WATTS BAR NUCLEAR PLANT

TECHNICAL INSTRUCTION

TI-50B

ASME SECTION XI
PRESERVICE INSPECTION PROGRAM

UNIT 2

Rev. By	Rev. No.	Date	Revised Pages
N/A	0	8/26/81	All
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The last page of this instruction is number 108.

1C	Plant Master File
___	Superintendent
___	Assistant Superintendent (O)
1C	Mechanical Maintenance Supervisor
1C	Results Supervisor
1C	Operations Supervisor
1C	Quality Assurance Supervisor
1C	Health Physicist
___	Administrative Supervisor
___	Chemical Laboratory
1C	Instrument Shop
1C	Shift Engineer's Office
2C	Unit Control Room
___	Health Physics Laboratory
1C	FSW Supervisor
1C	Mechanical Engineer
___	Reactor Engineer
___	Chemical Engineer
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1U	Plant Training Office
1C	Codes & Standards Group
1C	Baseline Inservice Inspection Group
1C	Instrument Engineer

Prepared By G. L. Belew

Submitted By [signature] Supervisor 8'26'81 Date

PORC Review

Approved By [signature] for Superintendent

Date Approved 8/26/81

OS/6

WBNF
TI-50B
Cover Sheet
Page 1 of 1
Revision 2

PRESERVICE INSPECTION PROGRAM

COVER SHEET

Owner:	Tennessee Valley Authority
Address of Corporate Office:	Knoxville Office Complex 400 Commerce Avenue Knoxville, Tennessee 37902
Name and Address of Nuclear Power Plant:	Watts Bar Nuclear Plant P.O. Box 2000 Spring City, Tennessee 37381
Applicable Nuclear Power Units:	Watts Bar Nuclear Plant, Unit 2

PUNCH LIST

1. Incorporate Scan Plan Data Upon Completion of PSI, Appendix G
2. Add Appendix E
3. Add Appendix F
4. Complete Appendix A

Signature 5-6-82
Date

TABLE OF CONTENTS

1.0 STATEMENT OF APPLICABILITY

This Technical Instruction supersedes Surveillance Instruction 4.4.10.1.

This program outlines details for performing the preservice nondestructive examinations of the Watts Bar Nuclear Plant ASME Code Class 1, 2, and 3 components (and their supports). The program has been organized to fulfill examination requirements of the Watts Bar Operational Quality Assurance Manual, Part II, Section 5.1 and comply as practical with the requirements of Section XI of the ASME Boiler and Pressure Vessel Code.

The requirements of ASME Section XI are in effect when the requirements of ASME Section III have been satisfied. Criteria for determining that ASME Section III requirements have been satisfied are as follows:

Item	When ASME Section III Requirements are Satisfied
Pressure Vessels and Pumps	When "N" stamped
Valves	When "N" stamped
Piping System	When the hydrostatic pressure test is complete and the N-5 data form is completed

Specifics concerning performance of nondestructive examinations are not a part of this program, but are included in nondestructive examination procedures (DPM N80E3 and WB7.3.8).

2.0 PURPOSE

The Preservice Inspection Program (hereinafter PSI) is preliminary in nature and is employed to obtain detailed information for inclusion in the Inservice Inspection Program. The examinations required by this program will establish acceptance of components for service.

The PSI Program serves as a means of determining built-in limitations caused by original plant design, geometry, materials of construction of the components, and the current technology or state-of-art of nondestructive testing. The PSI Program will also permit verification of the examination methods selected, finalization of detailed procedures, and will establish preservice examination data to be used as a reference for later inservice examinations.

3.0 CODES OF RECORD AND CODE CASES

This program was prepared to meet the requirements of the 1974 Edition, Summer 1975 Addenda of Section XI of the ASME Boiler and Pressure Vessel Code. Criteria for determining Class 2 pressure-retaining bolting subject to examination is in accordance with the 1977 Edition, Summer 1978 Addenda of Section XI. The repair and replacement program is in

accordance with the Summer 1978 Addenda of Section XI. Technique for ultrasonic examination of piping welds shall be in accordance with IWA-2232(b) and IWA-2232(c) or the Summer 1978 Addenda of Section XI. Standards for Examination Evaluation (IWA-3000) shall be in accordance with the Summer 1978 Addenda.

Procedures for eddy current examination of heat exchanger tubing, which the Summer 1975 Addenda of ASME Section XI has no provisions for, meets the requirements of the 1974 Edition, Summer 1976 Addenda of ASME Section XI. Steam generator tubing examination requirements are in accordance with Regulatory Guide 1.83, Revision 1.

The use of Code Cases N-234 and N-235 have been approved for TVA use by NRC.

4.0 METHOD OF IMPLEMENTATION AND RESPONSIBILITIES

Preliminary weld maps and other pertinent component drawings and tables are included in Appendix A of this program to define areas subject to examination (in addition to sections 5.0, 6.0, 7.0, and 8.0). The preliminary piping weld maps should be established by NUC PR from CONST's latest revision weld maps.

Prior to performance of the examinations, each system shall be walked down by the Programs and Procedure Section of the Nuclear Central Office QA Staff (hereinafter NCO QA Staff) to verify that the NUC PR drawings depict field configurations. Any drawing revisions that are necessary as a result of the walkdown will be made before the drawings are included in this program.

The NCO QA Staff shall prepare scan plans using component drawings for systems or components requiring examinations. The plans should include as a minimum references to components to be examined, methods of examination, examination procedures, and calibration standards. Prior to performing examinations on a system or component, the scan plans shall be established and submitted to the Plant Superintendent for information, and system or component weld maps incorporated in Appendix A of this program.

If variations in piping configurations are discovered or modifications or repairs to piping are made during the course of the PSI, these changes shall be marked on field copies of drawings. This information shall be communicated to the Programs and Procedure Section which shall be responsible for revising the original drawings. The Inspection Section Group scan plan shall also be revised to reflect these changes. Following completion of each system examination, the revised drawings shall be incorporated into this program as a reference for inservice inspections. All latest revision scan plan information and other pertinent information (i.e., as built calibration block drawings) shall be incorporated in this program as a reference for inservice inspections when all examinations required by this program have been completed.

The preservice examinations will be performed by either Inspection Section personnel or outside contractors. Contract preparation, administration, and supervision will be the responsibility of the Inspection Section. Inspection plans and/or Quality Assurance Programs submitted by outside contractors shall be reviewed and approved by the Inspection Section prior to use. All specific NDE procedures used during the inspection program shall be reviewed and approved in accordance with OQAM Part II, Section 6.3.

