issues Resulting from Technical Considerations Related to Advanced Reactor Licensing," dated May 23, 2002.

SPSB has informed me that they intend to provide comments tomorrow. I will forward those to you when I receive them.

Please contact me if you would like to schedule a meeting to discuss NRR's comments.

Amy

CC: Bergman, Thomas; Caruso, Mark; Drozd, Andrzej; El-Bassioni, Adel; Fox, Edwin; Holahan, Gary; Johnson, Michael; King, Thomas; Lyons, James; Magruder, Stewart; Palla, Robert; Reinhart, F. Mark; Rubin, Mark; Throm, Edward; Wilson, Jerry

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NRR comments on draft SECY "PLAN FOR RESOLVING POLICY ISSUES RESULTING FROM TECHNICAL CONSIDERATIONS RELATED TO ADVANCED REACTOR LICENSING,"dated May 23

1. The paper needs to do a better job of distinguishing "policy" from "technical" issues. ... too many different words/phrases used without clear and consistent distinctions, e.g. "key policy issues", "policy issues", "key areas", "technical issues", "issues", "major technical issues", "major technical issues with policy implications", "areas", "overarching policy issues", "overarching issues",

2. The real policy issues are the two "overarching policy issues". The other "policy issues" are really sub-issues or technical issues. The paper should stick to the two "overarching policy issues" and just call them the "policy issues".

3. There is one additional "policy issue" that should be considered (either separately or folded into the other two) ... that is, security requirements for future reactors (including, the required degree of resistance to terrorist acts).

4. The title should be revised to Gas-cooled Reactor licensing. Most of the issues discussed in the paper only apply to PBMR or GT-MHR. The paper should clearly state that these issues are not relevant for any of the LWRs currently under or near term expected for review for design certification; AP1000, ESBWR, SWR-1000 (and Advanced Candu Reactor (ACR)?).

5. The paper should make it clear why these issues need to be resolved and when. We indicate that recommendations will be made in the Fall, but is there any urgency to the decision or can the issues be set aside? That is, if a Commission decision is critical to a vendor making a proceed decision for design certification, then we should point that out to the Commission so they understand the relative priority of the issues that will be coming before them. For example, issues of containment/confinement and EPZ size would seem to be important to whether GT-MHR & pebble bed proceed, whereas generic improvements in the regulatory framework are not nearly as important in these descisions.

6. Background, page 1, "In the past, when NRC ~~has~~ reviewed and licensed non-LWR designs ..."

7. Page 2, 2nd paragraph, 4th sentence, should read "..Recently, with the renewed interest in future plant licensing, the staff began the AP-1000 design certification review ~~has initiated activities at the pre-application stage on AP-1000~~ and has interacted with Exelon and the Department of Energy to identify key issues related to the pebble bed modular reactor (PBMR) design and an approach for their resolution."

8. The perspective set forth in first paragraph of the BACKGROUND discussion is not accurate. NRC's regulatory framework is mostly generic. During the MHTGR review, the staff reviewed the GDC and concluded that most of the requirements also applied to MHTGR. During the PBMR review, Exelon reviewed Part 50 and concluded that most of Part 50 regs. were fully or partially applicable to PBMR.

9. The second paragraph of BACKGROUND states that case-by-case review approach is

likely not the most efficient. NRR disagrees, for a one-of-a-kind design review like GT-MHR, the case-by-case review is the most efficient approach. It is not efficient to develop generic regs. for one or two designs.

10. Background: Bottom of Page 2,"Subsequently ~~In addition,~~ the staff has had interactions with NEI regarding the possible development of a generic (technology neutral) risk-informed, performance-based framework for future..." Should mention coherence here too.

11. Background, 1st paragraph page 3, "... to determine to what extent, if any, one should establish generic, risk-informed, performance based requirements for future plant licensing." We've already decided to do this.

12. The theme of the last paragraph of the BACKGROUND discussion should be GT-MHR. NRC does not need a new licensing approach for future designs. New designs, such as AP1000, ESBWR, and SWR-1000 will use our existing licensing framework and so can PBMR & GT-MHR. The last paragraph should state that the 5 issues listed in the discussion section are proposed to the Commission to facilitate NRC's review of gas rx. designs.

