



U.S. NUCLEAR REGULATORY COMMISSION
STANDARD REVIEW PLAN

BRANCH TECHNICAL POSITION 3-2

CLASSIFICATION OF BWR/6 MAIN STEAM AND FEEDWATER COMPONENTS OTHER THAN THE REACTOR COOLANT PRESSURE BOUNDARY

REVIEW RESPONSIBILITIES

Primary - Organization responsible for mechanical engineering reviews

Secondary - Organizations responsible for the review of component performance and testing

A. BACKGROUND

At various times, the NRC staff has discussed with the General Electric Company the subject of appropriate classification criteria in boiling water reactor (BWR) plants for main steam system components. These discussions have included consideration of components that are (a) not classified as safety related items but are located downstream of the isolation valves, (b) not specifically designed to seismic Category I standards, and (c) not housed in Seismic Category I structures.

To date, BWR plant reviews have resulted in various approaches for different individual applications. While these different approaches have resulted in acceptable levels of safety in each case, they have necessitated time-consuming case-by-case reviews. The GESSAR (PDA) BWR/6 application, which was reviewed as part of the NRC's standardization program, includes this portion of the BWR plant.

Revision 2 - March 2007

USNRC STANDARD REVIEW PLAN

This Standard Review Plan, NUREG-0800, has been prepared to establish criteria that the U.S. Nuclear Regulatory Commission staff responsible for the review of applications to construct and operate nuclear power plants intends to use in evaluating whether an applicant/licensee meets the NRC's regulations. The Standard Review Plan is not a substitute for the NRC's regulations, and compliance with it is not required. However, an applicant is required to identify differences between the design features, analytical techniques, and procedural measures proposed for its facility and the SRP acceptance criteria and evaluate how the proposed alternatives to the SRP acceptance criteria provide an acceptable method of complying with the NRC regulations.

The standard review plan sections are numbered in accordance with corresponding sections in Regulatory Guide 1.70, "Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants (LWR Edition)." Not all sections of Regulatory Guide 1.70 have a corresponding review plan section. The SRP sections applicable to a combined license application for a new light-water reactor (LWR) are based on Regulatory Guide 1.206, "Combined License Applications for Nuclear Power Plants (LWR Edition)."

These documents are made available to the public as part of the NRC's policy to inform the nuclear industry and the general public of regulatory procedures and policies. Individual sections of NUREG-0800 will be revised periodically, as appropriate, to accommodate comments and to reflect new information and experience. Comments may be submitted electronically by email to NRR_SRP@nrc.gov.

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In the course of the GESSAR PDA review, the NRC staff has identified a systematic basis for classification of such components that will result in an acceptable and uniform design basis for the main steam lines (MSL) and main feedwater lines (MFL) in BWR/6 plants.

B. BRANCH TECHNICAL POSITION

The main steam and feedwater system components of BWR/6 plants should be classified in accordance with Branch Technical Position (BTP) 3-1, or alternately, in accordance with the attached Table B-1. The classifications indicated are consistent with the guidelines currently specified in RG 1.26 and RG 1.29.

As an additional criterion, a suitable interface restraint should be provided at the point of departure from the Class I structure where the interface exists between the safety and nonsafety-related portions of the MSL and MFL.

A sketch is attached (Figure B-1) to clarify the specified alternate classification system.

C. REFERENCES

1. Regulatory Guide 1.26, "Quality Group Classification and Standards for Water-, Steam-, and Radioactive-Waste-Containing Components of Nuclear Power Plants."
2. Regulatory Guide 1.29, "Seismic Design Classification."
3. Letter of April 19, 1974, J. M. Hendrie to J. A. Hinds.
4. ANSI/ASME B31.1, "Power Piping," American National Standards Institute (1973).
5. GEZ-4982A, "General Electric Large Steam Turbine - Generator Quality Control Program."

