GE Nuclear Energy

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

March 25, 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 - Structural Open Items**

Dear Chet:

Enclosed are SSAR markuups that address DSFER Open Items 3.2.1-1, 3.2.1-2, 3.7.2-6 3.7.2-7 and 3.8.4-1. These markups reflect the discussions held at the Structural Audit held in San Francisco, California on February 22-25, 1993.

Please provide a copy of this transmittal to Dave Terao and Tom Cheng.

Sincerely,

Jack Fox

Jack Fox
Advanced Reactor Programs

cc: Gary Ehlert (GE)
Norman Fletcher (DOE)

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NOTES (Continued)

n. All cast pressure-retaining parts of a size and configuration for which volumetric methods are effective are examined by radiographic methods by qualified personnel. Ultrasonic examination to equivalent standards is used as an alternate to radiographic methods. Examination procedures and acceptance standards are at least equivalent to those defined in Paragraph 136.4, Nonboiler External Piping, ANSI B31.1.

o. The following qualifications are met with respect to the certification requirements:

1. The manufacturer of the turbine stop valves, turbine control valves, turbine bypass valves, and main steam leads from turbine control valve to turbine casing utilizes quality control procedures equivalent to those defined in GE Publication GEZ-4982A, General Electric Large Steam Turbine Generator Quality Control Program.

2. A certification obtained from the manufacturer of these valves and steam loads demonstrates that the quality control program as defined has been accomplished.

The following requirements shall be met in addition to the Quality Group D requirements:

1. All longitudinal and circumferential butt weld joints shall be radiographed (or ultrasonically tested to equivalent standards). Where size or configuration does not permit effective volumetric examination, magnetic particle or liquid penetrate examination may be substituted. Examination procedures and acceptance standards shall be at least equivalent to those specified as supplementary types of examinations, Paragraph 136.4 in ANSI B31.1.

2. All fillet and socket welds shall be examined by either magnetic particle or liquid penetrate methods. All structural attachment welds to pressure retaining materials shall be examined by either magnetic particle or liquid penetrate methods. Examination procedures and acceptance standards shall be at least equivalent to those specified as supplementary types of examinations, Paragraph 136.4 in ANSI B31.1

3. All inspection records shall be maintained for the life of the plant. These records shall include data pertaining to qualification of inspection personnel, examination procedures, and examination results.

p. A quality assurance program meeting the guidance of Regulatory Guide 1.143 will be applied during design and construction.

q. Detailed seismic design criteria for the offgas system are provided in Subsection 11.3.4.8.

r. The main steam lines from the containment outboard isolation valves and all branch lines 2-1/2 inches in diameter and larger, up to and including the first valve (including lines and valve supports) are designed by the use of an appropriate dynamic seismic system analysis to withstand the operating bases earthquake (OBE) and safe shutdown earthquake (SSE) design loads in combination with other appropriate loads, within the limits specified for Class 2 pipe in the ASME Section III. The mathematical model for the dynamic seismic analyses of the main steam lines and branch line piping includes the turbine stop valves and piping to the turbine casing and the turbine bypass valves and piping to the condenser. The dynamic input loads for design of the main steam lines in the reactor building and the control building are drived from a time history model analysis or an equivalent method as described in Section 3.7.

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Additions to SSAR Subsection 3.2

Insert A

Dynamic input loads for the design of the main steam lines in the turbine building are derived as follows: For locations on the basemat, the ARS shall be based upon Regulatory Guide 1.60 Response spectra normalized to 0.6g (i.e., 2 times ARS of the site envelope). For locations at the operating deck level (either operating deck or turbine deck), the ARS used shall be the same as used at the reactor building end of the mainsteam tunnel. Seismic Anchor motions shall be similarly calculated.

Additions to SSAR Subsection 3.7

Replace insert 5 of February 12, 1993 transmittal with the following:

3.7.3.16 Analysis Procedure for NonSeismic Structures In Lieu of Dynamic Analysis

For the design if non-seismic category I structures, the procedures described in the Uniform Building Code (UBC) seismic design criteria shall be followed.

Where a structure is required to be designed to withstand a SSE. The following limitations apply:

(1) The seismic zone shall be "Zone 3",

(2) The structure shall be classified as "Essential Facility"; thereby using appropriate importance factors for wind and seismic, and

(3) For dual systems (i.e., shear wall with braced steel frame), one of the two systems must be designed to be capable of carrying all of the seismic or wind loading without collapse. No credit will be given for the other for resisting lateral loads.