Certain ASME Section III examinations performed in shop and/or by CONST will be identified by the Programs and Procedure Group and employed to serve for the ASME Section XI PSI. When in shop examination procedures are employed, the examination data sheets and the applicable data package form, with the ANI sign-off, shall be obtained by the Programs and Procedure Group. When CONST examination records are employed, CONST examination procedures shall be obtained by the Inspection Section for reference (excluding pressure test procedures).

Whenever inspection requirements are being accomplished under the jurisdiction of NUC PR, an Inspection Section representative shall be responsible for coordinating activities or obtaining inspection data. He will be the designated TVA representative to ensure contract compliance and to ensure proper disposition of needed procedure changes to both TVA and/or contractor procedures in accordance with approved vendor QA program and Section 6.3, Part II of the OQAM.

Additionally, the Inspection Section representative will be responsible for notifying the Plant Superintendent of all unacceptable indications as soon as practical. Whenever an unacceptable indication is discovered, the procedure and form in Appendix D shall be utilized. In those cases where an outside contractor is furnishing preservice examination services, the contractor will normally initiate the form in Appendix D under the supervision of the Inspection Section representative. See section 16.0 of this program.

As examinations are completed, the Inspection Section representative shall sign for completion the appropriate sections of Data Sheet 2 in Appendix C of this program. When all examinations of this program have been completed, Data Sheet 1 shall be signed for completion by the Inspection Section representative and reviewed by the Supervisor, Inspection Section Supervisor In the event system or component alterations or repairs are made which require component reexamination, or components are reexamined for other reasons, following sign-off of Data Sheet 1, the appropriate sections of Data Sheet 2 in Appendix C shall be completed and signed by the Inspection Section representative.

All preservice examinations shall be completed prior to initial plant startup (Operational Mode 2). Prior to initial plant startup, Data Sheet 2, in addition to Data Sheet 1, in Appendix C shall be signed by the Inspection Section representative and reviewed by the Supervisor, Baseline and Inspection Section Supervisor, and the Programs and Procedures Supervisor. The supervisor of the Baseline and Inservice Inspection Group.

shall approve the data package (Data Sheets 1, 2, and 3). These data sheets shall be filed at the plant site with PSI examination data and final reports discussed in Section 15.0 of this program.

PSI program preparation is the responsibility of Programs and Procedures Section of the QA and Compliance Branch. Any revisions initiated by other groups shall be submitted to the Programs and Procedures Section for approval prior to incorporating the revisions into this program.

5.0 ABBREVIATIONS AND DEFINITIONS

5.1 AIA - Authorized Inspection Agency

5.2 AI - Authorized Inspector (may denote an ANI or ANII)

5.3 ANI - Authorized Nuclear Inspector

5.4 ANII - Authorized Nuclear Inservice Inspector

5.5 Components - Denotes items in a nuclear plant such as pressure vessels, piping systems, pumps, valves, and component supports.

5.6 Examination - Denotes the performance of all visual observation and nondestructive testing such as radiography, ultrasonic, eddy current, liquid penetrant, and magnetic particle methods.

5.7 Inspection - Denotes verifying the performance of examinations and tests by an Inspector representing an Authorized Inspection Agency.

5.8 Maintenance - Routine servicing or work on a component undertaken to correct or prevent an unsatisfactory condition. Maintenance does not include welding, heat treating, or defect removal which affects the pressure boundary. Maintenance includes operations such as lapping of valve seats, adjustment of stem packing, pump seal maintenance, and replacement of nonpressure-retaining pump parts. Maintenance does not require the presence of or verification by the Authorized Inspector.

5.9 Normal Operation - Normal plant operation conditions include reactor startup, operation at power, hot standby, and reactor cooldown to cold shutdown conditions. Test conditions are excluded.

5.10 Pressure-Retaining Material - Applies to items such as vessel heads, nozzles, pipes, tubes, fittings, valve bodies, bonnets, disks, pump castings, covers, and boltings which join pressure-retaining items.

5.11 Repair - Those operations involving welding, heat treatment, or defect removal which are required to restore a component or piping system to a safe and satisfactory operating condition. The replacement of pressure-retaining items with like items also constitutes a repair.

5.12 Replacement Replacments include spare and renewal components, or parts of a component. It also includes the additional or components such as valves and system changes such as rerouting or piping. It does not include the additional of complete systems.

6.0 COMPONENTS SUBJECT TO EXAMINATION - TVA SAFETY CLASS A

The Class A (ASME Class 1) components to be examined for the PSI are outlined in the following paragraphs. The entire length of each weld described will be examined for the PSI.

All Class A components are subject to volumetric and/or surface examination except component connections, piping, and associated valves (and their supports) that are one-inch nominal pipe size and smaller (see section 6.7). Class A vessels shall not be examined prior to shop or field hydrostatic tests.

When examinations have been completed on the various components, the data sheet(s) in Appendix C shall be completed.

Table A in Appendix A supplies additional information such as reference drawing numbers and Section XI, Table IWB-2600, examination categories.

6.1 Reactor Vessel

6.1.1 Reactor Vessel Seam Welds

6.1.1.1 Circumferential Shell Welds - Beltline Region

There is one circumferential weld in the vessel cylinderical shell located behind the thermal shield. This weld will be ultrasonically examined using remote inspection devices from the vessel I.D. with the core internals removed.

The vessel shell sections are machined forgings fabricated of A-508, Class 2, manganese-molyedenum steel and are clad with weld deposited austenitic stainless steel.

6.1.1.2 Circumferential Shell Weld

There are three circumferential welds in the vessel cylinderical shell located outside of the

beltline region. These welds will be ultrasonically examined using remote inspection devices from the vessel I.D. with the core internals removed.

The vessel shell section material is identified in section 6.1.1.1.

6.1.1.3 Lower Head Welds

There are six meridional welds and one circumferential weld in the lower head. The welds will be ultrasonically examined using remote inspection devices from the vessel I.D. with the core internals removed.

Base metal below the lower head circumferential weld is inaccessible for examination from the vessel I.D. due to instrumentation penetrations (weld No. WOI-02). A manual ultrasonic examination of this area will be conducted from the vessel O.D. (see Request for Relief ISI-6).

The bottom head sections are fabricated of A-533, Gr. B, Class 1, manganese-molybdenum steel, and are clad with weld deposited austenitic stainless steel.

6.1.1.4 Closure Head Circumferental Weld

The head cap weld will be manually ultrasonically examined from the head O.D. The closure head does not include any meridional welds.

The closure head ring is fabricated of A-508, Class 2, manganese-molybedenum steel. The closure head hemispherical section is fabricated of A-533, Gr. B, Class 1, manganese-molybdenum steel. Both sections are clad with weld deposited austenitic stainless steel.