Table B-1

CLASSIFICATION CRITERIA FOR BWR/6 MAIN STEAM AND FEEDWATER SYSTEM COMPONENTS OTHER THAN THE REACTOR COOLANT PRESSURE BOUNDARY

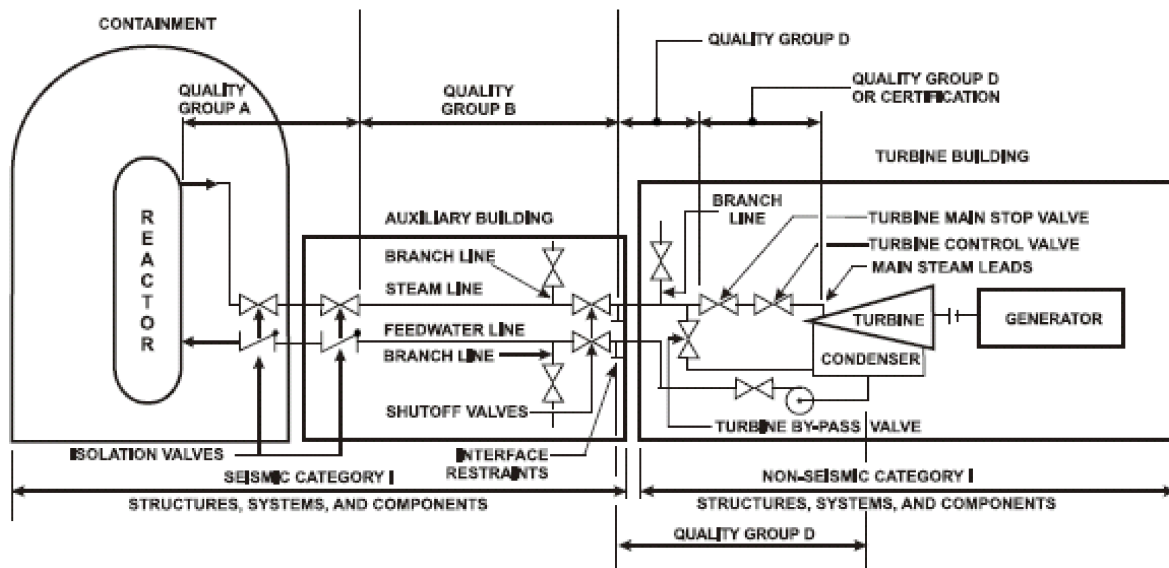
ITEM	SYSTEM OR COMPONENT	QUALITY GROUP CLASSIFICATION
1.	Main Steam Line (MSL) from second isolation valve to and including shutoff valve.	B
2.	Branch lines of MSL between the second isolation valve and the MSL shutoff valve, from branch point at MSL to and including the first valve in the branch line.	B
3.	Main feedwater line (MFL) from second isolation valve and including shutoff valve.	B
4.	Branch lines of MFL between the second isolation valve and the MFL shutoff valve, from the branch point at MFL to and including the first valve in the branch line.	B
5.	Main steam line piping between the MSL shutoff valve and the turbine main stop valve.	D (1)
6.	Turbine bypass piping.	D
7.	Branch lines of the MSL between the MSL shutoff valve and the turbine main stop valve.	D
8.	Turbine valves, turbine control valves, turbine bypass valves, and main steam leads from the turbine control valves to the turbine casing.	D (1,2) or Certification (3)
9.	Feedwater system components beyond the MFL shutoff valve.	D

(1) All inspection records should be maintained for the life of the plant. These records should include data pertaining to qualification of inspection personnel, examination procedures, and examination results.

(2) All cast pressure-retaining parts of a size and configuration for which volumetric methods are effective should be examined by radiographic methods by qualified personnel. Ultrasonic examination to equivalent standards may be used as an alternate to radiographic methods. Examination procedures and acceptance standards should be at least equivalent to those defined in Paragraph 136.4, "Examination Methods of Welds - Non-Boiler External Piping," ANSI B31.1-1973.

Table B-1 (continued)

- (3) The following qualifications should be met with respect to the certification criteria:
- a. The manufacturer of the turbine stop valves, turbine control valves, turbine bypass valves, and main steam leads from turbine control valves to the turbine casing should utilize quality control procedures equivalent to those defined in General Electric Publication GEZ-4982A, "General Electric Large Steam Turbine-Generator Quality Control Program."
 - b. A certification should be obtained from the manufacturer of these valves and steam leads that the quality control program so defined has been accomplished.



**FIGURE B-1
NRC QUALITY GROUP AND SEISMIC CATEGORY CLASSIFICATIONS
APPLICABLE TO POWER CONVERSION SYSTEM
COMPONENTS IN BWR/6 PLANTS.**

PAPERWORK REDUCTION ACT STATEMENT

The information collections contained in the Standard Review Plan are covered by the requirements of 10 CFR Part 50 and 10 CFR Part 52, and were approved by the Office of Management and Budget, approval number 3150-0011 and 3150-0151.

PUBLIC PROTECTION NOTIFICATION

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