50-289

ITEMS COMPLETING INSERVICE INSPECTION PROGRAM
ATTACHMENTS B-E

Rec'd with ltr dtd 9/30/77....MCN 772770212

INSERVICE INSPECTION OF TMI-1
CLASS 2 COMPONENT PRESSURE BOUNDARIES

I. Scope and Objectives

This attachment describes the inservice inspection program for Class 2 pressure boundary components of TMI-1. The objective of the inservice inspection program is to provide assurance of the continuing integrity of the Class 2 system while at the same time minimizing radiation exposure to personnel and plant downtime in the performance of the inspections.

II. Identification of Class 2 Boundaries

The Class 2 boundaries were established in accordance with the NRC Standard Review Plan Section 3.2.2 (11/24/75), ANSI N18.2A (1975) and Regulatory Guide 1.26 Revision 3 Quality Group B. The Class 2 systems and boundaries are shown in ISI drawings C300-001 through C300-005 and C300-008 through C300-023.

III. Applicable Code Edition and Addenda

In accordance with 10 CFR 50 paragraph 50.55a (b), the applicable Code Edition and Addenda are the 1974 Edition with Addenda through Summer 1975.

IV. Period of Applicability

In accordance with 10 CFR 50, paragraph 50.55a (g) (4) (ii), this program is applicable from January 1978 to May 1981. However, the program is written in terms of the code required ten year inspection interval which started in September 1974. In addition, the inspection program is based upon a forty year service lifetime of the unit which ends in September, 2014.

V. Inspection Program

Inservice Inspections will be carried out in accordance with ASME Section XI, 1974 Edition with Addenda through Summer 1975 and specific inspections for this period of applicability will be performed as shown on Table B-1 attached.

Any repairs found to be necessary as a result of inservice inspections will be performed in accordance with Section XI, 1974 Edition with Addenda through Summer 1975.

VI. Exceptions

Specific exceptions to the ASME Section XI requirements are identified in the attached Table B-2 along with the basis for each exception requested.

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INSERVICE INSPECTION PROGRAM - CLASS 2 COMPONENT PRESSURE BOUNDARIES

TABLE B-1

ITEM NO. PER TABLE IWC 2600	EXAMINATION CATEGORY TABLE IWC 2520	AREAS TO BE EXAMINED IN THIS INSPECTION PERIOD	INSPECTION METHOD	INSPECTION SCHEDULE AND EXTENT	REMARKS
C1.1	C-A	One Steam Generator circumferential butt weld	Volumetric	8 welds will be inspected during the service life of the unit: Decay Heat System-2 welds Steam Generator- 6 welds	The steam generator weld inspection will cover 20% of the weld uniformly distributed among 3 areas around the vessel circumference.
C1.2	C-B	One Steam Generator nozzle to vessel weld. The nozzle will be one of the 24 inch main steam lines	Volumetric	9 welds will be inspected during the service life of the unit: Decay Heat System-2 welds Steam Generator -7 welds	100% of the nozzle attachment weld will be inspected
C1.3	C-C	None	——	——	Integrally welded steam generator supports are covered by Class 1 inspection program. There are no other integrally welded supports in Class 2 system

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TABLE B-1

ITEM NO. PER TABLE IWC 2600	EXAMINATION CATEGORY TABLE IWC 2520	AREAS TO BE EXAMINED IN THIS INSPECTION PERIOD	INSPECTION METHOD	INSPECTION SCHEDULE AND EXTENT	REMARKS
C1.4	C-D	None	Visual & either surface or Volumetric	The pressure retaining bolting of 42 flanges will be inspected during the service life of the unit: Main Steam System-18 flanges Decay Heat System-16 flanges Air Handling System-4 flanges Steam Generator-4 flanges	No pressure retaining bolting on pressure vessel flanges is scheduled to be inspected during this inspection interval
C2.1	C-F, C-G	15 circumferential piping butt welds will be inspected	Volumetric	180 welds will be inspected during the service life of the unit: Main Steam Systems-28 welds Decay Heat System-113 welds Feedwater System-18 welds Reactor Bldg. Emerg. Clg.-2 welds Hydrogen Purge System-5 welds Air Handling System-4 welds Intermediate Cooling System-4 welds Steam Generator-4 welds	The 15 welds to be inspected are: Main Steam System-2 Decay Heat System-10 Feedwater System-2 Hydrogen Purge System-1

