POLICY ISSUE
(Notation Vote)

September 25, 2007 SECY-07-0167

FOR: The Commissioners

FROM: Luis A. Reyes
Executive Director for Operations /RA/

SUBJECT: REVISION OF POLICY STATEMENT ON REGULATION OF ADVANCED REACTORS

PURPOSE:

To obtain Commission approval to publish in the *Federal Register* a final revision to the policy statement on regulation of advanced reactors. The revised statement will explicitly encourage applicants and prospective applicants to consider security at an earlier stage in their design.

BACKGROUND:

On July 8, 1986, the Commission published a policy statement on regulation of advanced reactors in the *Federal Register* (51 FR 24643). The Commission's primary objectives in issuing the advanced reactor policy statement were threefold:

- First, to maintain the earliest possible interaction of applicants, vendors, and government agencies with the Nuclear Regulatory Commission (NRC);

- Second, to provide all interested parties, including the public, with the Commission's views concerning the desired characteristics of advanced reactor designs; and

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- Third, to express the Commission's intent to issue timely comment on the implications of such designs for safety and the regulatory process.

On July 12, 1994, the Commission revised the 1986 advanced reactor policy statement (59 FR 35461) by addressing the Commission's policy on metrication (57 FR 46202, October 7, 1992), in order to encourage the use of the metric system of measurement by NRC licensees and license applicants.

Since the events of September 11, 2001, the NRC has assessed potential threats and their possible impacts on the Nation's fleet of operating nuclear power reactors and has required upgrades of physical security measures and mitigative strategies through the issuance of a series of security orders and license conditions. To codify requirements, similar to those imposed by these orders, the NRC is revising the physical protection regulations (71 FR 62664, October 26, 2006), for all operating and newly licensed nuclear power reactors.

Also, for new nuclear power reactors, in SECY-05-0120, "Security Design Expectations for New Reactor Licensing Activities," dated July 6, 2005, the staff considered it prudent to provide expectations and guidance on security matters to prospective applicants so that they could use this information early in the design stage to identify potential mitigative measures and/or design features that provide a more robust and effective security posture. In the Staff Requirements Memorandum (SRM) to SECY-05-0120, dated September 9, 2005, the Commission approved the staff's recommendation to revise the 1994 advanced reactor policy statement in order to integrate these expectations for security and preparedness with the current expectations for safety. The Commission has recently directed the staff to cease work on a draft proposed rule (10 CFR 73.62) for security assessment, and initiate in its place a proposed rule to add a new section to 10 CFR Part 52 ("Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Plants"). The addition would require applicants for new standard design certifications that do not reference a standard design approval; new standard design approvals; combined licenses that do not reference a standard design certification, standard design approval, or manufactured reactor; and new manufacturing licenses that do not reference a standard design certification or standard design approval, to perform an aircraft impact assessment. This assessment will include a description and evaluation of design features, functional capabilities, and strategies to avoid or mitigate the effects of an applicable, beyond-design-basis aircraft impact (SRM to SECY-06-0204, "Staff Requirements - SECY-06-0204 - Proposed Rulemaking - Security Assessment Requirements for New Nuclear Power Reactor Designs (RIN 31 50-AH92)," dated April 24, 2007).

DISCUSSION:

The advanced reactor policy statement is being revised to add the Commission's expectations on how security and preparedness considerations should be incorporated into the design for advanced reactors. Specifically, the following additional expectations would be added to the design attributes currently established for safety considerations:

- Designs that include considerations for safety and security requirements together in the design process such that security issues (e.g., newly identified threats of terrorist attacks) can be effectively resolved through (a) facility design and engineered security

features and (b) formulation of mitigative measures, with reduced reliance on human actions;

- Designs with features to prevent a simultaneous loss of (a) containment integrity (including situations where the containment is by-passed) and (b) ability to maintain core cooling as a result of an aircraft impact, or identification of system designs that would provide inherent delay in radiological releases (if prevention of release is not possible); and

- Designs with features to prevent loss of spent fuel pool integrity as a result of an aircraft impact.

Furthermore, the advanced reactor policy statement is being revised to include the expectation that the safety features of these advanced reactor designs will be complemented by the operational program for Emergency Planning (EP). This EP operational program, in turn, must be demonstrated by inspections, tests, analyses, and acceptance criteria to ensure effective implementation of established measures.

Also with this revision, the staff decided to delete obsolete descriptive details (e.g., relating to a former NRC organization, the Advanced Reactor Project Directorate in the Office of Nuclear Reactor Regulation), and to make other editorial improvements (including the staff's clarification on the nature of research activities performed by the applicants in support of a specific application).

RECOMMENDATIONS:

The staff recommends that the Commission approve for publication in the *Federal Register* the enclosed draft revision as a final revision to the 1994 advanced reactor policy statement, without soliciting comments from the public, for the following reasons:

- The expressed expectations for security design and integration of preparedness in the draft revised policy statement are straightforward and non-binding, and have been aired by the Commission in other venues.

- The public comments were and are being sought on implementation activities related to the policy statement, such as the proposed rule on aircraft impact assessments.

RESOURCES:

This revision to the 1994 advanced reactor policy statement does not result in a need for additional resources. All resource requirements related to security design expectations expressed in the policy statement are being addressed as parts of the associated implementation activities.

COORDINATION:

The Office of the General Counsel has reviewed this paper and has no legal objection.

/RA/

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Executive Director
for Operations

Enclosure:
Draft *Federal Register* Notice

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