UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 24, 2007

SECRETARY

MEMORANDUM TO: Luis A. Reyes
Executive Director for Operations

Karen D. Cyr
General Counsel

FROM: Annette L. Vietti-Cook, Secretary

SUBJECT: STAFF REQUIREMENTS - SECY-06-0204 - PROPOSED RULEMAKING -- SECURITY ASSESSMENT REQUIREMENTS FOR NEW NUCLEAR POWER REACTOR DESIGNS (RIN 3150-AH92)

The Commission has disapproved the proposed rulemaking as described in SECY-06-0204. Instead, the staff should promptly revise the proposed rule as described in the Chairman's vote on SECY-06-0204, attached, subject to the comments below. The Commission believes that the impact of a large commercial aircraft is a beyond-design-basis event and has chosen an approach consistent with NRC's previous approach to such events. The EDO and the General Counsel should be personally involved in ensuring the highest priority be given to the publication of the proposed rule in the *Federal Register*.

The 10 CFR 73.62 rulemaking should be terminated. The ongoing 10 CFR 73.55 power reactor security rulemaking sets the adequate protection standard for both existing and future reactors. To support that rulemaking staff should complete the development of regulatory guidance for target set analyses, upon which site protection strategies would in part be based, and for security assessments, upon which mitigative strategies would be based consistent with the proposed Appendix C to Part 73.

The staff is authorized to make conforming changes in our regulations, as needed, and to build on the Chairman's descriptive language in completing the proposed rule package.

The staff should provide information based on the beyond design basis aircraft characteristics specified by the Commission, to plant designers or other stakeholders who have the need to know, and who meet NRC's requirements for disclosure of such information. In order to provide staff more flexibility with respect to the specificity and form of the information provided to the designers, or their contractors pertaining to the specified aircraft characteristics, the phrase "(including, but not limited to, type of aircraft, impact speed, aviation fuel loading, and angle of impact)" should be deleted from paragraph (b) of the draft rule language proposed in the Chairman's vote on SECY-06-0204. The information provided must be of sufficient detail to allow designers, or their contractors, to perform structural and fire analyses using a methodology similar to that used by the NRC. The Commission recognizes that this information will be at the Safeguards Information or Secret classification level. The staff should move expeditiously to share this information with the appropriate designers, or their contractors, as

soon as this SRM is approved. If it is determined that some designers or contractors need access to Secret information, but are not cleared to receive such information, the staff should expedite the clearance process to approve clearances for these stakeholders in a timely manner.

The staff should also promptly provide the Commission a plan for designers to store and generate Secret information, perhaps at facilities already established through relationships with other federal agencies. The staff must do everything possible to prevent classification issues from impeding the designers' ability to carry out these assessments.

Because this proposed rule is intended to provide incremental added margin for a beyond design basis event, it must be clear in the statements of consideration that the choice of aircraft characteristics and the scenario used for this analysis will not be linked to threat assessments or to any evolution of aircraft design.

In the statements of consideration on the proposed rule, the staff should request comment on the desirability, or lack thereof, of adding an additional acceptance criterion in the final rule beyond the proposed rule's practicability criterion. The additional acceptance criterion would read: "The application shall also describe how such design features, functional capabilities and strategies will provide reasonable assurance that any release of radioactive materials to the environment will not produce public exposures exceeding 10 CFR Part 100 guidelines."

Attachment: Chairman Klein's vote on SECY-06-0204

cc: Chairman Klein
Commissioner McGaffigan
Commissioner Merrifield
Commissioner Jaczko
Commissioner Lyons
CFO
OCA
OPA
Office Directors, Regions, ACRS, ACNW, ASLBP (via E-Mail)
PDR

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

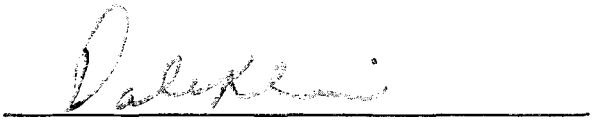
FROM: CHAIRMAN KLEIN

SUBJECT: SECY-06-0204 - PROPOSED RULEMAKING - SECURITY ASSESSMENT REQUIREMENTS FOR NEW NUCLEAR POWER REACTOR DESIGNS (RIN 3150-AH92)

Approved _____ Disapproved _xx_ Abstain _____

Not Participating _____

COMMENTS: Below___ Attached_xx_ None ___



SIGNATURE

3/20/07

DATE

Entered on "STARS" Yes ___ No ___

Chairman Klein's Comments on SECY-06-0204
"SECY-06-0204, Security Assessment Requirements for New Nuclear Power Reactor Designs (10 CFR 73.62)"

I disapprove the proposed rule making described in SECY-06-0204. I appreciate the staff's effort to develop this proposal but I believe the 73.62 rulemaking should be terminated, and the aircraft impact assessment requirements should be included in 10 CFR Part 52 to allow reactor designers to incorporate security measures at an early stage in the design process. The regulatory guidance associated with the rulemaking should be completed to assist prospective applicants in preparing these assessments.

In lieu of the proposed 73.62 rulemaking, I propose the following new section be added to 10 CFR Part 52:

52.xx Aircraft Impact Assessment

(a) Scope:
The requirements of this section apply to all design certifications, and combined licenses not referencing a certified design, issued after the effective date of this rule.

(b)
Each applicant for a new design certification or a combined license not referencing a certified design shall perform a design-specific assessment of the effects on the designed facility of the impact of a large, commercial aircraft. Such assessment shall be based on the Commission's specified aircraft characteristics (including, but not limited to, type of aircraft, impact speed, aviation fuel loading, and angle of impact) used to define the beyond design basis, large commercial aircraft impact.