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TABLE B-1

ITEM NO. PER TABLE IWC 2600	EXAMINATION CATEGORY TABLE IWC 2520	AREAS TO BE EXAMINED IN THIS INSPECTION PERIOD	INSPECTION METHOD	INSPECTION SCHEDULE AND EXTENT	REMARKS
C2.2	C-F, C-G	8 longitudinal weld joints in fittings will be inspected	Volumetric	178 welds will be inspected during the service life of the unit: Main Steam System-5 welds Decay Heat System-171 welds	The 8 welds to be inspected are: Decay Heat System-8
C2.3	C-F, C-G	None	Volumetric	15 welds will be inspected during the service life of the unit: Main Steam System-11 welds Decay Heat System - 4 welds	No welds of this category are scheduled to be inspected during this inspection period
C2.4	C-D	Bolting of one flange will be inspected	Visual & either surface or Volumetric	The pressure retaining bolting of 10 flanges will be inspected during the service life of the unit: Main Steam System-4 flanges Decay Heat System-4 flanges Air Handling System-2 flanges	The bolting of one main steam piping flange will be inspected during this inspection period

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INSERVICE INSPECTION PROGRAM - CLASS 2 COMPONENT PRESSURE BOUNDARIES

TABLE B-1

ITEM NO. PER TABLE IWC 2600	EXAMINATION CATEGORY TABLE IWC 2520	AREAS TO BE EXAMINED IN THIS INSPECTION PERIOD	INSPECTION METHOD	INSPECTION SCHEDULE AND EXTENT	REMARKS
C2.5	C-E-1	2 pipe support attachment welds will be inspected	Surface	28 integrally welded pipe supports will be inspected during the service life of the unit: Main Steam System-5 welds Decay Heat System-8 welds Feedwater System - 6 welds Steam Generator - 8 welds Intermediate Cooling-1 weld	The two welds to be inspected are: Decay Heat System-1 Steam Generator - 1
C2.6	C-E-2	8 pipe hangers will be inspected	Visual	93 pipe hangers will be inspected during the service life of the unit: Main Steam System-32 Decay Heat System-33 Feedwater System - 16 Steam Generator - 8 Hydrogen Purge System-2 Intermediate Cooling -2	The pipe hangers (8) to be inspected are: Main Steam System-3 Decay Heat System-3 Feedwater System - 1 Steam Generator - 1

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INSERVICE INSPECTION PROGRAM - CLASS 2 COMPONENT PRESSURE BOUNDARIES

TABLE B-1

ITEM NO. PER TABLE IWC 2600	EXAMINATION CATEGORY TABLE IWC 2520	AREAS TO BE EXAMINED IN THIS INSPECTION PERIOD	INSPECTION METHOD	INSPECTION SCHEDULE AND EXTENT	REMARKS
C3.1	C-G	None	—	———	There are no welded pump casings in class 2 systems
C3.2	C-D	None	Volumetric	The pressure retaining bolting of 1 decay heat system flange will be inspected during the service life of the unit	No bolting exceeding 2 inch dia. is scheduled to be inspected during this inspection interval
C3.3	C-E-1	None	—	———	There are no integrally welded supports on Class 2 pumps
C3.4	C-E-2	None	Visual	The pump support component of 1 decay heat system pump will be inspected during the service life of the unit	No pump support components are scheduled to be inspected during this inspection interval

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INSERVICE INSPECTION PROGRAM - CLASS 2 COMPONENT PRESSURE BOUNDARIES

TABLE B-1

ITEM NO. PER TABLE IWC 2600	EXAMINATION CATEGORY TABLE IWC 2520	AREAS TO BE EXAMINED IN THIS INSPECTION PERIOD	INSPECTION METHOD	INSPECTION SCHEDULE AND EXTENT	REMARKS
C4.1	C-G	None	—	———	There are no welded valve bodies in class 2 systems
C4.2	C-D	None	Volumetric	The pressure retaining bolting of 3 flanges will be inspected during the service life of the unit. Main Steam System-1 Decay Heat System-2	No bolting exceeding 2 inch dia. is scheduled to be inspected during this inspection interval
C4.3	C-E-1	None	—	———	There are no integrally welded supports in Class 2 systems
C4.4	C-E-2	None	—	———	There are no valve support components in Class 2 systems

