UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555-0001

May 31, 2006

NRC REGULATORY ISSUE SUMMARY 2006-06
NEW REACTOR STANDARDIZATION NEEDED TO SUPPORT THE DESIGN-CENTERED LICENSING REVIEW APPROACH

ADDRESSEES

All current and potential applicants for an early site permit (ESP), combined operating license (COL), or standard design certification (DC) for a nuclear power plant under the provisions of the Title 10 Code of Federal Regulations (10 CFR) Part 52.

INTENT

The U.S. Nuclear Regulatory Commission (NRC) is issuing this regulatory issue summary (RIS) to explain the agency's design-centered review approach (DCRA) regarding DC and COL applications and the level of standardization of a particular design needed in order to make the DCRA effective. This RIS is intended to promote standardization of COL applications and to facilitate the establishment of a predictable and consistent method for reviewing applications. To this end, the NRC seeks voluntary submission of information regarding addressee schedules and plans for standardization. The concepts described in this RIS are consistent with Commission policy on standardization described in the Statement of Considerations for proposed 10 CFR Part 52 rule (53 *Federal Register* 32060, August 23, 1988) and apply to DCs and ESPs associated with the COLs. This RIS does not transmit or imply any new or changed requirements or staff positions. The provision of advance notice of addressee plans or comments is strictly voluntary; therefore, no specific action or written response is required.

BACKGROUND INFORMATION

SECY-06-0019 (Agencywide Documents Access and Management System Accession Number ML053530315), dated January 31, 2006, informed the Commission of the staff's intent to develop a comprehensive strategy to prepare the agency to review new reactor licensing applications. The staff has developed a strategy, referred to as the DCRA, which is based on a concept of industry standardization of COL applications referencing a particular design (e.g., COL applications referencing either the AP1000, ESBWR, ABWR, or EPR reactor designs). This approach will use, to the maximum extent practical, a "one issue, one review, one position" strategy in order to optimize the review effort, the resources needed to perform these reviews, and the review schedules. To clarify, the staff will conduct one technical review for each reactor design issue and use this one decision to support the decision on a DC and on multiple COL applications. In order for the DCRA to be fully effective, it is paramount that the DC and COL applicants achieve a consistent level of standardization among related COLs.

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Currently, the NRC envisions that its DCRA will focus reviews on four designs (AP1000, ESBWR, ABWR, and EPR) by using standardization and coordination of approaches and applications; call for complete and high-quality applications; increase the use of DC rulemaking to codify issue closure; and, to the maximum extent practicable, use a single technical evaluation to support multiple related COL applications. In order for the DCRA to be fully effective, it is essential that applicants referencing a particular design standardize their applications to the maximum extent practicable (standardize design features, analyses, assumptions, and methods) such that the technical review and decisions are made against a standard application, known as the reference COL (R-COL) application. If this is done, those decisions will be applicable to subsequent COL (S-COL) applications that reference the standard. The NRC's DCRA uses the DC review or the review of the R-COL as the basis for acceptance. The DC or R-COL application review will identify those technical areas to be considered standard for a given design (AP1000, ESBWR, ABWR, and EPR). S-COL applicants who use the standard application and actively work with the R-COL applicant to standardize will significantly benefit from the DCRA and the goal of having "one issue, one review, one position" for multiple COL applications.

SUMMARY OF ISSUE

Since applicants project submitting at least 12 COLs for NRC review in late FY 2007 and FY 2008, the NRC will be challenged with an unprecedented review effort. This situation requires an innovative approach to assure that the COL reviews can be completed on the desired schedule and that the quality of review will ensure that a license will not be granted for a new nuclear power plant unless it is operated so as to provide adequate protection of the public health and safety. To this end, the NRC staff intends to implement the DCRA, which is based on the concept of industry standardization of COL applications referencing a particular design (AP1000, ESBWR, ABWR, and EPR). Standardized applications would allow the staff, to the maximum extent practical, to use a "one issue, one review, one position" strategy to optimize the staff's review effort, the resources needed to perform reviews, and the review schedules.

The DCRA focuses the staff's review on the R-COL application and encourages other COL applicants referencing a particular design to standardize the overall design and their applications to the greatest extent possible by referencing the staff's review of the R-COL application. If the S-COL applicants maximize standardization, significant resource savings and schedule benefits can be realized. The DCRA permits significant streamlining of S-COL application reviews because standardization results in the review becoming a verification that the previously completed R-COL application review applies to S-COL applications rather than being a unique review. This reasoning, however, does not apply to those portions of the S-COL application setting forth unique site-specific matters that cannot be standardized. The NRC understands that applicants acknowledge that there are significant near-term licensing review and longer term operational benefits that can be realized through standardization and that applicants are willing to implement the level of standardization needed to make the DCRA an effective and efficient licensing review process.

As a supplement to the DCRA, the NRC recognizes that pre-COL application review of standard technical issues using the NRC's topical report process is an option that applicants could use to gain further COL review process efficiencies. The use of pre-application topical report reviews for complex design issues such as digital instrumentation and controls, human factors, piping design, and various operational programs could provide a greater assurance that

R-COL and S-COL application review schedules can further be optimized while ensuring the review remains clearly focused on safety.