6.1.1.5 Vessel-To-Flange And Head-To-Flange Weld

The vessel-to-flange weld will be ultrasonically examined from the vessel I.D. with remote inspection devices. The head-to-flange weld will be manually ultrasonically examined from the head O.D.

The vessel and closure head flange sections are fabricated of A-508, Class 2, manganese-molybdenum steel and are clad internally and on the gasket face with weld deposited austenitic stainless steel.

6.1.2 Reactor Vessel Nozzle-To-Vessel Welds And Inside Radiused Sections

There are four inlet nozzles (27.441 inch I.D.) and four outlet nozzles (26.937 inch I.D.). The nozzle-to-vessel welds and nozzle inside radiused sections (including outlet nozzle integral extensions) will be ultrasonically examined from the I.D. using remote inspection devices.

In addition to the above examinations, all vessel nozzles cladding will be ultrasonically examined at the end of each 10-year inspection interval using techniques at least as sensitive as those used to conduct the supplemental examinations performed prior to fuel loading. The results of this examination shall be reported to NRC.

The nozzle forgings are fabricated of A-508, Class 2, manganese-molybdenum steel and are clad with weld deposited austenitic stainless steel.

6.1.3 Reactor Vessel Penetrations And Attachments

The control rod drive, upper head injection, vent pipe, and instrumentation penetrations shall be visually examined by CONST for leakage during the ASME Section III hydrostatic pressure test.

6.1.4 Reactor Vessel Nozzle-To-Safe End Welds

The nozzle-to-safe end welds shall be ultrasonically examined from the I.D. using remote inspection devices. In addition, these welds will be liquid penetrant examined (from O.D.).

6.1.1.5 VesselToFlange And HeadToFlange Weld (Continued)

The nozzle ends include a buttered safe-end of 309 and 308L and are extended with a stainless steel ring of SA-182, Type 304.

6.1.5 Reactor Vessel Closure Studs, Nuts, Ligaments, And Washers

The vessel flange studs and nuts shall be ultrasonically and magnetic particle examined. The vessel flange ligaments between threaded stud holes shall be ultrasonically examined, and closure washers shall be visually examined. Threads in base material do not require additional examination.

There is no additional pressure-retaining bolting associated with the vessel.

Studs, nuts, and washers are fabricated of SA-540, Gr. B24, nickle-chrome-molybdenum steel with a manganese-phosphate surface treatment.

6.1.6 Integrally-Welded Reactor Vessel Supports

There are no integrally-welded vessel supports. The vessel is supported by four support pads located on the bottom of two outlet nozzles (15 and 17) and two inlet nozzles (13 and 14, Reference Drawing CH-M-2547-B).

6.1.7 Reactor Vessel And Closure Head Cladding

There are six clad patches (36 square inches each) in the vessel cladding that shall be visually examined. There are six clad patches (36 square inches each) in the closure head cladding which shall be visually and liquid penetrant examined. Color photographs, video tapes, or other recording systems of the inspection areas may be used for comparison with inservice inspections.

Reactor vessel and closure head cladding is of weld deposited austenitic stainless steel.

6.1.8 Reactor Vessel Interior And Removable Core-Support Structures

The space above and below the reactor core that is made accessible for visual examination by the removal of components during normal refueling outages shall be visually examined.

Visual examinations shall also be performed on removable core support structures of the vessel. The examinations shall include 100 percent of the visually accessible attachment welds and visually accessible surfaces of the core support structure. The structures shall be removed from the vessel for these examinations.

6.1.9 Reactor Vessel Control Rod Drive Housings

The pressure-retaining welds in the peripheral control rod drive housings shall be ultrasonically examined.

6.1.9 Reactor Vessel Control Rod Drive Housings (Continued)

The housings consist of a 6-inch O.D. adapter of A-182, 304SS and a 4-inch O.D. body of SB-167.

6.1.10 Reactor Vessel Auxiliary Head Adapters

The pressure-retaining welds in the four auxiliary head adapters shall be ultrasonically examined. The dissimilar metal welds shall also be liquid penetrant examined.

The adapters consist of SA-182, 304 stainless steel (upper portion), SB-166 (lower portion), and a weld buildup from the vessel head. The weld buildup is considered an integral part of the vessel head and does not require examination.

6.2 Pressurizer

6.2.1 Pressurizer Longitudinal And Circumferential Welds

There are four longitudinal welds and five circumferential welds in the shell cylinderal region. These welds shall be ultrasonically examined. There are no circumferential or meridional head welds.

All shell and head sections are fabricated of SA-533, Gr. A, Class 2, manganese-molybdenum steel and are clad with austenitic stainless steel.

6.2.2 Pressurizer Nozzle-To-Vessel Welds And Inside Radiused Sections

There are four 6-inch nozzles, one 4-inch nozzle, and one 14-inch nozzle. The nozzle-to-vessel welds and nozzle inside radiused sections will be ultrasonically examined.

The nozzles are fabricated of SA-508, Class 2, manganese-molybdenum steel.

6.2.3 Pressurizer Heater Penetrations

The pressurizer lower head heater penetrations shall be visually examined by CONST for leakage during the ASME Section III hydrostatic pressure test.

6.2.4 Pressurizer Nozzle-To-Safe End Welds

Each nozzle includes a welded forging safe end. The nozzle-to-safe end welds shall be ultrasonically and liquid penetrant examined.

Safe-end connections are SA-182, Gr. F-316L forgings.

6.2.5 Pressurizer Pressure-Retaining Bolting

The bolting on the pressurizer manway shall be visually examined. The bolting may be examined either in place under tension or when the bolting is removed.

6.2.5 Pressurizer PressureRetaining Bolting (Continued)

The manway includes 16 bolts at 1.88 inches in diameter. The bolts are fabricated to SA-193, Gr. B7.

6.2.6 Pressurizer Integrally-Welded Vessel Support

The pressurizer support skirt-to-vessel weld shall be ultrasonically examined. The support skirt is fabricated of SA-516, Gr. 70, carbon steel plate.

6.2.7 Pressurizer Cladding

A clad patch (36 square inches) in the pressurizer interior cladding near the manway shall be visually examined.

Interior cladding is of austenitic stainless steel.

6.3 Steam Generators (4)

6.3.1 Steam Generator Primary Longitudinal And Circumferential Welds

The primary head-to-tube sheet weld on each generator shall be ultrasonically examined. There are no primary longitudinal welds.

The tube plate is a SA-508, Class 2, steel forging, clad on the primary side with NiCrFe alloy (Inconel). The hemispherical chamber is a SA-216, Gr. WCC, casing, clad with austenitic stainless steel.

