13.5 Plant Procedures

A COL applicant that references the U.S. EPR design certification will provide site-specific information for administrative, operating, emergency, maintenance and other operating procedures.

13.5.1 Administrative Procedures

As described in Section 13.5, specific information for procedures is provided by the COL applicant.

13.5.2 Operating and Maintenance Procedures

As described in Section 13.5, specific information for procedures is provided by the COL applicant.

13.5.2.1 Operating and Emergency Operating Procedure

As described in Section 13.5, specific information for procedures is provided by the COL applicant.

13.5.2.1.1 Emergency Operating Procedures Content

The emergency operating procedures (EOP) direct actions necessary for the operators to mitigate the consequences of transients and accidents that cause plant parameters to exceed reactor protection system or engineered safety features actuation setpoints. The EOPs also direct operators to verify automatic transient mitigation actions. For example, the U.S. EPR will perform automatic actions to aid mitigation of a medium break loss of coolant accident (LOCA) by performing a partial cooldown to provide adequate medium head safety injection (MHSI) flow into the reactor coolant system (RCS) (refer to Section 15.6.5.2). In addition, the EOPs direct operators to mitigate steam generator tube ruptures and accidents that occur during heatup or cooldown. The EOPs for the U.S. EPR are symptom-based procedures that provide guidance for the operator to mitigate transients without having to diagnose a specific event.

13.5.2.1.2 Emergency Operating Procedures Development Process

The EOPs for the U.S. EPR are based on generic U.S. EPR emergency procedure guidelines (EPG), which are part of a U.S. EPR Technical Bases Document that is developed by modifying the generic B&W Owners Group EOP Technical Bases Document (Reference 4) following FSAR submittal. The U.S. EPR Technical Bases Document is developed by:

- Using the same basic symptom approach and guideline structure that have been approved by the NRC for use on operating power plants as described in Reference 5.

- Addressing transient mitigation concerns previously identified in the development of the generic B&W EOP Technical Bases Document, along with any new transient mitigation concerns identified for new plant designs.

- Incorporating U.S. EPR specific analyses of both design bases events and beyond design bases events, as specified by NUREG-0737 and other requirements.

- Developing guidance that accounts for design differences between the U.S. EPR and the currently operating B&W plants. The effects of design differences are verified by examining the five control functions throughout the development process for the Technical Bases Document and Emergency Procedure Guidelines. The five control functions are identified in the B&W Unit EOP Technical Bases Document and include reactivity, RCS inventory, RCS pressure, secondary inventory and secondary pressure. Examining these five control functions verifies that each transient is mitigated and brought to a stable condition.

Any significant differences between the U.S. EPR Technical Bases Document and the B&W Unit EOP Technical Bases Document is identified to facilitate review of the EPGs to obtain NRC approval of the generic U.S. EPR EPGs.

13.5.2.1.3 Procedures Generation Package

A procedures generation package (PGP) will be developed which will consist of:

- Plant-specific technical guidelines (P-STG) that are developed from the generic EPGs. (These EPGs are based on analysis of transients and accidents that are specific to the applicant plant design and operating philosophy.)

  This P-STG documentation will include:

  – A description of the process which should be used to develop plant-specific guidelines from the generic guidelines.

  – Identification of significant deviations from the generic guidelines (including identification of additional equipment beyond that identified in the generic guidelines), along with all necessary engineering evaluations or analyses to support the adequacy of each deviation.

  – A description of the process used for identifying operator information and control requirements.

- A plant-specific "writer's guide" that details the specific methods to be used by the applicant in preparing EOPs based on P-STGs.

- A description of the program for verification and validation of EOPs. (A complete verification and validation of the EOPs will be performed for the initial plant. Subsequent plants will only need to verify and validate differences between those plants and the initial plant. Differences that will require additional verification and validation include differences in EOPs, differences in plant equipment/design, and differences in control room HSI design.)

- A description of the program for training operators on EOPs.

13.5.2.1.4 EOP Development Acceptance Criteria

The relevant requirements of these NRC regulations will be used as acceptance criteria during the development of the EPGs and EOPs:

A. 10 CFR 50.34(a)(6) and (10) and 10 CFR 50.34(b)(6)(iv) and (v).

B. 10 CFR 50, Appendix B, Criteria V and VI, establish criteria for development, approval, and control of procedures for all activities affecting quality.

C. The review criteria for procedures in NUREG-0711, Chapter 9, "Element 8 - Procedure Development" (Reference 6).

D. NUREG-0737, "Clarification of TMI Action Plan Requirements," item I.C.1, "Guidance for the Evaluation and Development of Procedures for Transients and Accidents" (emergency operating procedures only) (Reference 7).

E. Supplement 1 to NUREG-0737, Clarification of TMI Action Plan Requirements, items I.C.1 and I.C.9, "Requirements for Emergency Response Capability," Item 7, Subsections 7.1 and 7.2, "Upgrade of Emergency Operating Procedures" (emergency operating procedures only) (Reference 8).

F. The guidance of the Regulatory Position section of RG 1.33, Rev. 2.

G. ANS 3.2-1994: Administrative Controls and Quality Assurance for the Operational Phase of NPPs (American Nuclear Society, 1994), (Reference 9).

H. Appendix A to SRP, Section 13.5.2.1, "Guidelines for the Evaluation of Procedures Generation Packages" (emergency operating procedures only) (Reference 10).

I. Supplement 1 to NUREG-1358, "Lessons Learned from the Special Inspection Program for Emergency Operating Procedures," 1992 (Reference 11).

J. NUREG-1358, "Lessons Learned From the Special Inspection Program for Emergency Operating Procedures," Conducted March - October 1988 (Reference 12).

K. NUREG-0899, "Guidelines for the Preparation of Emergency Operating Procedures," August 1982 (Reference 13).

13.5.2.2 Maintenance and Other Operating Procedures

As described above in the introduction to Section 13.5, specific information for procedures is provided by the COL applicant.

Next File