13. Pages 5, 11, 17, and 18 replace "evacuation" with "preparedness"

14. Discussion: list on top of page 5, "· licensing source term"

15. The discussion on page 5 on safety of future designs should mention the Severe Accident Policy Statement, where the Commission stated that "new plants will achieve a higher standard of severe accident safety performance than prior designs." This goal was implemented for certified designs with requirements in SECYs 89-013, 90-016, 93-087, etc. Also, discussion should refer to NUREG-1226, which provides information on the Adv. Rx. Policy. Adv. Rx. must, as a minimum, have the same degree of protection of public & environment as required for current generation LWRs and enhanced margins of safety over current generation LWRS are expected. NUREG-1226 states "current generation reactors" refers to recent evolutionary LWR designs (ABWR). Therefore, future designs should be as safe as the certified designs.

16. Discussion: list on top of page 6, what is meant by "RG 1.174 attributes ?"

17. Discussion: middle of page 6, However, given the experience over the past ~~pat~~ 15 years..."

18. In the discussion on pp. 6-7 on relationship of NRC requirements to international requirements, we should ask the question "Should NRC requirements for PBMR & CANDU be harmonized with requirements from other countries that will be reviewing those designs?"

19. Discussion: 2nd paragraph on page 7, "The staff believes that it is necessary to address these ~~those~~ overarching issues as part of considering the issues in the following five areas and plans to provide recommendations on these issues at the same time as recommendations are provided on the following."

20. Anticipated Operational Occurrences, page 8, Should Part 20, Occupational Exposure) be included in the discussion?

21. The discussion on AOOs should use a design lifetime of 60 years.

22. The discussion on page 11 on probabilistic approach should also refer to SECY-88-203 for the MHTGR review.

23. Also on Page 11, Under fuel performance and Qualification, Should some of the high burnup fuel issues associated with IRIS be noted here?

24. On page 12, the paper states that whether the applicant's fuel qualification test program is completed prior to COL is a policy issue. NRR disagrees. This issue was addressed by the Comm. in its Adv. Reactor Policy statement and is being addressed in the Part 52 update rulemaking. It should be deleted from this paper.

25. Also on page 12, should fuel qual. test program included BDBEs and page 13 should experimental data be used for BDBEs? We believe YES, to be consistent with the Severe Accident Policy Statement.

26. Top of page 16: "...the design modifies the traditional 3 leaktight barrier defense-in-depth approach to one that puts a greater reliance on the first barrier (fuel integrity)."

27. Page 18-19, add the following bullets after "..., the staff will consider the following: "

    - Should Federal, State and local agencies acceptance of proposed changes be obtained?

    - Should public acceptance of proposed changes be obtained?

28. General Comments on Emergency Preparedness:

    In SECY-97-020, the staff provided the results of the evaluation of emergency planning for evolutionary and advanced reactors. That evaluation focused on the evolutionary and passive advanced light water reactor (LWR) designs because of the availability of design and risk assessment data and because applicants were pursuing certification of these designs. The staff concluded that the rationale upon which emergency preparedness for current reactor designs is based, that is, potential consequences from a spectrum of accidents, is appropriate for use as the basis for emergency preparedness (EP) for evolutionary and passive advanced LWR designs and is consistent with the Commission's defense-in-depth philosophy. In order to justify changes to the EP basis, the staff believes that several issues would need to be addressed; (1) the probability level, if any, below which accidents will not be considered for EP, (2) the use of increased safety in one level of the defense-in-depth framework to justify reducing requirements in another level, and (3) the acceptance of such changes by the Federal, State and local agencies responsible for emergency planning.

The staff still considers emergency preparedness an essential part of the NRC "defense-in-depth" philosophy even for new plants which are designed to reduce the risk from severe accidents. Notwithstanding the need to consider potential consequences from a spectrum of accidents, a design's ability to prevent the significant release of radioactive material, or to provide a long delay time preceding a release for all but the most unlikely events should be reflected in any decision on relaxing emergency planning requirements. In addition, the public perception of risk from nuclear power plant accidents may be a factor. Therefore, the projected dose should not be the only factor considered as the basis for relaxing emergency planning.

29. Future work: Bottom of page 19, "Although the above issues are broad and fundamental in nature, they have been considered in previous Commission work on advanced reactors, including HTGRs and other non-LWRs, as well as in other countries *(by regulators, designers?)*."

30. Event Selection and Safety classification, Emergency Planning basis events: Page 9, 2nd paragraph, states "only DBEs (and not AOOs or EPBEs) were to be considered in determining the safety classification of SSCs." Why were systems needed for AOOs excluded here?