

NORTHEAST UTILITIES



THE CONNECTICUT LIGHT AND POWER COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
HOLYOKE WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

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October 19, 1982
Docket No. 50-245
A02513

Director of Nuclear Reactor Regulation
Attn: Mr. Dennis M. Crutchfield, Chief
Operating Reactors Branch #5
U. S. Nuclear Regulatory Commission
Washington, DC 20555

References: (1) J. J. Shea letter to W. G. Council dated,
May 5, 1982.

Gentlemen:

Millstone Nuclear Power Station, Unit No. 1
SEP Topic III-1, Quality Group Classification
of Components and Systems

In Reference (1), the Staff forwarded the draft evaluation of SEP Topic III-1, Quality Group Classification of Components and Systems, for Millstone Unit No. 1. Northeast Nuclear Energy Company (NNECO) has reviewed Reference (1) and made corrections as indicated on the attached pages. The information included on these tables represents the best data available to NNECO concerning design codes used for the manufacture of these components. Extensive review of plant and purchasing records yielded no significant results beyond that information already provided.

To address the remaining open items, NNECO intends the following:

Fracture Toughness

NNECO will attempt to verify whether these components are exempted from fracture toughness requirements, or will evaluate on a sampling basis, whether the fracture toughness is sufficient to ensure integrity of the components.

Radiography

NNECO will attempt to verify whether or not these items have been radiographed or volumetrically inspected, and if provisions 2 and 3 of Code Case N-7 were applied to certain components.

Valves

NNECO will attempt to verify (on a sample basis) whether the design of valves meets current body shape and pressure-temperature rating requirements.

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Pumps

NNECO will evaluate pumps designed to standards other than ASME codes to determine whether adequate safety margins exist.

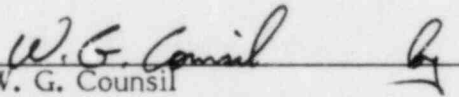
Storage Tanks

For those safety-related tanks designed to codes other than ASME III or VIII, NNECO will evaluate the codes and standards used with respect to current standards. In addition, NNECO will attempt to verify that atmospheric storage tanks meet current compressive stress requirements and that the 0 to 15 psig storage tanks meet current tensile stress allowables for biaxial stress field connections.


Due to the large scope of work outlined above, these evaluations will be performed on a schedule independent of the Integrated Assessment. NNECO intends to incorporate the results of the above evaluations in the Final Safety Analysis Report (FSAR) update pursuant to 10CFR50.71(e)(3)(ii).

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY



W. G. Council
Senior Vice President



By: R. W. Bishop
Corporate Secretary

Table 4-1 (Cont.)

<u>Structures, Systems, and Components</u>	<u>Quality Classification</u>		<u>Seismic Classification</u>		<u>Remarks</u>
	<u>Codes and Standards RG 1.26 (1)</u>	<u>Codes and Standards Used in Plant Design</u>	<u>RG 1.29</u>	<u>Used in Plant Design</u>	
Piping, Fittings, and Valves	ASME III Class 2	ASA B31.1 (1955)	Category I	Class I	
Spray Header and Sparqers	ASME III Class 2	ASA B31.1 (1955)	Category I	Class I	
<u>Low Pressure Coolant Injection/Containment Coolant Subsystem</u>					
Pumps	ASME III Class 2	ASME III (1965) Class C	Category I	Class I	
Piping, Fittings, and Valves	ASME III Class 2	ASA B31.1 (1955)	Category I	Class I	
Containment and Suppression Spray Headers	ASME III Class 2	ASA B31.1 (1955)	Category I	Class I	
Heat Exchangers					
Tube Side	ASME III Class 2	ASME III (1965) Class C	Category I	Class I	
Shell Side	ASME III Class 3	ASME III (1965) Class C	Category I	Class I	
Containment Cooling Subsystem	ASME III Class 3	ASA B31.1 (1955)	Category I	Class I	
Pumps	ASME III Class 3	?	Category I	Class I	

3. It is more likely that ASA B31.1 (1955) would have been used for design than ASME III.

*These pumps are the LPCI pumps (see above).

Table 4-1 (Cont.)