(c)
Based on the insights gained from the above aircraft impact assessment, the application, shall include a description and evaluation of the design features, functional capabilities and strategies to avoid or mitigate the effects of the applicable, beyond design basis aircraft impact. The assessment of such design features, functional capabilities and strategies shall include core cooling capability, containment integrity, and spent fuel pool integrity. The application shall describe how such design features, functional capabilities and strategies, to the extent practicable, avoid or mitigate the effects of the applicable aircraft impact with reduced reliance on operator actions.

The objective of this rule is to require nuclear power plant designers to perform a rigorous assessment of design features that could provide additional inherent protection to avoid or mitigate the effects of an aircraft impact, while reducing or eliminating the need for operator actions, where practicable. Many design features might easily be included in the initial design of a facility (*e.g.*, spatially diverse containment penetrations) but very difficult, if not impossible, to retrofit. The staff should provide additional clarifying details in the statement of considerations.

On January 29, 2007, the final Design Basis Threat rule, 10 CFR 73.1, was approved by the Commission, and an attack by a large commercial aircraft was not included as part of the design basis threat. However, the Commission's decision not to include aircraft attacks within the design basis threat does not mean that the Commission has not addressed the issue. By Order dated February 25, 2002, the Commission required all operating power reactors to develop and adopt mitigative strategies to cope with large fires and explosions, including those caused by a beyond design basis threat aircraft impact. The requirements in the Order are being incorporated into the Commission's regulations in the proposed revisions to 10 CFR 73.55 and Part 73, Appendix C. Once these proposed revisions are finalized, both current and future power reactors will be required to adopt mitigating strategies to address the effects of a large commercial aircraft impact.

I believe that requiring applicants for new reactor designs to perform a rigorous aircraft impact assessment and describe design features to address impacts beyond the design basis threat scenarios is consistent with the NRC's historic approach to beyond-design-basis events and in fact essentially models the position taken by the NRC in the 1985 severe accident policy statement: "The Commission expects that vendors engaged in designing new standard [or custom] plants will achieve a higher standard of severe accident safety performance than their prior designs." The Commission reiterated that regulatory approach in the 1986 policy statement on advanced nuclear power plants: "The Commission expects that advanced reactors would provide more margin prior to exceeding safety limits and/or utilize simplified, inherent, passive, or other innovative means to reliably accomplish their safety functions." This regulatory approach has been demonstrated to be successful, as all designs subsequently submitted to and certified by the Commission represent almost two orders of magnitude improvement in safety from operational events and accidents.

Reactor designs that are already certified under Part 52 (e.g. AP1000 and ABWR) do not need to be re-certified in accordance with the new 52.xx rule. As I noted above, all new plants will be subject to 10 CFR 73.55 and Appendix C to Part 73. Thus, COL applicants will still have to develop mitigative strategies to cope with large fires and explosions potentially caused by an aircraft impact. It is highly likely that designers will want to perform this assessment for their clients and potential clients. It will be in both the designers' and the clients' interest to adopt practicable changes at the design stage to avoid or mitigate the effects of the applicable aircraft impact. It will also be in the designers' competitive interest to do so.

Description of the Beyond Design Basis Aircraft Characteristics

The proposed rule text includes a general description of the beyond design basis aircraft characteristics to allow public stakeholders to provide meaningful input during the comment period. The specific details of the aircraft characteristics will be issued in a separate document, which may contain Safeguards or SECRET Information. This regulatory approach is consistent with the NRC's approach for the design basis threat rule. The staff should provide the aircraft characteristics to plant designers (including their employees and agents) or other stakeholders who have the need to know and who meet the NRC's requirements for disclosure of such information. This information should be provided to the designers as soon as possible so that they can perform the aircraft impact assessments in a timely manner.

The SOCs for this proposed rule should include the expectation that new reactor designs incorporate design features to prevent a simultaneous loss of containment integrity and core cooling as a result of an aircraft impact. Incorporating this expectation in the design of the facility provides additional inherent safety margin beyond what has been achieved at the operating reactors through mitigative strategies. This expectation should also be shared with the reactor designers to help them in the analysis of the prospective designs.

In as much as the NRC will provide applicants with the design basis aircraft characteristics of a particular aircraft traveling at a particular speed with a particular fuel load, the resulting assessments performed by the applicants will serve to bound less conservative scenarios, but remains only one of an unlimited number of possible larger, faster beyond-design-basis aircraft impact scenarios. Therefore, I believe it is inappropriate to specify a specific assessment acceptance criteria in this proposed rule. To the contrary, I believe that the approach taken in this proposed rule is consistent with the historical and successful NRC approach to beyond-design-basis events, and will produce improved security compared to existing plants, just as NRC's approach to severe accidents has improved safety in new designs compared to existing plants.

Practicability

The proposed rule requires applicants to describe how the design and other features, "to the extent practicable," avoid or mitigate the effects of the applicable aircraft impact with reduced reliance on operator actions. The intent of this term is to allow designers to incorporate design features which are realistically and reasonably feasible from a technical engineering perspective. This allows the designers to evaluate potential competing technical factors, such as the response to earthquakes and passive safety systems, while at the same time addressing aircraft impacts. This approach is fully compatible with the Commission's approach to requiring a PRA in Section 50.34(f)(1)(i) which requires applicants to "seek such improvements in reliability of core and containment heat removal systems as are significant and practical and do not impact excessively on the plant".

Conclusion

I have laid out my proposal for new reactor designs to address beyond design basis aircraft impacts in this vote. I look forward to working with my colleagues on the Commission in a collegial manner to provide direction to the staff to issue the proposed rule. I realize that the staff must prepare the statements of consideration to support the proposed rule language before issuing the proposed rule for public comment. Therefore, I am asking my colleagues to vote in a timely fashion so that we may move the rule forward expeditiously.

Dale E. Klein