GE Nuclear Energy

General Electric Company
175 Curtner Avenue, San Jose, CA 95125

May 3, 1993

Docket No. STN 52-001

Chet Poslusny, Senior Project Manager
Standardization Project Directorate
Associate Directorate for Advanced Reactors
and License Renewal
Office of the Nuclear Reactor Regulation

Subject: Submittal Supporting Accelerated ABWR Review Schedule - **ABWR Thermal Insulation**

Dear Chet:

The purpose of this letter is to correct my April 27, 1993 letter of the same subject. Specifically, I inadvertently omitted "not" in the third sentence of marked up Subsection 6.1.1.1.3.4. Also, this markup will be included in Amendment 29 rather than Amendment 28; Amendment 28 is now reserved for Chapter 19.

Sincerely,

Jack Fox

Jack Fox
Advanced Reactor Programs

cc: Norman Fletcher (DOE)
Maryann Herzog (GE)

See attached list

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JF93-131

6.1 ENGINEERED SAFETY FEATURE MATERIALS

Materials used in the engineered safety feature (ESF) components have been evaluated to ensure that material interactions do not occur that can potentially impair operation of the ESF. Materials have been selected to withstand the environmental conditions encountered during normal operation and any postulated accident. Their compatibility with core and containment spray solutions has been considered, and the effects of radiolytic decomposition products have been evaluated.

Coatings used on exterior surfaces within the primary containment are suitable for the environmental conditions expected. Only metallic insulation is used inside containment, except for duct and antisweat insulation. All nonmetallic thermal insulation employed is required to have the proper ratio of leachable sodium plus silicate ions to leachable chloride plus fluoride (Regulatory Guide 1.36), in order to minimize the possible contribution to stress corrosion cracking of austenitic stainless steel.

6.1.1 Metallic Materials

6.1.1.1 Materials Selection and Fabrication

6.1.1.1.1 Material Specifications

Table 5.2-4 lists the principal pressure-retaining materials and the appropriate materials specifications for the reactor coolant pressure boundary (RCPB) components. Table 6.1-1 lists the principal pressure-retaining materials and the appropriate material specifications of the primary containment system, the emergency core cooling systems and their auxiliary systems and the standby liquid control system. The ESF materials selected satisfy Appendix I to Section III of the ASME Code and Parts A, B, and C of Section II of the code.

6.1.1.1.2 Compatibility of Construction Materials with Core Cooling Water and Containment Sprays

All materials of construction used in essential portions of these systems are resistant to corrosion, both in the medium contained and the external environment. General corrosion of all materials, except carbon and low-alloy steel, is negligible. Conservative corrosion allowances are provided for all exposed surfaces of carbon and low-alloy steel. Special allowances are made for the standby liquid control system which contains sodium pentaborate solution.

Demineralized water, with no additives, is employed in BWR core cooling water and containment sprays. (See Subsections 9.2.6 and 9.2.9 for a description of the water quality requirements.) Leaching of chlorides from concrete and other substances is not significant. No detrimental effects occur on any of the ESF construction materials from allowable containment levels in the high-purity water. Thus, the materials are compatible with the post-LOCA environment.

6.1.1.1.3 Controls for Austenitic Stainless Steel

6.1.1.1.3.1 Control of the Use of Sensitized Stainless Steel

Controls to avoid severe sensitization are discussed in Subsection 5.2.3.4.1.1

6.1.1.1.3.2 Process Controls to Minimize Exposure to Contaminants

Process controls for austenitic stainless steel are discussed in Subsection 5.2.3.4.1.2.

6.1.1.1.3.3 Use of Cold Worked Austenitic Stainless Steel

Nonmetallic thermal insulation materials are

Austenitic stainless steel with a yield strength greater than 90,000 psi is not used in essential coolant systems.

6.1.1.1.3.4 Thermal Insulation Requirements

and 1.82 shall be

~~Nonmetallic~~ thermal insulation materials used on ESF systems ~~were~~ selected, procured, tested and stored in accordance with Regulatory Guide 1.36. ~~Inculation is~~ required to have the proper ratio of leachable sodium plus silicate ions to leachable chloride plus fluoride ions as specified in Regulatory Guide 1.36. Insulation shall be tested to confirm that insulation debris resulting from a LOCA will not prevent the operation of the core cooling water and containment spray systems 6.1-1 as specified in Regulatory Guide 1.82.