<u>Structures, Systems, and Components</u>	<u>Quality Classification</u>		<u>Seismic Classification</u>		<u>Remarks</u>
	<u>Codes and Standards RG 1.26 (1)</u>	<u>Codes and Standards Used in Plant Design</u>	<u>RG 1.29</u>	<u>Used in Plant Design</u>	
<u>Feedwater Coolant Injection</u>					
Piping, Fittings, and Valves	ASME III Class 2	ASA B31.1 (1955)	Category I	Class I	
Spargers	ASME III Class 2	ASA B31.1 (1955)	Category I	Class I	Feedwater spargers used
<u>Feedwater Heat Exchangers</u>					
Tube Side	ASME III Class 2	ASME III (1965) Class B	Category I	Class I	
Shell Side	?	?	Category I	Class I	
Pumps (Condensate, Condensate Booster, Feedwater, Condensate Transfer)	ASME III Class 2	Manufacturer's Standards	Category I	Class I	
Condenser Hotwell, Piping, and Valves from Condenser Hotwell to the Reactor Vessel	ASME III Class 2	ASA B31.1 (1955)	Category I	Class I	
<u>Automatic Pressure Relief Subsystem (ADS)</u>					
Valves	ASME III Class 1	ASME III (1965) (3,4) Class A	Category I	Class I	
Discharge Piping	ASME III Class 1	ASME III (1965) (3,4) Class C	Category I	Class I	

4. This information was not directly given in original table, but was inferred from the Licensee's submittal which indicated Class 1 or Class 3.

Table 4-1 (Cont.)

<u>Structures, Systems, and Components</u>	<u>Quality Classification</u>		<u>Seismic Classification</u>		<u>Remarks</u>
	<u>Codes and Standards RG 1.26 (1)</u>	<u>Codes and Standards Used in Plant Design</u>	<u>RG 1.29</u>	<u>Used in Plant Design</u>	
<u>CONTAINMENT PENETRATIONS VALVES AND PIPING</u>	ASME III Class 2	ASME III (1965) (5)	Category I	Class I	Is this a reference to Appendix I of the Code?
<u>CONTROL ROD DRIVE HOUSING</u>	ASME III Class 1	?	Category I	Class I	
<u>CONTROL ROD DRIVE SYSTEM</u>	ASME III Class 2	?	Category I	Class I	
<u>SPENT FUEL STORAGE FACILITIES</u>					
Spent Fuel Pool	ASME III Class 3	--	Category I	Class I	NA
Pumps	ASME III Class 3	Manufacturer's Standards	Category I	Class I	
Heat Exchangers	ASME III Class 3	ASME VIII (1965) TEMA Class R	Category I	Class I	

Table 4-1 (Cont.)

Structures, Systems, and Components	Quality Classification		Seismic Classification		Remarks
	Codes and Standards RG 1.26 (1)	Codes and Standards Used in Plant Design	RG 1.29	Used in Plant Design	
<u>EMERGENCY SERVICE</u>					
<u>WATER SYSTEM</u>					
Heat Exchangers	ASME III Class 3	ASME III (1965) Class C	Category I	Class I	Covered in LPCI/Con- tainment Cooling Subsystem
Pumps		Manufacturer's Standards			
<u>TURBINE BLDG. SECONDARY</u>					
<u>COOLING WATER SYSTEM</u>					
Piping, Fittings, and Valves	ASME III Class 3	ASA B31.1 (1955)	Category I	Class I	
Heat Exchangers	ASME III Class 3	ASME VIII (1965) TEMA Class R	Category I	Class I	
<u>STRUCTURES</u>					
Reactor Building	---	---	Category I	Class I	NA
Drywell, Suppression Chamber Vents, and Penetrations (Primary Containment)	ASME III MC	ASME III (1965) Class B	Category I	Class I	NA
Control Room	---	---	Category I	Class I	NA

7. This information was provided in the original NRC package [11], but was deleted from the Licensee's submittal [4]. Therefore, this information requires confirmation.

Table 4-1 (Cont.)

Structures, Systems, and Components	Quality Classification		Seismic Classification		Remarks
	Codes and Standards RG 1.26 (1)	Codes and Standards Used in Plant Design	RG 1.29	Used in Plant Design	
<u>COMPRESSED AIR SYSTEM</u>					
Piping, Fittings, and Valves	ASME III Class 3	ASA B31.1 (1955)	See remarks	Class I	Not covered by RG 1.26. SRP, Section 3.2.2, requires that air systems im- portant to safety be Class 3
<u>STANDBY DIESEL GENERATOR SYSTEM</u>					
	ASME III Class 3	ASA B31.1 (1955)	Category I	Class I	
<u>SERVICE WATER SYSTEM</u>					
Piping, Fittings, and Valves	ASME III Class 3	ASA B31.1 (1955)	Category I	Class I	
Heat Exchangers	ASME III Class 3	ASME VIII (1965) TEMA Class R	Category I	Class I	