6.3.2 Steam Generator Primary Nozzle-To-Head Welds And Inside Radiused Sections

The steam generator primary nozzles are integrally cast with the hemispherical chamber. The nozzles inside radiused sections cannot be ultrasonically examined and achieve meaningful results due to limitations of examining integrally cast material (see Request for Relief RR-7).

The nozzles are fabricated to SA-216, Gr. WCC.

6.3.3 Steam Generator Primary Nozzle-To-Safe End Welds

The steam generator primary nozzle-to-safe end welds shall be ultrasonically and liquid penetrant examined.

The nozzles have buttered 308L safe ends.

6.3.4 Steam Generator Primary Pressure-Retaining Bolting

The bolting on the manway covers (2) on the primary side of all the generators shall be visually examined. The bolting may be examined either in place under tension or when the bolting is removed.

Each manway has 16 bolts at 1.88 inches in diameter. The bolts are fabricated to SA-193, Gr. B7.

6.3.5 Steam Generator Integrally-Welded Vessel Supports

There are no integrally-welded vessel supports. The four main support pads are secured to the steam generator field support system by high strength bolts.

6.3.6 Steam Generator Vessel Cladding

A clad patch (36 square inches) in the steam generator interior cladding near each generator manway shall be visually examined.

The hemispherical chamber is clad with austenitic stainless steel.

6.3.7 Steam Generator Tubing

Each steam generator tube bundle consists of 4,674 NiCrFe alloy (Inconel SB-163) U-tubes of 0.750 O.D. by 0.042 average wall thickness.

All tubes shall undergo a preservice inspection by eddy current examination. The preservice examination shall be performed in accordance with Appendix IV of the 1974 Edition, Summer 1976 Addenda of Section XI and Regulatory Guide 1.83, Rev. 1.

6.3.7.1 Acceptance Criteria

6.3.7.1.1 As used In This Section:

6.3.7.1.1.1 Imperfection means an exception to the dimensions, finish or contour of a tube from that required by fabrication drawings or specifications.

Eddy-current testing indications below 20 percent of the nominal tube wall thickness, if detectable, may be considered as imperfections.

6.3.7.1.1.2 Degradation means a service-induced cracking, wastage, wear, or general corrosion occuring on either inside or outside of a tube.

6.3.7.1.1.3 Degraded Tube means a tube containing imperfections ≥ 20 percent of the nominal wall thickness caused by degradation.

6.3.7.1.1.4 Percent Degradation means the percentage of the tube wall thickness affected or removed by degradation.

6.3.7.1.1.5 Defect means an imperfection of such severity that it exceeds the plugging limit. A tube containing a defect is defective.

6.3.7.1.1.6 Plugging Limit means the imperfection depth at or beyond which the tube shall be removed from service because it may become unserviceable prior to the next inspection and is equal to 40 percent of the nominal tube wall thickness.

6.3.7.1.1.7 Unserviceable describes the condition of a tube if it leaks or contains a defect large enough to affect its structural integrity

in the event of a seismic occurrence greater than the Operating Basis Earthquake, a loss-of-coolant accident requiring actuation of the engineered safeguards, or a steam line or feedwater line break.

6.3.7.1.1.8 Tube Inspection means an inspection of the steam generator tube from the point of entry (hot leg side) completely around the U-bend to the top support of the cold leg.

6.3.7.1.1.9 Preservice Inspection means a tube inspection of each steam generator tube performed by eddy current techniques prior to service to establish a baseline condition of the tubing. This inspection shall be performed prior to initial power operation using the equipment and techniques expected to be used during subsequent inservice inspections.

6.3.7.1.2 All defective tubes and tubes containing through-wall cracks shall be plugged.

6.4 Piping

All Class A piping systems to be examined are fabricated of stainless steel. The reactor coolant main loop piping straight lengths are centrifugal cast and the elbows are static cast. The upper head injection auxiliary head adapter is included in Section 6.1.10. Specific material specifications for each piping system are included in weld map isometrics in Appendix A.

The following Class A piping systems are subject to examination:

Reactor Coolant
Chemical and Volume Control
Residual Heat Removal
Safety Injection
Upper Head Injection

6.4.1 Circumferential And Longitudinal Pipe Welds

The entire length of each circumferential and longitudinal pipe weld shall be ultrasonically examined as practical.

6.4.2 Branch Pipe Connection Welds

All branch pipe connection welds exceeding six inches in diameter shall be ultrasonically examined. Each branch pipe connection weld six inches in diameter and smaller shall be liquid penetrant examined.

6.4.3 Piping Socket Welds

Each socket weld shall be liquid penetrant examined. as practical. CONST Section III examination data will be used for liquid penetrant examination of field welds. (Complete Data Sheet 2 in Appendix C when CONST Examination Procedure(s) obtained).

6.4.4 Piping Integrally-Welded Supports

All piping integrally-welded external support attachments shall be ultrasonically examined. Integrally-welded external support attachments include those supports which have attachment welds to the piping pressure-retaining boundary.

6.4.5 Piping Support Components

All piping support components shall be visually examined. This examination includes integrally-welded and nonintegrally-welded support components. The support settings of constant and variable spring type hangers, snubbers, and shock absorbers shall also be verified.

6.4.6 Piping Pressure-Retaining Bolting

There is no Class A pressure-retaining bolting 2 inches in diameter or larger. Class A bolting less than 2 inches in diameter shall be visually examined. These examinations shall include bolts, studs, and nuts. (See Weld Map Isometrics in Appendix A for location of bolted connections).

The bolting may be examined either in place under tension, when the connection is disassembled, or when the bolting is removed.

6.4.7 Piping Safe-End Welds

There are no piping safe-end welds other than those discussed in Sections 6.1.4, 6.2.4, and 6.3.3.

6.5 Reactor Coolant Pumps (4)-RCP

6.5.1 RCP Pressure-Retaining Bolting

The main flange on each pump includes 24 bolts at 4-1/2 inches in diameter. The lower seal housing on each pump includes 12 socket head cap screws at 2 inches in diameter.

The bolts and screws shall be ultrasonically examined and shall be surface examined if removed. Threads in the base material and flange ligaments between threaded stud (screw) holes shall be visually examined if the connection is disassembled.

Pressure-retaining bolting less than two inches in diameter shall be visually examined (No. 1, 2, and 3 seal assembly bolting). The examinations shall include bolts or studs and nuts.

All bolting may be examined either in place under tension, when the connection is disassembled, or when the bolting is removed.

The main flange bolts are fabricated to SA-540, Gr. B24 and the socket head cap screws are fabricated to SA-193, Gr. B7.

6.5.2 RCP Integrally-Welded Supports

There are no integrally-welded supports associated with the RCP.

6.5.3 RCP Support Components

Each RCP includes three support components bolted to pump feet, which are integrally cast with the pump. Each support component shall be visually examined.

