

POLICY ISSUE INFORMATION

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SECY-02-0106

FOR: The Commissioners

FROM: William D. Travers
Executive Director for Operations

SUBJECT: REVIEW OF ACRS RECOMMENDATION FOR THE STAFF TO DEVELOP A
STANDARD REVIEW PLAN FOR POWER UPRATE REVIEWS

PURPOSE:

To inform the Commission of the results of the staff's review of the Advisory Committee on Reactor Safeguards (ACRS) recommendation to develop a standard review plan (SRP) to improve the effectiveness of power uprate reviews. This paper meets the Commission's direction in a Staff Requirements Memorandum (SRM) dated December 20, 2001.

SUMMARY:

The staff evaluated the ACRS recommendation to develop an SRP for improving the effectiveness of power uprate reviews and concluded that a greater level of standardization will improve the effectiveness of extended power uprate (EPU) reviews. The staff believes that standardization can best be accomplished by developing a review standard that will conceptually include (1) a clearer definition of the review scope, (2) references to existing review criteria (i.e., applicable SRP sections, branch technical positions, Office of Nuclear Reactor Regulation (NRR) office instructions, information notices, generic letters, bulletins, NUREGs, industry standards, applicable generic topical reports, etc.), and (3) two template safety evaluations (one for boiling-water reactor (BWR) plants and one for pressurized-water reactor (PWR) plants).

Contact: Mohammed A. Shuaibi, NRR
(301) 415-2859

This effort will be undertaken as part of and is consistent with NRR's new, broader initiative to develop review standards for a number of higher frequency licensing actions. The development of review standards is a key initiative that will help the staff meet management's expectations as described in the NRR Organizational Effectiveness Model. Another benefit of this effort will be the validation of existing review criteria and the identification of areas where additional or revised guidance may be necessary. If review criteria beyond those which currently exist are determined to be necessary, or if existing criteria are found in need of revision, the staff will initiate specific but separate efforts to develop or revise these criteria. The staff will also develop a communication plan to introduce the new concept of review standards to NRR staff and key internal and external stakeholders. These efforts will be integrated into NRR's centralized work planning processes.

Based on the staff's current assessment of the scope of this effort, the staff is targeting issuance of a draft EPU review standard for interim use and public comment by the end of calendar year 2002. The staff will seek endorsement from the Advisory Committee on Reactor Safeguards (ACRS) and the Committee to Review Generic Requirements (CRGR) following issuance of the draft review standard and prior to issuing the final review standard.

BACKGROUND:

The staff has been conducting power uprate reviews since the 1970s and has completed over 80 such reviews. Most of these reviews have been for lower power increases (i.e., power increases of up to 5 percent). The first EPU was approved for the Monticello plant in 1998. Since then, the staff has approved EPUs for Hatch Units 1 and 2, Duane Arnold, Dresden Units 2 and 3, Quad Cities Units 1 and 2, Clinton, Arkansas Nuclear One Unit 2, and Brunswick Units 1 and 2. The largest percentage increase in power approved by the staff via a power uprate is 20 percent.

The staff evaluated the development of an SRP for power uprates in early 2001 and provided the results of that evaluation to the Commission in SECY-01-0124, dated July 9, 2001. The staff described its process for reviewing power uprates and discussed ongoing activities that could affect this process. These activities included staff reviews of first-of-a-kind power uprate applications in the range of 10 to 20 percent, staff evaluation of the power uprate review process to make it more effective and efficient, and staff review of changes to the power uprate application process proposed by General Electric Nuclear Energy (GENE) via its Constant Pressure Power Uprate Topical Report. As a result of these activities, the staff concluded that the process was still dynamic and could go through several changes. The staff further concluded that developing an SRP section for power uprate reviews at that time would have been premature and not cost effective. The staff indicated that it would reevaluate the benefits of developing an SRP for power uprate reviews at a later date.

During the ACRS reviews of recent EPUs, the ACRS indicated that the depth and breadth of the staff's reviews of these uprates was adequate; however, the staff's documentation of its reviews in the safety evaluations should provide more details concerning the scope and focus of the reviews as well as the criteria used to reach conclusions. The ACRS further indicated that development of an SRP would help ensure adequate reviews by the staff of future power uprate applications and would also clarify to the public and licensees the acceptance criteria for power uprate applications.

During the December 5, 2001, Commission meeting, the ACRS recommended that the staff develop an SRP for power uprates. As a result, in an SRM dated December 20, 2001, the Commission directed the staff to review this ACRS recommendation and inform the Commission of the results of the review.