Table 4-2 (a)
Quality Group A Components (1)
Code: ASME III-Class 1 (2)

<u>Pressure Vessels</u>	<u>Code</u>
Reactor Pressure Vessel	ASME III (1965) Class C
<u>Piping</u>	
Recirculation System Piping (RCS)	ASME I (1965) ASA B31.1 (1955)
Automatic Pressure Relief Subsystem Discharge Piping (ADS)	ASME III (1965) Class C ⁽³⁾
Piping from Reactor Vessel up to First Isolation Valve External to Drywell (RCPB)	ASME III (1965) Class ? ASA B31.1 (1955)
Control Rod Drive Housing (CRDH)	?
<u>Pumps</u>	
Recirculation System Pumps (RCS)	ASME III (1965) Class C
<u>Valves</u>	
Recirculation System Valves (RCS)	ASME I (1965) ASA B31.1 (1955)
Automatic Pressure Relief Subsystem Valves (ADS)	ASME III (1965) Class A ⁽³⁾
Safety Valves (SV)	ASME III (1965) Class ? ⁽⁴⁾ ASA B31.1 (1955)

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1. Refer to Table 4-2 (d) for abbreviations.
 2. ASME III-Class 1 stands for American Society of Mechanical Engineers, Boiler and Pressure Vessel Code, Section III, Division 1, Subsection NB, 1977 Edition and Addenda through the Summer 1978 Addenda.
 3. It is more likely that ASA B31.1 (1955) would have been used for design than ASME III. The class was inferred from the Licensee's submittal which indicated Class 1 or Class 3.
 4. The Licensee should specify which section of ASME III was used.

Table 4-2(b)
Quality Group B Components (1)
Code: ASME III-Class 2 (2)

<u>Pressure Vessel</u>	<u>Code</u>
Emergency System Isolation Condenser - Tube Side (IC)	ASME III (1965) Class 7
LPCI Heat Exchangers - Tube Side (LPCI)	ASME III (1965) Class C
Feedwater Heat Exchangers - Tube Side (FWCIS)	ASME III (1965) Class B
Reactor Shutdown Cooling System Heat Exchangers - Tube Side (RSCS)	ASME III (1965) Class C
Condensate Demineralizer (CDC)	ASME VIII (1965)
 <u>Piping</u>	
Isolation Condenser Piping (IC)	ASA B31.1 (1955)
Standby Liquid Control System Piping (SLCS)	ASA B31.1 (1955)
Core Spray System Piping (CSS)	ASA B31.1 (1955)
Spray Header and Spargers (CSS)	ASA B31.1 (1955)
Low Pressure Coolant Injection System Piping (LPCI)	ASA B31.1 (1955)
Containment and Suppression Spray Headers (LPCI)	ASA B31.1 (1955)
Feedwater Coolant Injection Piping (FWCIS)	ASA B31.1 (1955)

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1. Refer to Table 4.2(d) for abbreviations.
 2. ASME III-Class 2 stands for American Society of Mechanical Engineers, Boiler and Pressure Vessel Code, Section III, Division 1, Subsection NC, 1977 Edition and Addenda through the Summer 1978 Addenda.
 3. It is more likely that ASA B31.1 (1955) rather than ASME III would have been used for design purposes.

Table 4-2 (b) (Cont.)

<u>Piping (Cont.)</u>	<u>Code</u>
Feedwater Coolant Injection Spargers (FWCIS)	ASA B31.1 (1955)
Piping from Condenser Hotwell to Reactor Vessel (FWCIS)	ASA B31.1 (1955)
Standby Gas Treatment System Piping (SGTS)	ASA B31.1 (1955)
Containment Penetration Piping (CS)	As per Applicable System ⁽⁵⁾
Control Rod Drive System (CRDS)	?
Main Steam System Piping from Outermost Isolation Valve up to Turbine Stop and Bypass Valves and Connected Piping up to First Valve (MSS)	ASA B31.1 (1955)
<u>Pumps</u>	
Standby Liquid Control System Pumps (SLCS)	ASME III (1965) Class ?
Core Spray System Pumps (CSS)	ASME III (1965) Class C
LPCI/Containment Coolant Subsystem Pumps (LPCI)	ASME III (1965) Class C
Feedwater Coolant Injection Pumps (FWCIS)	Manufacturer's Standards
<u>Valves</u>	
Isolation Condenser Valves (IC)	ASA B31.1 (1955)
Standby Liquid Control System Valves (SLCS)	ASA B31.1 (1955)
Core Spray System Valves (CSS)	ASA B31.1 (1955)
LPCI/Containment Coolant Subsystem Valves (LPCI)	ASA B31.1 (1955)

4. This information was not directly given in original table, but was inferred from the Licensee's submittal which indicated Class 1 or Class 3.
5. Containment penetrations were designed per ASME III (1965), Class B.