6.5.4 RCP Casing Welds

Each pump includes a two-piece welded type 304SST casing. The casing welds cannot be ultrasonically examined and achieve meaningful results due to limitations of examining integrally cast material. In lieu of this requirement the casing welds shall be surface examined (see Request for Relief ISI-9).

6.5.5 RCP Casings

The internal pressure boundary surfaces of each pump shall be visually examined. In shop visual examinations will be used.

6.5.6 RCP Flywheel

Each RCP flywheel shall undergo a complete ultrasonic examination and shall also be surface examined in accordance with Regulatory Guide 1.14.

Shop examination data will be used to satisfy examination requirements.

The flywheel consists of two plates, approximately 5-inches and 8-inches thick, bolted together. Each plate is fabricated from vacuum degassed A-533, Gr. B, Class 1 steel.

6.6 Valves

6.6.1 Valve Pressure-Retaining Bolting

There is no Class A pressure-retaining bolting two inches in diameter or larger. Class A bolting less than two inches in diameter shall be visually examined. These examinations shall include bolts, studs, and nuts. (See Weld Isometric in Appendix A for location and identification of valves.)

The bolting may be examined either in place under tension, when the connection is disassembled, or when the bolting is removed.

6.6.2 Valve Integrally-Welded Supports

All valve integrally-welded external support attachments shall be ultrasonically examined.

Integrally-welded external support attachments include those supports which have attachment welds to the valve pressure-retaining boundary.

6.6.3 Valve Support Components

All valve support components shall be visually examined. This examination includes integrally-welded and nonintegrally-welded support components. The support settings of constant and variable spring type hangers, snubbers, and shock absorbers shall also be verified.

6.6.4 Valve Body Welds

There are no Class A valves with body welds.

6.6.5 Valve Bodies

The internal pressure boundary surfaces of one valve in each group of valves of the same constructional design (i.e., globe, gate, check), manufacturing method, and manufacturer that performs similar functions in the system shall be visually examined. The examinations shall include valves exceeding 4-inch nominal pipe size.

6.7 Exempted Components

All components exempted from examination in accordance with IWB-1220 of ASME Section XI shall be visually examined for leakage during system hydrostatic pressure tests. See Section 9.0. Components exempted from examination include component connections, piping, and associated valves (and their supports) that are 1-inch nominal pipe size and smaller.

7.0 COMPONENTS SUBJECT TO EXAMINATION - TVA SAFETY CLASS B

The Class B (ASME Class 2) components to be examined for the PSI are outlined in the following paragraphs. All components to be examined for inservice inspections during the service life of the plant will be examined for the PSI. Selection of areas for examination will be in accordance with paragraph IWC-2411 and Table IWC-2520 of ASME Section XI. The Programs and Procedures Section shall select areas to be examined or the Inspection Section may assist in selecting areas to be examined.

Components that are exempted from examination in accordance with IWC-1220 of ASME Section XI are discussed in Section 7.6 of this program.

Class B vessels shall not be examined prior to the field hydrostatic tests.

Where examinations specify a percentage of the total length of weld be examined, the area(s) examined shall be physically marked on the component and documented in the examination report. Where a percentage of weld length is not referenced, the entire weld length shall be examined.

When examinations have been completed on the various components, the data sheet(s) in Appendix C shall be completed.

Table B in Appendix A supplies additional information such as reference drawing numbers and ASME Section XI Table-2520 examination categories.

7.1 Steam Generators (4)

7.1.1 Steam Generator Secondary Circumferential Welds

There are five circumferential shell welds located at structural discontinuities on the secondary side of each steam generator. A total of five welds, all at different locations from the four generators, will be selected for ultrasonic examination and shall be distributed among the four generators. The examinations shall cover at least twenty percent of each weld selected for examination, uniformly distributed among three areas around the vessel circumference.

One of the five welds selected for examination is partially inaccessible due to the upper steam generator support arrangement (weld nos. SG-4B-5-1, 2, 3, or 4; see Request for Relief ISI-5). The weld selected for examination will be ultrasonically examined on a best effort basis.

The vessel shell and head sections are fabricated of SA-533, Gr. A, Class 1 steel plate.

7.1.2 Steam Generator Secondary Nozzle-To-Vessel Welds

There is one feedwater nozzle (16-inch I.D.), one feedwater by-pass nozzle (6-inch I.D.), and one main steam nozzle (32-inch I.D.) per generator. A total of three nozzle-to-vessel welds from the four generators will be ultrasonically examined and shall be distributed among three of the generators (one feedwater, one feedwater by-pass, and one main steam nozzle).

The nozzles are fabricated of SA-508, Class 2, steel.

7.1.3 Steam Generator Integrally-Welded Supports

There are no integrally-welded vessel supports.

7.1.4 Steam Generator Pressure-Retaining Bolting

Bolting on the two manway covers on the secondary side of each generator is not greater than two inches in diameter (see Request for Relief ISI-8). Each manway has 20 bolts at 1-1/4 inches in diameter.

7.2 Residual Heat Removal Heat Exchangers (2) - RHRHX

7.2.1 RHRHX Circumferential Welds

There are two circumferential welds located at structural discontinuities on the tube side of each RHRHX. A total of two welds from the two heat exchangers will be selected for ultrasonic examination and shall be distributed among the two RHRHX. The welds selected shall be located at different areas. The examinations shall cover at least twenty percent of each weld selected for examination, uniformly distributed among three areas around the vessel circumference.

The welds include the channel cylinder section to channel flange weld and the channel cylinder section to channel head weld. The channel flange is fabricated from SS, SA-336-F8. The channel cylinder section and channel head are from SS, SA-240, TP-304.

7.2.2 RHRHX Nozzle-To-Vessel Welds

The channel cylinder section of each RHRHX includes one inlet nozzle (14-inch I.D.) and one outlet nozzle (14-inch I.D.). A total of two nozzle-to-vessel welds from the two RHRHX will be ultrasonically examined and shall be distributed among the two heat exchangers (one inlet nozzle and one outlet nozzle).

The nozzles are fabricated from SS SA-336-F8.

7.2.3 RHRHX Integrally-Welded Supports

There are two integrally-welded support attachments on each RHRHX. A total of two support pad-to-vessel welds from the two heat exchangers will be liquid penetrant examined and shall be distributed among the two heat exchangers (a different support on each heat exchanger).

The support pad is fabricated from SS, SA-240, TP-304.

7.2.4 RHRHX Pressure-Retaining Bolting

The channel flange bolting on each vessel is less than 2 inches in diameter (see Request for Relief ISI-8).

Each flange includes 52 studs with nuts at 1-1/8 inches in diameter. The studs and nuts are fabricated from SA-193, Gr. B7 and SA-194, Gr. 2H respectively.

