Design Certification Reviews

Message: **The standard design certification (DC) process allows an applicant to obtain approval of a reactor design through rulemaking. This reduces licensing uncertainty by resolving design issues early in the licensing process. It also facilitates standardization of future plants with a high degree of regulatory finality.**

1. The U.S. Nuclear Regulatory Commission (NRC) is currently performing three Design Certification (DC) reviews, one application to amend the Advanced Boiling Water Reactor (ABWR) design certification rule to address the requirements of the aircraft impact rule. Specifically, the NRC is reviewing: GE Hitachi Nuclear Energy's Economic Simplified Boiling Water Reactor (ESBWR), Westinghouse's AP1000 DC Amendment, AREVA Nuclear Power's US Evolutionary Power Reactor (EPR), and the Mitsubishi Heavy Industries, Ltd's US-Advanced Pressurized Water Reactor (US-APWR) designs. The NRC is also reviewing an ABWR DC rule amendment for aircraft impact.

2. The NRC is making good progress on DC reviews; however delays have resulted in some cases. Delays are primarily due to one or more of the following reasons: the applicant's performance, the submittal of design changes after the DC review is underway or first-of-a-kind design applications that can be difficult and/or time consuming to evaluate due to lack of standards or site specific data.

Key Points

- Some applicants made design changes to DC applications after the reviews have started. This caused delays in the review schedules. Examples of this tendency are the shield building and the spent fuel pool designs for the AP1000 DC amendment.

- Some applicants submitted DC applications that did not provide enough details to support the design, leading to frequent rounds of requests for additional information (RAIs) and review delays.

- Some applicants had difficulties responding to many RAIs in a timely manner with quality responses. Some RAI responses did not address the question or did not provide enough information to close an open item. This happened on the AP1000 DC amendment review and the EPR and ESBWR DC reviews.

- Some applicants chose first-of-a-kind applications with no applicable guidance documents or national codes or their designs included equipment that has never been used in operating reactors. This caused review delays. Examples of these are the gas turbine generators for US-APWR, passive designs reliability on DC power sources for extended duty cycles (72 hours), passive control room designs (ESBWR and AP1000), passive containment cooling (EPR), regulatory treatment of non-safety systems applications post accident, and the shield building design for AP1000.

Combined License Reviews and Reasons for Delays

Message: By issuing a combined license (COL), the U.S. Nuclear Regulatory Commission (NRC) authorizes the licensee to construct and (with specified conditions) operate a nuclear power plant at a specific site, in accordance with established laws and regulations. The NRC has not yet issued a COL (Part 52 license), but has established a new reactor program and a strong licensing infrastructure to support COL licensing. As of June 30, 2009, the NRC has received 18 COL applications for a total of 26 units, proposed for various locations throughout the nation.

1. The COL is a construction permit and an operating license. The Part 50 process, also called the two step licensing process, was used to license the current reactor fleet. It required a review and a hearing before issuance of a construction permit and a separate review and an opportunity for hearing before issuance of an operating license. The reviews for the construction permit and operating license were many years apart, leading to high financial risk for a utility building a plant without a license to operate it. With a COL under the Part 52 process, an applicant may get a license to operate the plant before major investment in construction.

2. Overall progress on COL application reviews is good. Three COL applications are now before the Commission's Advisory Committee on Reactor Safeguards. However, there have been difficulties with resolving design issues which led to schedule and resource impacts to COL application reviews. In some cases responsiveness and response content continue to challenge vendors and applicants. Furthermore, in some case, applicants are changing designs aspects or business strategies which also have impacted the COL application review schedules..

Key Points

- Delays in COL application reviews have resulted from one of more of the following reasons: 1) some applicants had difficulties in meeting NRC-issued schedules; 2) some applicants had difficulties in providing, at the detailed technical review stage, detailed information, such as site-specific data or test data required to confirm specific approaches or applications which they have chosen to pursue; 3) some applicants had difficulties keeping pace with DC design changes made after their COL applications were submitted; and 4) some applicants made design changes (i.e., design modifications or site layout changes) after the detailed safety and environmental reviews started.

- Furthermore, the NRC has suspended five reviews at the request of applicants who cited changing business strategies.

- The NRC continues to work with the applicants to ensure that they understand the regulatory process and the regulations. In addition, the NRC is taking a proactive approach to address schedule issues by actively engaging the applicants regarding their progress in meeting their established COL application review schedules.

New Reactor Hearing Process

Message: Section 189 of the Atomic Energy Act requires that the Commission hold hearings in proceedings that grant, suspend, revoke, or amend, Commission licenses.

1. Currently, seven Combined License (COL) proceedings have admitted contentions. One COL proceeding has a pending contention before the Atomic Safety and Licensing Board (ASLB).

2. Five COL proceedings are on appeal to the Commission.

Key Points

- The U.S. Nuclear Regulatory Commission (NRC or Commission) has specific rules of practice to make the hearing process effective and efficient.

- Depending on the type of facility being licensed, hearings can be uncontested, contested, or both.

- For uncontested hearings, the Commission will act as the presiding officer.

- In order to have a contested hearing a petitioner must file a request for hearing which demonstrates standing and includes at least one admissible contention in accordance with 10 CFR 2.309.

- A "contention" is an issue of law or fact regarding the application.

- Generally, the Commission refers requests for hearing to the ASLB Panel, which then assigns a three-member Board to rule on the request and conduct the hearing, if granted.

- If the Board denies the request for hearing, the petitioner may appeal the denial to the Commission. If the Board grants a hearing, and the applicant or staff think that the request should have been wholly denied, either may appeal the grant of the hearing to the Commission.

- If a hearing is granted, the hearing will be held under the Commission's rules of practice, 10 CFR Part 2, subpart L.

- The ASLB issues a decision to grant, deny, or amend the application. Decision may be appealed to the Commission. Appeal is discretionary.

- New reactor proceedings [Early Site Permits (ESPs), Combined Licenses (COLs)] utilize the same hearing procedures as other NRC licensing actions.

- However, COLs and ESPs are also subject to uncontested or mandatory hearings, meaning that a hearing will be held even in the absence of a request. Other types of proceedings, such as license renewals and license amendments only hold hearings upon request.