Table 4-2(c)
Quality Group C Components (1)
Code: ASME III-Class 3 (2)

<u>Pressure Vessels</u>	<u>Code</u>
Emergency System Isolation Condenser - Shell Side (IC)	ASME VIII (1965)
LPCI/Containment Coolant Subsystem Heat Exchanger - Shell Side (LPCI)	ASME III (1965) Class C
Spent Fuel Storage Heat Exchangers (SFSP)	ASME VIII (1965) TEMA Class R
Spent Fuel Storage Facilities Filters (SFSP)	?
Reactor Water Cleanup System Regenerative Heat Exchangers, Non-Regenerative Heat Exchangers, Filters, and Demineralizers (RWCS)	ASME III (1965) (3) Class C
Reactor Shutdown Cooling System Heat Exchanger - Shell Side (RSCS)	ASME VIII (1965)
Reactor Building Closed Cooling Water System Heat Exchanger (CCWS)	ASME VIII (1965) TEMA Class R
Service Water System Heat Exchangers (SWS)	ASME VIII (1965) TEMA Class R
Emergency Service Water System Heat Exchangers (ESWS)	ASME VIII (1965) (4) TEMA Class R
Turbine Building Secondary Cooling Water System Heat Exchangers (TBSCWS)	ASME VIII (1965) TEMA Class R

1. See Table 4.2(d) for abbreviations.
2. ASME III-Class 3 stands for American Society of Mechanical Engineers, Boilers and Pressure Vessel Code, Section III, Division 1, Subsection ND, 1977 Edition and Addenda through the Summer 1978 Addenda.
3. The plant FSAR, page x-2.7, states that the reactor water cleanup system is composed of heat exchangers, filters, demineralizers, pumps, and related piping and valves. FRC understands that all these components were designed to ASME III (1965) Class C requirements.
4. This information was provided in the original NRC package [11], but was deleted from the Licensee's submittal [4].
5. It is more likely that ASA B31.1 (1955) would have been used for design than ASME III.

*This was deleted in NNECO's original submittal since these components are the LPCI heat exchangers

Table 4.2(c) (Cont.)

Piping

Containment Cooling Subsystem Piping (LPCI)	ASA B31.1 (1955)
Piping Associated with Spent Fuel Storage Facilities (SFSP)	ASA B31.1 (1955)
Reactor Vessel Head Cooling System Piping (RVHCS)	ASME III (1965) (5) Class C
Reactor Water Cleanup System Piping (RWCS)	ASME III (1965) (5) Class C
Reactor Building Closed Cooling Water System Piping (CCWS)	ASA B31.1 (1955)
Compressed Air System Piping (CAS)	ASA B31.1 (1955)
Standby Diesel Generator System Piping (SDGS)	ASA B31.1 (1955)
Service Water System Piping (SWS)	ASA B31.1 (1955)
Turbine Building Secondary Cooling Water System Piping (TBSCWS)	ASA B31.1 (1955)

Pumps

LPCI/Containment Coolant Subsystem Pumps (LPCI) (Other than Class 2)	?
Spent Fuel Storage System Pumps (SPSF)	Manufacturer's Standards
Reactor Water Cleanup System Pumps (RWCS)	ASME III (1965) (3) Class C
Reactor Building Closed Cooling Water System Pumps (CCWS)	?

Valves

Containment Cooling Subsystem Valves (CCS)	ASA B 31.1 (1955)
Spent Fuel Storage Facilities Valves (SPSF)	ASA B31.1 (1955)

Table 4.2 (c) (Cont.)

<u>Valves (Cont.)</u>	<u>Code</u>
Reactor Vessel Head Cooling System Valves (RVHCS)	ASME III (1965) (5) Class C
Reactor Water Cleanup System Valves (RWCS)	ASME III (1965) (5) Class C
Reactor Building Closed Cooling Water System Valves (CCWS)	ASA B31.1 (1955)
Compressed Air System Valves (CAS)	ASA B31.1 (1955)
Standby Diesel Generator System Valves (SDGS)	ASA B31.1 (1955)
Service Water System Valves (SWS)	ASA B31.1 (1955)
Turbine Building Secondary Cooling Water System Valves (TBSCWS)	ASA B31.1 (1955)
<u>Storage Tanks (Atmospheric and 0-15 psig)</u>	
Condensate Storage Tank (CST)	None