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INSERVICE INSPECTION PROGRAM - CLASS 2 EXCEPTIONS

TABLE B-2

COMPONENT	ASME III CODE CLASS	ASME XI EXCEPTION REQUESTED	JUSTIFICATION	TESTING PERFORMED IN LIEU OF CODE REQUIREMENT
Penetration Pressurization System See ISI Dwg. 300-015	NON NUCLEAR	IWC 2412 and IWC 2500	This system is an air system for cooling. The introduction of water into it for pressure testing will be harmful to it and associated components and will impair and degrade its subsequent operation	This system will be pneumatically pressure tested at normal operating pressure and leak checked (i.e. soap bubble method).

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INSERVICE INSPECTION PROGRAM - CLASS 2 EXCEPTIONS

TABLE B-2

COMPONENT	ASME III CODE CLASS	ASME XI EXCEPTION REQUESTED	JUSTIFICATION	TESTING PERFORMED IN LIEU OF CODE REQUIREMENT
Waste Gas Disposal System from WDG-V4 to Penet. #330 See ISI Dwg. 300-023	N-3	IWC 2412 and IWC 2500	These are systems which contain gas. The introduction of water into them for pressure testing will be harmful to them and associated components and will impair and degrade their subsequent operation.	These systems will be pneumatically pressure tested to 1.25 times design pressure and leak checked (i.e. soap bubble method).
Nitrogen Supply System from NI-V26 to Penet. #307 See ISI Dwg. 300-023	NON NUCLEAR			
Hydrogen Purge System See ISI Dwg. 300-023	NON NUCLEAR			
Service Air System from SA-V2 to Penet. #109 See ISI Dwg. 300-023	NON NUCLEAR			
Containment Monitoring System from CM-V1 to Penet. #108 and CM-V4 to Penet. #108 See ISI Dwg. 300-023	NON NUCLEAR			

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TABLE B-2

COMPONENT	ASME III CODE CLASS	ASME XI EXCEPTION REQUESTED	JUSTIFICATION	TESTING PERFORMED IN LIEU OF CODE REQUIREMENT
14 inch Decay Heat piping from DH-V6 A and B to Reactor Building Sump. See ISI Drawing 300-005	N-2	Table IWC 2600, Item 2.1 and Table IWC 2520 Category C-F	This piping is encased in concrete under the Reactor Building floor and therefore cannot be inspected volumetrically. The butt welds on DH-V6A and B cannot be inspected since these valves are located in a welded valve container and are not accessible.	None
10 inch Decay Heat piping elbow immediately upstream of DH-V4A and B. One butt weld and two longitudinal welds on each elbow See ISI Dwg. 300-005	N-2	Table IWC 2600, Item 2.1 and Table IWC 2520, Category C-F	This section of decay heat pipe is contained within a 14 inch guard pipe and is not accessible for inspection.	Pressure test per IWC-5000

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INSERVICE INSPECTION PROGRAM - CLASS 2 EXCEPTIONS

TABLE B-2

COMPONENT	ASME III CODE CLASS	ASME XI EXCEPTION REQUESTED	JUSTIFICATION	TESTING PERFORMED IN LIEU OF CODE REQUIREMENT
6 inch "Y" pattern strainer upstream of DH-V/A and B in Make-up Pump suction line See ISI Dwg. 300-005	N-2	Table IWC 2600, Item 2.1 and Table IWC 2520 Category C-F	These strainers are located in ¼ inch piping exempted by IWC 1220 (d)	Pressure test per IWC-5000
Decay Heat Removal Pumps DH P1A/B (see ISI Dwg. 300-005)	N-2	IWC 2412 and IWC 2500	Pressure testing pumps at 1.25 times system design pressure will damage pump seals	System pressure test at 1.25 times design pressure will be terminated at suction and discharge flange except make-up pumps (MU-P1A/B/C) which will terminate at first valve downstream of pump discharge
Building Spray Pumps BS-P1A/B (see ISI Dwg. 300-012)				
Makeup Pumps - MU P1A/B/C (see ISI Dwg. 300-017)				