GE Nuclear Energy

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

April 28, 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 - **NUREG-03131 (Revision 2)**

Dear Chet:

Enclosed is a SSAR markup adding Revision 2 to NUREG-0313. This revision was inadvertently removed on Amendment 15.

Please provide a copy of this transmittal to George Georgiev.

Sincerely,

Jack Fox

Jack Fox
Advanced Reactor Programs

cc: Norman Fletcher (DOE)

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imposed by the guide were satisfied by the ASME Code.

Wrought tubular products are supplied in accordance with applicable ASTM/ASME material specifications. Additionally, the specification for the tubular products used for CRD housings specified ultrasonic examination to paragraph NB-2550 of ASME Code Section III.

These RCPB components meet 10CFR50 Appendix B requirements and the ASME Code requirements thus assuring adequate control of quality for the products.

5.2.3.3.4 Moisture Control for Low Hydrogen, Covered Arc Welding Electrodes

Suitable identification, storage, and handling of electrodes, flux, and other welding material will be maintained. Precautions shall be taken to minimize absorption of moisture by electrodes and flux.

5.2.3.4 Fabrication and Processing of Austenitic Stainless Steels

5.2.3.4.1 Avoidance of Stress/Corrosion Cracking

5.2.3.4.1.1 Avoidance of Significant Sensitization

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When austenitic stainless steels are heated in the temperature range 427° - 982°C, they are considered to become "sensitized" or susceptible to intergranular corrosion. The ABWR design complies with Regulatory Guide 1.44 and with the guide lines of NUREG-0313/ to avoid significant sensitization.

Process controls are exercised during all stages of component manufacturing and construction to minimize contaminants. Cleanliness controls are applied prior to any elevated temperature treatment. For applications where stainless steel surfaces are exposed to water at temperatures above 93°C low carbon (<0.03%) grade materials are used. For critical applica- tions, nuclear grade materials (carbon content ≤ 0.02%) are used. All materials are supplied in the solution heat treated condition. Special sensitization tests are applied to assure that the material is in the annealed condition.

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During fabrication, any heating operation (except welding) between 427° - 982°C are avoided, unless followed by solution heat treatment. During welding, heat input is controlled. The interpass temperature is also controlled. Where practical, shop welds are solution heat treated. In general, weld filler material used for austenitic stainless steel base metals is Type 308L/316L/309L with an average of 8% (of Fn) ferrite content.

5.2.3.4.1.2 Process Controls to Minimize Exposure to Contaminants

Exposure to contaminants capable of causing stress/corrosion cracking of austenitic stainless steel components was avoided by carefully controlling all cleaning and processing materials which contact the stainless steel during manufacture, construction, and installation.

Special care was exercised to insure removal of surface contaminants prior to any heating operations. Water quality for cleaning, rinsing, flushing, and testing was controlled and monitored. Suitable protective packaging was provided for components to maintain cleanliness during shipping and storage.

The degree of surface cleanliness obtained by these procedures meets the requirements of Regulatory Guides 1.37 and 1.44.