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Safety Evaluation

Related to Issuance of

Facility Operating License DPR-80

Diablo Canyon Nuclear Power Plant, Unit 1

Docket No. 50-275

1. Introduction

This safety evaluation pertains to the issuance of Facility Operating License DPR-80 for Unit 1 of the Diablo Canyon Nuclear Power Plant authorizing facility operation at 100 percent of rated power. On September 22, 1981 the NRC issued Facility Operating License DPR-76 authorizing facility operation not in excess of 5 percent of rated power. Changes were made to the Technical Specifications and further license conditions were added to DPR-76 in Amendments 1 through 9 and in an Order to modify the License.

The staff has reviewed all provisions of license DPR-76, including those conditions previously proposed to be added to the license by an amendment authorizing full power operation, with respect to their applicability to the full power license DPR-80. A number of license conditions previously included in DPR-76 under Section 2.C have been satisfied and need not be reinstated or have been revised because the required action has been partially or totally completed, or a regulation has since been issued which encompasses the requirements of the license condition. The inclusion of new license conditions and issuance of full power Technical Specifications was previously addressed by the staff in Supplement 27 to the Safety Evaluation Report (SSER-27) dated July 1984.

Presented below is the staff evaluation for a revision to a previously proposed license condition regarding masonry walls (SSER-27, Section II.4 and IV.4) and the deletion of certain exemptions regarding fracture toughness, previously included in Section 2.D of DPR-76.

2. Masonry Walls

In SSER-27, Sections II.4 and IV.4, the staff indicated that there continued to be a need for a license condition regarding certain additional information comparing the licensee's criteria with staff criteria for evaluation of masonry walls. Since that time, the staff has conducted a site visit which included a number of discussions with the licensee, and review of additional documentation including test results. This has permitted a more detailed understanding of the licensee's criteria. As a result, the staff concludes that there is reasonable assurance that these walls will remain functional in the event of a design earthquake and that applicable regulations are met.

However, it is still necessary for the licensee to document its analysis of the differences in margins when comparing its criteria to staff criteria even though it is not likely that structural change will result from this evaluation. The proposed license condition as discussed in SSER-27 has therefore been revised accordingly and is included under Section 2.C(10).

3. Compliance with Appendices G and H to 10 CFR Part 50 (Fracture Toughness)

In Section 2.D of the low power license DPR-76 exemptions were granted from certain requirements, among others, of Appendices G and H as related to fracture toughness. These exemptions have been deleted from the full power license DPR-80 as discussed below.

In previous safety evaluations (Supplement Nos. 9 and 13) the staff determined that exemptions to Sections III.C.2 and IV.A.4 of Appendix G to 10 CFR 50 and Section II.B of Appendix H to 10 CFR 50 would be required and were justified. Since those evaluations were published, Appendices G and H have been revised. The revised Appendices G and H were published in the Federal Register on May 27, 1983 and became effective on July 26, 1983. The exemptions to Appendices G and H, which were discussed in our previous safety evaluations, are no longer required, because the Diablo Canyon, Unit 1 materials and surveillance program complies with the revised Appendices G and H requirements. A discussion of these requirements follows.

Section III.C.2 and IV.A.4 in previous versions of Appendix G had specific requirements for preparation of reactor vessel beltline weld metal test specimens and minimum fracture toughness requirements for reactor coolant pressure boundary ferritic bolting, respectively. In lieu of these specific requirements, the current provisions of Appendix G require that reactor vessel beltline weld metal test specimens and reactor coolant pressure boundary ferritic bolting comply with the requirements in ASME Code edition and addenda permitted by section 50.55a of 10 CFR 50. In a previous safety evaluation we determined that the reactor vessel for Diablo Canyon, Unit 1 was fabricated to ASME Code edition and addenda as provided by the requirements of section 50.55a. Hence, the Diablo Canyon, Unit 1 materials comply with the revised Appendix G requirements and exemptions to Appendix G are no longer required.

Section II.B in previous versions of Appendix H required that the surveillance program conducted prior to the first capsule withdrawal comply with the 1973 edition of ASTM E-185. The current provision of Appendix H requires that the surveillance program conducted prior to the first capsule withdrawal comply with the requirements of the edition of ASTM E-185 that is current on the issue date of the ASME Code to which the reactor vessel was purchased. The Diablo Canyon, Unit 1 surveillance program complies with these requirements. Hence, the Diablo Canyon, Unit 1 surveillance program complies with the revised Appendix H requirements and an exemption to Appendix H is no longer required.