The staff has now completed its reviews of seven EPU applications (including first-of-a-kind EPUs in the range of 10 to 20 percent), held a public workshop on lessons learned from recent reviews of EPU applications, received input from NRC staff involved in the reviews as well as external stakeholders on areas for improvement in the power uprate application and review processes, and completed a large part of its review of the GENE Constant Pressure Power Uprate Topical Report. Based on the feedback received, experience gained to date, and the staff's assessment that the power uprate process has stabilized, the staff has reevaluated the benefits of developing review guidance for power uprates.

DISCUSSION:

The staff conducted a public workshop on March 19, 2002, to discuss lessons learned from recent reviews of EPU applications and obtain feedback on issues that should be pursued by the staff in process improvement efforts related to EPUs. The workshop included presentations from the staff and industry on recent experience with EPUs. The workshop also included breakout sessions during which groups of participants were formed and tasked with identifying areas that need improvement and ideas for how to improve them. The groups recommended that some form of guidance be developed for the scope and level of detail of information that licensees should include in their EPU applications. However, it was suggested that development of an SRP would be impractical as it would not be completed in time for the EPUs expected in the near term.

The staff evaluated the EPU application and review processes in light of the ACRS recommendation and stakeholder feedback received during the workshop and concluded that increased standardization of the staff's review processes could enhance the consistency, quality, and timeliness of the reviews. The staff believes that standardization can best be accomplished by developing a review standard that will conceptually include (1) a clearer definition of the review scope, (2) references to existing review criteria (i.e., applicable SRP sections, branch technical positions, NRR office instructions, information notices, generic letters, bulletins, NUREGs, industry standards, applicable generic topical reports, etc.), and (3) two template safety evaluations (one for BWR plants and one for PWR plants). Providing a clearer definition of the review scope for EPUs will allow the staff to focus its review efforts on the areas important to EPUs. Providing the staff with references to existing review criteria will allow the staff to more easily identify the criteria applicable to EPUs and complete the reviews more effectively and efficiently. References will be established by evaluating existing review criteria, including the current SRP, to validate their applicability to and currency for EPU reviews. If review criteria beyond those which currently exist are determined to be necessary, or if existing review criteria need to be updated and/or modified, the staff will initiate specific but separate efforts to develop and/or revise these criteria. In addition, results from ongoing work by the Office of Nuclear Regulatory Research related to high burnup fuel and its relationship to power uprates will be considered in the development of review criteria. The use of template safety evaluations will reinforce the appropriate scope and depth of review and provide the staff with the proper form and content of safety evaluations for EPUs. The staff believes that this will also improve the documentation of the staff's EPU reviews in the associated safety evaluations.

The staff's effort described above will be undertaken as part of and is consistent with NRR's new, broader initiative to develop review standards for a number of higher frequency licensing actions. In addition, the development of review standards is a key initiative that will help the staff meet management's expectations as described in the NRR Organizational Effectiveness Model. The staff will develop a communication plan to introduce the new concept of review standards to NRR staff and key internal and external stakeholders. These efforts will be integrated into NRR's centralized work planning processes.

Based on the staff's current assessment of the scope of this effort, the staff is targeting issuance of a draft EPU review standard for interim use and public comment by the end of calendar year 2002. The staff will inform the Commission of any changes to this schedule. The staff believes that issuing the draft review standard for interim use during the public comment period will address stakeholders' feedback regarding the need for guidance. The staff will seek endorsement from ACRS and CRGR following issuance of the draft review standard and prior to issuing the final review standard. The staff will consider internal and external stakeholder feedback in finalizing the review standard. In addition, inspection guidance will be developed within the Reactor Oversight Process to address EPU's in a risk-informed manner. Resources for the development of the review standard have been budgeted.

Development and use of the review standard will help the staff achieve its goal to conduct power uprate reviews in the most effective and efficient manner while maintaining safety. This is consistent with the Commission's direction contained in SRM COMNJD-01-0001, dated May 24, 2001. In addition, inspection guidance will be developed within the Reactor Oversight Process to address EPU's in a risk-informed manner. The staff also expects to gain a greater level of efficiency through the use of appropriate planning and scheduling tools.

RESOURCES:

Resources to develop this review standard are included in the FY 2002 and FY 2003 budgets. No additional resources will be required.

COORDINATION:

The Office of the Chief Financial Officer has reviewed this paper for resource implications and has no objections. The Office of the General Counsel has reviewed this paper and has no legal objection.

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William D. Travers
Executive Director
for Operations