7.3 Piping

Material specifications for each piping system are included in weld map isometrics in Appendix A. The following Class B piping systems are subject to examination:

Residual Heat Removal
Safety Injection
Main Steam
Feedwater
Auxiliary Feedwater
Containment spray

7.3.1 Piping Circumferential Welds

Circumferential welds subject to examination shall include those welds at structural discontinuities and welds within three pipe diameters of the centerline of rigid pipe anchors, or anchors at the penetrations of primary containment, or at rigidly anchored components. Selection of areas to be examined shall be in accordance with IWC-2411 and Table IWC-2520 of ASME Section XI.

The entire length of each weld selected shall be ultrasonically examined.

7.3.2 Piping Longitudinal Welds

Areas subject to examination include longitudinal welds in fittings (i.e., tees, elbows, reducers). The entire length of each weld selected for examination in accordance with IWC-2411 and Table IWC-2520 of ASME Section XI shall be ultrasonically examined.

7.3.3 Branch Pipe Connection Welds

The entire length of all branch pipe connection welds selected for examination in accordance with IWC-2411 and Table IWC-2520 of Section XI will be ultrasonically examined.

7.3.4 Piping Pressure-Retaining Bolting

There is no pressure-retaining bolting larger than 2 inches in diameter (see Request for Relief ISI-8).

7.3.5 Piping Integrally-Welded Supports

All piping integrally-welded external support attachments shall be surface examined. Integrally-welded external support attachments include those supports which have attachment welds to the piping pressure-retaining boundary.

7.3.6 Piping Support Components

All piping support components shall be visually examined. This examination includes integrally-welded and nonintegrally-welded support components. The support settings of constant and variable spring type hangers, snubbers, and shock absorbers shall also be verified.

7.4 Residual Heat Removal Pumps (2) - RHRP

7.4.1 RHRP Casing Welds

The RHRP casing does not include any casing welds. The casing is a one piece forging fabricated to SA-182 F304.

7.4.2 RHRP Pressure-Retaining Bolting

The stuffing box extension to pump casing connection bolting is not greater than two inches in diameter (see Request For Relief ISI-8).

The connection includes 24 studs at 2-inches in diameter with nuts and washers. The studs are fabricated to SA-453, Gr. 660, and the nuts to SA-194, Gr. 6.

7.4.3 RHRP Integrally-Welded Supports

There are no integrally-welded supports associated with the RHRP.

7.4.4 RHRP Support Components

Each RHRP includes three support components bolted to the pump feet, which are integrally forged with the pump.

Each support component shall be visually examined.

7.5 Valves

7.5.1 Valve Body Welds

There are no Class B valves with body welds.

7.5.2 Valve Pressure-Retaining Bolting

There is no Class B pressure-retaining bolting greater than 2 inches in diameter (See Request for Relief ISI-8).

7.5.3 Valve Integrally-Welded Supports

All valve integrally-welded external support attachments shall be surface examined. Integrally-welded external support attachments include those supports which have attachment welds to the valve pressure-retaining boundary.

7.5.4 Valve Support Components

All valve support components shall be visually examined. This examination includes integrally welded and nonintegrally welded support components. The support settings of constant and variable spring type hangers, snubbers, and shock absorbers shall also be verified.

7.6 Exempted Components

All components exempted from examination in accordance with IWC-1220 of ASME Section XI shall be visually examined for leakage during system hydrostatic pressure tests. See Section 9.0 and Table 7.6.

Components exempted from examination include (1) components in systems where both the design pressure and temperature are equal to or less than 275 psig and 200 F, respectively; (2) components in systems or portions of systems, other than emergency core cooling systems, which do not function during normal reactor operation; (3) component connections, piping, and associated valves, and vessels (and their supports), that are 4-inch nominal pipe size and smaller.

8.0 COMPONENTS SUBJECT TO EXAMINATION - TVA SAFETY CLASS C AND D

8.1 Hydrostatic Pressure Tests

In accordance with 10 CFR 50, Section 50.55a(g)(2), a preservice examination of TVA Class C and D (ASME Class 3) components is not required. However, components will be visually examined for leakage by CONST during the system hydrostatic pressure tests required by ASME Section III.

8.2 Supports and Hangers

Supports and hangers for components exceeding 4-inch nominal pipe size whose structural integrity is relied upon to withstand design loads when the system function is required, shall be visually examined to detect any loss of support capability, and evidence of inadequate restraint.

When these examinations have been completed, the Data Sheet(s) in Appendix C shall be completed.

9.0 HYDROSTATIC PRESSURE TESTS

Class A, B, C, and D components (including exempted components) shall be visually examined for leakage during system hydrostatic pressure tests. These examinations shall be performed by CONST during the ASME Section III hydrostatic tests.

10.0 AUTHORIZED INSPECTOR

TVA shall employ an Authorized Inspector(s) in accordance with ASME Section XI. The Inspector shall verify, assure, or witness that code requirements have been met. He shall have the prerogative and authorization to require requalification of any operator or procedure when he has reason to believe the requirements are not being met. TVA shall provide access for the AI in accordance with IWA-2140 of ASME Section XI. Requirements for interface with the ANI and ANII are included in QQAM Part II, Section 2.3 and 5.1 respectively.

11.0 EXAMINATION METHODS

11.1 Visual Examination

A visual examination is employed to provide a report of the general condition of the part, component, or surface to be examined, including such conditions as scratches, wear, cracks, corrosion, or erosion on the surfaces; misalignment or movement of the part for component; or evidence of leakage.

Visual examination shall be conducted in accordance with Article 9, Section V, of the ASME Code, except that lighting shall be sufficient to resolve the 1/32-inch wide black line on an 18-percent neutral gray background.

11.2 Surface Examination (Magnetic Particle)

Magnetic particle examination shall be conducted in accordance with Article 7, Section V, of the ASME Code.

11.3 Surface Examination (Liquid Penetrant)

Liquid penetrant examination shall be conducted in accordance with Article 6, Section V, of the ASME Code.

11.4 Volumetric Examination (Radiographic)

Radiographic techniques, employing penetrating radiation such as X-rays, gamma rays, or thermalized neutrons, may be utilized with appropriate image recording devices such as photographic film or papers, electrostatic systems, direct-image orthicons, or image converters. For radiographic examinations employing either X-ray equipment or radioactive isotopes and photographic films, the procedure shall be as specified in Article 2, Section V, of the ASME Code.

11.5 Volumetric Examination (Ultrasonic)

Ultrasonic examination shall be conducted in accordance with the provisions of Appendix I of Section XI of the ASME Code. Where Appendix I (I-1200) is not applicable, the provisions of Article 5 of Section V of the ASME Code shall apply except as noted in Section 3.0 of this program.