During a February 21, 2006, public meeting, the NRC described the DCRA. The NRC staff believes that the key to success of the DCRA is consistent implementation of standardized COL submittals. The staff believes that standardization of an S-COL application is best achieved by incorporating the R-COL application into the S-COL application by reference and that those unique site-specific conditions that cannot be standardized should be clearly identified in the application. Alternate wording should not be used if standard wording may be applied. Use of alternate wording in portions of S-COL applications intended to be standardized may be interpreted as being a deviation from the R-COL.

The NRC staff may better prepare for its review of COL applications if it knows what matters will be standardized and what will not be standardized. The staff is seeking applicants' views as to what topics or issues will be standardized during the review of the R-COL and those that are likely to be addressed in site-specific submittals related to specific applications.

The NRC suggests that the COL applicants and applicant for certification of each design form a Design-Centered Working Group (DCWG). Such a group would facilitate standardization of COL applications and responses to NRC requests for additional information (RAIs). The NRC staff needs to know the applicants' intent to form DCWGs for each of the four designs (AP1000, ESBWR, ABWR, and EPR).

A key assumption in planning for COL reviews using the DCRA model is identification of the R-COL application for each design (AP1000, ESBWR, ABWR, and EPR) and the anticipated schedule for submitting each R-COL and S-COL application. It should be noted that this schedule information is essential for NRC resource planning.

Inevitably, during licensing reviews, such as review of COL applications, the NRC staff will have RAIs in order to complete its reviews. The DCRA necessitates that R-COL and S-COL applications have significant standardization, including responses to RAIs associated with these COL applications. To maintain the anticipated review schedules, applicants will need to adhere to an RAI response period.

The NRC staff believes that COL applications that contain insufficient standardization should be considered as deviating from the standardized COL application. The NRC will give priority to R-COL applicants and those S-COLs applicants that have standardized to the reference and have maximized the facilitation of the "one issue, one review, one position" strategy. For deviating applications, the NRC will establish a schedule and allocate resources to the review on an application-by-application basis.

VOLUNTARY RESPONSE

Currently, the NRC is developing its resource estimates and project plan for the DCRA strategy. To support this effort, the NRC is seeking more definitive information with respect to standardization, the use of topical reports by reactor vendors and applicants to resolve open design issues, and the schedules for submitting COL applications and any anticipated ESP applications. If an addressee chooses to provide a voluntary response, the NRC is interested in obtaining, within 45 days of the date of this RIS, information related to the following:

- Whether applicants for the four designs discussed in this RIS will be organized into DCWGs; if so, the schedule for such organization and, if a single point of contact is designated for the DCWG, the contact's identity.

- If a design-centered program is followed for a particular design, which applicant referencing the design will be designated as the R-COL applicant. In addition, when will (month and year) each of the COL applications be submitted for review?

- Whether applicants implementing the DCRA intend to provide RAI responses within the typical 30-day period.

- To what degree standardization will be achieved, appropriately documented, and replicated in COL applications. Specifically, what portions of the R-COL application (chapter by chapter, section by section, subsection by subsection) will be standardized (i.e., replicated verbatim) in S-COL applications and what portions of the application are likely to be site-specific.

- Whether, for each design-centered program, the vendor and applicants intend to submit pre-application topical reports for staff review. If so, how many? For each such report anticipated, please summarize the report scope and content and the proposed submittal schedule.

- Whether any applicants intend to apply for an ESP prior to submitting their COL applications. If so, when (month and year) would the proposed ESP be submitted to the NRC for review?

Addressees that choose to provide a voluntary response should send it to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001.

BACKFIT DISCUSSION

This RIS requires no action or written response. Any action on the part of addressees to provide information regarding standardization, advance notice of intent to pursue a combined license, or notification of changes in previously announced schedules for filing applications in accordance with the guidance contained in this RIS, for the purpose of aiding the NRC in planning the use of its resources, is strictly voluntary. Therefore, this is not a backfit under 10 CFR 50.109, and the staff did not perform a backfit analysis.

***FEDERAL REGISTER* NOTIFICATION**

A notice of opportunity for public comment on this RIS was not published in the *Federal Register* because it pertains to an administrative aspect of the regulatory process that involves the voluntary submission of information on the part of addressees.

SMALL BUSINESS REGULATORY ENFORCEMENT FAIRNESS ACT OF 1996

The NRC has determined that this action is not subject to the Small Business Regulatory Enforcement Fairness Act of 1996.

PAPERWORK REDUCTION ACT STATEMENT

This RIS contains information collection requirements that are subject to the Paperwork

Reduction Act of 1995 (44 U.S.C. 3501 et seq.). These information collections were approved by the Office of Management and Budget, approval number 3150-0011, which expires February 28, 2007.

The burden to the public for these voluntary information collections is estimated to average 8 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments regarding this burden estimate or any other aspects of these information collections, including suggestions for reducing the burden, to the Records and FOIA/Privacy Services Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet electronic mail to INFOCOLLECTS@NRC.GOV; and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0011), Office of Management and Budget (OMB), Washington, DC 20503.

PUBLIC PROTECTION NOTIFICATION

The NRC may not conduct or sponsor, and a person is not required to respond to, an information collection unless the requesting document displays a currently valid OMB clearance number.

CONTACT

Please direct any questions about this matter to the technical contact listed below.

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Note: NRC generic communications may be found on the NRC public website, http://www.nrc.gov, under Electronic Reading Room/Document Collections.

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