11.6 Volumetric Examination (Eddy Current)

Eddy current examination of heat exchanger tubing shall be conducted in accordance with the provisions of Appendix IV of Section XI of the ASME Boiler and Pressure Vessel Code (Summer 1976 Addenda).

12.0 QUALIFICATIONS OF NONDESTRUCTIVE EXAMINATION PERSONNEL

Personnel performing nondestructive examination operations shall be qualified in accordance with IWA-2300 of ASME Section XI (DPM N75C01 for NUC PR).

13.0 ACCEPTANCE CRITERIA

All acceptance standards for Class A and B components shall be in accordance with IWA-3000 of ASME Section XI, except where ASME Section III examinations are employed to satisfy ASME Section XI requirements.

14.0 REPAIRS

This section provides requirements for repair of the pressure retaining boundary of TVA Safety Class A, B, C, and D (ASME Class 1, 2, and 3) components (and their supports). The repair program is included in QQAM Part II, Section 2.1.

Repairs shall be performed in accordance with the Design Specification and Construction Code of the component or system. Later editions of the Construction Code or Section III, either in its entirety or portions thereof, may be used. If repair welding cannot be performed in accordance with these requirements, the repair may be made in accordance with IWA-4000 and IWB-4000, IWC-4000, or IWD-4000 as applicable. Material shall conform to the requirements of either the original design specification or ASME Section III.

After repairs by welding on the pressure-retaining boundary of components, a hydrostatic pressure test shall be performed in accordance with IWA-5000 and IWB-5000, IWC-5000, or IWD-5000 as applicable of ASME Section XI. The following may be exempted from these pressure tests exclusive of those repairs employing a temper bead technique:

(1) Cladding repairs,

(2) Heat exchanger tube plugging,

(3) Piping, pump, and valve repairs that do not penetrate through the pressure boundary,

(4) Pressure vessel repairs where the repaired cavity does not exceed 10 percent of the minimum design wall thickness, and

(5) Component connections, piping, and associated valves that are one inch nominal pipe size and smaller.

Repaired areas shall be examined in accordance with applicable nondestructive methods to establish a preservice record (See Sections 6.0, 7.0, and 8.0). These examinations shall include the method that detected the flaw. If the repair is performed in accordance with the provisions of the code applicable to the construction of the component, any additional nondestructive examinations required by the Construction Code shall be performed (excluding pressure test requirements). The requirements are not applicable if the repair includes the complete removal or isolation of the item bearing the flaw, such as heat exchanger tube plugging.

The services of an Authorized Inspection Agency shall be used when making a repair. The ANI shall assure that the repair welding procedures and welders are qualified in accordance with IWA-4000 of ASME Section XI. (See Section 10.0).

The records and reports of Section 16.0 shall be completed for all repairs.

15.0 REPLACEMENTS

This section provides requirements for replacements of TVA Safety Class A, B, C, and D (ASME Class 1, 2, and 3) components (and their supports). Additional requirements are included in OQAM, Part II, Section 3.0.

Replacements shall meet the requirements of the edition of the Construction Code to which the original component or part was constructed (the Code Edition and Addenda shall be specified). Replacements ordered as spares for future use at an unspecified time should meet the requirements of the Construction Code Edition

used for the original part or component that is intended to be replaced. DPM N76A10 shall be used as applicable. Replacements for parts or components originally constructed without code requirements shall be in accordance with the original design, fabrication, and inspection requirements for the part or component being replaced.

Alternatively, replacements may meet all or portions of the requirements of later editions of the Construction Code, provided that the following requirements are met:

(1) The requirements affecting the design, fabrication, and examination of the replacement are reconciled with TVA's specification.

(2) Mechanical interfaces, fits, and tolerances that provide satisfactory performance are not changed by the later edition of the Construction Code.

(3) Modified or altered designs are reconciled with TVA's specifications through the Stress Analysis Report, Design Report, or other suitable method which demonstrates the satisfactory use for the specified design and operating conditions, whichever is applicable.

(4) Materials are compatible with the installation and system requirements.

Prior to authorizing the installation of a replacement, an evaluation of the suitability of the replacement shall be conducted. If a replacement is required because of failure of a part or component, the evaluation shall consider cause(s) of failure of the existing part or component to assure that the selected replacement is suitable. If cause of failure appears to be a deficiency in the specification for the existing part or component, the specification for the replacement shall reflect appropriate corrective provisions. Any such corrective provisions shall be consistent with relevant requirements of the Construction Code in effect at the time of specification revision. The report of the evaluation shall be made a part of the replacement record.

Welding required for the installation of a replacement shall be performed by welders who are qualified in accordance with ASME Section IX, and by using procedures that are qualified in accordance with ASME Section IX, and the additional heat treating and impact tests required by IWB-4000 of ASME Section XI.

The application of the ASME NA symbol stamp is neither required nor prohibited for the installation of replacements.

The following items and parts are exempt from the requirements of this section:

(a) gaskets;

(b) instruments;

(c) electrical conducting and insulating material;

(d) piping, valves, and fitting 1 in. nominal pipe size and less, except that materials and primary stress levels shall be consistent with the requirements of the applicable Construction Code. Detailed stress analysis and consideration of secondary stress is not required.

(e) nonstructural pump and valve internals except when the original equipment was constructed in accordance with a Construction Code or Code Case;

(f) pump seal package and valve packing.

The following reports and records shall, to the extent required by the Construction Code and this section be maintained by TVA as applicable:

(1) Certified Design Specification

(2) Certified Stress Report

(3) Design Report

(4) Overpressure Protection Report

(5) Manufacturer's Data Report

(6) Material Certification

(7) Evaluation Report of Replacements

Revisions to existing reports, records, and specifications may be shown as an amendment, or as a supplement, and attached to the original record or report to provide an up-to-date record of the replacement.

A preservice inspection shall be made in accordance with IWB-2100, IWC-2100, and IWD-2100 of ASME Section XI for the component and part replaced, as applicable, and including the joints that connect the replaced component or part to the system, prior to return of the plant to service.

ASME Section XI repairs and replacements may be coordinated as necessary with the Metallurgy and Standards Group of the Technical Services. Repairs and replacements which require NDE shall be coordinated with the Inspection Section.

15.1 Installation of Replacements - TVA Safety Class A

Flanged joints may be used in piping systems. Expanded joints shall not be used in piping systems.

Threaded joints in which the threads provide the only seal shall not be used in pipe joint configurations. If a seal weld is employed as the sealing medium, the stress analysis of the joint shall include the stresses in the weld resulting from the relative deflections of the mated parts.

Flared, flareless, and compression-type tubing fittings may be used for tubing sizes not exceeding 1 in. O.D. within the limitations of applicable standards and requirements (2) and (3) below. In the absence of such standards or specifications, the cognizant engineer shall determine that the type of fitting selected is adequate and safe for the design conditions in accordance with the following requirements:

(1) The design pressure or pressure ratings shall be reconciled with the TVA's specifications.

(2) Fittings and their joints shall be suitable for the tubing with which they are to be used in accordance with the minimum wall thickness of the tubing and method of assembly recommended by the manufacturer.

(3) Fittings shall not be used in services that exceed the manufacturer's maximum pressure-temperature recommendations.

(4) Fittings shall be installed in accordance with the manufacturer's recommendations.

The methods of ASME Section III, Appendix E, shall be used to determine bolt size and torquing loads, unless mating parts built to other requirements make this impractical.

The rules and requirements of Section 14.0 shall apply to the attaching of replacements to the system where such attachment is by welding.

Materials shall comply with the requirements to which the original component or part was constructed. As an alternative, materials may comply with the requirements of ASME Section III, NB-2000 provided the requirements of Section 15.0 are met.

15.2 Installation of Replacements - TVA Safety Class B

Nonwelded piping joints shall meet the requirements of NC-3671 or ASME Section III.

The methods of ASME Section III, Appendix E, shall be used to determine bolt size and torquing loads, unless mating parts built to other requirements make this impractical.

The rules and requirements of Section 14.0 shall apply to the attaching of replacements to the system where such attachment is by welding.

Materials shall comply with the requirements to which the original component or part was constructed. As an alternative, materials may comply with the requirements of ASME Section III, NC-2000 provided the requirements of Section 15.0 are met.

15.3 Installation of Replacements - TVA Safety Class C and D

Nonwelded piping joints shall meet the requirements of ND-3671.

The methods of ASME Section III, Appendix E, shall be used to determine bolt size and torquing loads, unless mating parts built to other requirements make this impractical.

The rules and requirements of Section 14.0 shall apply to the attaching of replacements to the system where such attachment is by welding.

Materials shall comply with the requirements to which the original component or part was constructed. As an alternative, materials may comply with the requirements of ASME Section III, ND-2000 provided the requirements of Section 15.0 are met.

16.0 RECORDS AND REPORTS

16.1 Recording of and Report of Examinations

A detailed report of all examinations shall be prepared by the performing or responsible organization and shall contain but not be limited to the following information:

(1) Date and time of examination

(2) Identification of part examined including wall thickness, type material, part temperature, and unit identification

(3) Identification of TVA's or contractor's examiner and personnel certification

(4) Type of examination (PT, UT, etc.) and specific NDE procedure used

(5) Certification of NDE materials such as penetrant, couplant, etc

(6) Results of examination

(7) Corrective action and repairs

(8) M&TE and inspection equipment used and their calibration due dates

(9) For eddy current examination of heat exchange tubing, the report shall include a record indicating the tube(s) examined (this may be marked on a tube sheet sketch or drawing), the extent to which each tube was examined, the location and depth of each reported indication, and the identification or the operator(s) and data evaluator(s) who conducted each examination or part thereof.

All procedures and equipment shall be identified sufficiently to permit duplication of the examination at a later date. This shall include initial calibration data for the equipment and any significant changes.

A marked drawing or sketch shall indicate the weld or part examined. Information should also include all other pertinent data that would later permit duplication or relocation of a flaw, such as transducer type, size, shape, frequency, beam angle, couplant, and distances from some given reference points.

All required and pertinent information will be recorded on the appropriate data sheets by the performing organization. When portions of the inspection work are contracted, a detailed report will be submitted to TVA by the contractor with all pertinent and required information. TVA will retain the original copies of all raw data taken. The Inspection Section shall prepare detailed reports for the remaining inspection work.

The Inspection Section shall prepare and/or review and approve the final report. The final report shall be submitted to the Plant Superintendent for retention at the plant site. Alternatively, final reports may be submitted as portions of the PSI are completed (i.e., final report of reactor vessel examination). These final reports shall be filed at the plant site with the Data Sheets of Appendix C of this program as discussed in Section 4.0 of this program.

16.2 PSI Report for Class A and B Components

A PSI report(s) for Class A and B components shall be prepared and submitted to NRC within ninety days after completion of the PSI. The report shall be prepared by the NCO QA Staff and submitted to the Regulatory Staff for submittal to NRC.

The PSI report shall have a cover sheet providing the following information:

(1) Date

(2) Name of owner and address of corporate offices

(3) Name and address of nuclear generating plant in which the nuclear power unit is located

(4) Name or number assigned to the nuclear power unit by TVA

All reports shall have a summary providing the following information:

(1) National Board Number assigned by the manufacturer to the pressure vessel or component

(2) Names of the components or parts of the components for which this is a record, including such information regarding size, capacity, material, location, and drawings as may aid accurate identification.

(3) Name of the manufacturer of the components or parts for which this is a record, including the manufacturer's component or part numbers and such information regarding the manufacturer's corporate office or manufacturing plant locations as may aid in gaining access to the manufacturer's records regarding the components or parts that the manufacturer is maintaining in accordance with requirements of ASME Section III.

(4) Date of completion of the preservice inspection

(5) Name or names of the Inspector(s) when required

(6) Name and mailing address of the employer(s) of the Inspector(s)

(7) Abstract of examinations performed, conditions observed, corrective measures recommended and taken

(8) Signature of Inspector, when required

The PSI Report shall have an owner's data report for inservice inspection, Form NIS-1 as shown in Appendix II of ASME Section XI.

16.3 Records for Class A, B, C, and D Components

The following records shall be available for review:

(1) Examination Plans

(2) Examination Results and Reports

(3) Examination Methods and Procedures

(4) Evaluation of Results

(5) Corrective Actions and Repairs

16.4 Records of Hydrostatic Pressure Tests

Records of the visual examinations conducted in accordance with IWA-5000 of ASME Section XI during system hydrostatic tests as required by Section 9.0 of this program should include an itemization of the number and location of leaks found in a system and the corrective actions taken.

17.0 NOTIFICATION OF INDICATION

Plant management shall be formally notified of the presence of unacceptable indications detected during the performance of nondestructive examinations. Unacceptable indications are defined by the applicable NDE procedure. Formal notification shall consist of completing and submitting to the Plant Superintendent the "Notification of Indication" form in Appendix D of this program.

Part I of the "Notification of Indication" shall be completed and signed by the NDE Level II or III examiner detecting the indication. The Inspection Section representative of the Inspection Section Staff shall review and sign the form. If the indication is detected by an outside contractor, the contractor's field supervisor shall review and sign the form.