INTRODUCTION

This report defines the Inservice Inspection (ISI) Program for Class 1, Class 2, and Class 3 pressure retaining components for the 10-year period starting September 26, 1983, to September 26, 1993, and Class 1, Class 2, and Class 3 pump and valve testing for the 10-year period from September 26, 1983, to September 26, 1993.

This program has been developed as required by Sec. 50.55(a) of 10 CFR Part 50 following the guidance of the ASME Boiler Pressure Vessel Code Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components". The ISI Program will be controlled by the Fort Calhoun Station Unit 1 Technical Specifications.

This program is in compliance, where possible, with the applicable requirements of Section XI, of the ASME Boiler and Pressure Vessel Code, 1980 Edition through Winter of 1980 Addenda.

This program incorporates the results of previous inservice and preservice inspections. It is the intent of the Licensee to continue to review and apply, as appropriate, changes in the code which would improve the total ISI Program, pursuant to 10 CFR 50.55(a).

PART 1: Class 1, Class 2, and Class 3 Pressure Retaining Components

1.1 Scope and Responsibility

1.1.1 The Piping and Instrumentation Drawings (P&IDs) in Appendix 1A identify the class boundaries. These are always under review and are subject to change.

1.1.2 Class 1 and Class 2 components and the methods of examination for each component are listed in Tables 1.1 and 1.2, respectively. Class 3 components are those found on the P&IDs in Appendix 1A. The specific components to be examined for each class shall be identified in the Fort Calhoun Station Unit 1 Inservice Examination Plan by title and/or number. Class 3 components will be examined to the extent required by IWD-2500. Class 3 portions of the Waste Disposal System have been optionally classified as Class 3 in accordance with Subarticle IWA-1300, Paragraph (g.) of the Section XI Code. Examination in accordance with the rules of Article IWD will not be performed on the Class 3 portion of the Waste Disposal System. Exceptions to compliance with Tables IWB-2500 and IWC-2500 of Section XI are listed in Appendix 1B and Appendix 1C, respectively.

1.2 Inspection Intervals

1.2.1 The inspection intervals for Class 1, Class 2, and Class 3 components will be 10-year intervals of service commencing on September 26, 1973. As indicated previously, this program plan covers the second 10-year interval, i.e., September 26, 1983, to September 26, 1993.

APPENDIX 1B

Exceptions to Compliance with Table IWB-2500-1
(Class 1 Components) in ASME Boiler and Pressure Vessel Code,
Section XI, 1980 (Winter Addenda)

Item No.	Exception
B 1.40	The closure head-to-flange weld has physical obstructions which limit the extent of the ultrasonic and surface exam. Specifically, there are twelve seismic skirt mounting lugs, each six inches wide, located 37 inches apart, evenly spaced around the exam area. Thus 72 inches of the head-to-flange weld cannot be examined due to this physical obstruction. Also, due to interference from the seismic skirt and the head flange, the UT scanning is limited to 4 inches either side of the head-to-flange weld. This restricts the volume of the weld examination, and, depending upon the angle of the transducers used, may result in less than the code-required weld volume to be examined. Radiation levels of 7-8 R/Hr. area and 10 R/Hr. surface have prohibited access to perform the UT from the inside surface of the head. Therefore, a volumetric and surface exam will be done only on the accessible portions of the closure head-to-flange weld.
B 3.10	The nozzle-to-vessel welds cannot be 100% volumetrically examined since the nozzle supports present an interference to currently available equipment. The nozzle-to-vessel welds will be examined during the reactor vessel examination. This examination will be from the inside.
B 3.30	The pressurizer surge line nozzle-to-shell weld cannot be 100% volumetrically examined due to interference from heater penetrations. The weld will be volumetrically examined to the extent possible. The weld area will be visually examined for leakage near the end of the inspection interval in accordance with IWB-5221 and IWB-5222.
B 3.40	The pressurizer surge line inside radius section cannot be 100% volumetrically examined due to interference from heater penetrations. The area will be volumetrically examined to the extent possible. The area will be visually examined for leakage near the end of the inspection interval in accordance with IWB-5221 and IWB-5222.
B 6.20 & B 6.30	Closure head studs will be ultrasonically examined from the center drilled hole in accordance with ASME Code Case N-307 as referenced in Regulatory Guide 1.147, Inspection Code Case Acceptability.
B 9.10 - 9.40	The primary piping is fabricated using centrifugally cast stainless steel pipe and cast stainless steel elbows.

Experience has shown that these materials and welds are not always amenable to ultrasonic examination. Radiographic techniques have been developed to substantially overcome this problem. Volumetric examination will be performed to the extent practical and according to the schedule designated in the Examination Plan. Should other specialized ultrasonic examination techniques become practical which are more effective, they will be incorporated into the Examination Plan.

Inaccessible Piping Welds:

Figure No.*	Line No.	Weld No.
A-22	12 in. - SI-12	16
A-25	12 in. - SI-24	16
A-27	6 in. - SI-14	10
A-27	6 in. - SI-14	11
A-32	3 in. - HPH-22	1
A-32	3 in. - HPH-22	3
A-38	2 in. - HPH-2.12	5
A-42	12 in. - SDC-20	7

The welds listed above are inaccessible for examination because they are located within walls or floors. Areas on either side of the walls or floors containing these piuping welds will be examined for signs of leakage during the pressure and hydrostatic testing of the piping systems.

B 12.10 The reactor coolant pump casings are made of cast stainless steel sections which are then welded together. This type of material is not amenable to ultrasonic examination. Further, radiographic examination of a Byron Jackson pump casing has not yet been demonstrated to be feasible in an operating environment. Acceptable methods of performing a volumetric examination of these welds may be developed before the end of the second 10 year inspection interval. If such methods are found, they will be considered for use at the Fort Calhoun Station. If no acceptable volumetric examination can be performed, a surface exam will be performed on 100% of the casing welds on one pump prior to the end of this 10-year inspection interval.

B 12.20 The District's position is that a visual examination will be performed only if a pump is disassembled for maintenance permitting such inspection. This is judged to be adequate based upon design, fabrication, and accessibility considerations.

*See the 10-Year Inservice Examination Plan, Fort Calhoun Station Unit 1

Test Parameter	Frequency	Subarticle Exceptions	Operating Modes Required for Testing
Inlet Pressure	Quarterly	IWP-3100	1, 2 or 3
Differential Pressure	Quarterly	IWP-3100	1, 2 or 3
Flow Rate	Quarterly	-	1, 2 or 3
Vibration Amplitude	Quarterly	-	1, 2 or 3
Bearing Temperature	Yearly	-	1, 2 or 3

Exceptions:

IWP-3100 Inlet pressure measurement

Basis: System design does not permit direct measurement of inlet pressure. Inlet pressure to be measured by observing Aux FW tank level or head.

Differential pressure measurement

Basis: Because of the inability to measure inlet pressure, direct differential pressure measurement is not possible, but it will be calculated by subtracting input from output pressure (in consistent units.)

SI-194 195 197 198 200 201 203 204	These valves function to prevent back-flow through the safety injection pump discharge headers. These valves cannot be stroke-tested during cold shutdowns or quarterly during operation because to do so using the safety injection system would require introducing cold water into the reactor coolant system causing thermal shock and possibly a reactor excursion. To do so using the chemical volume control system would disrupt charging and letdown flow to the reactor coolant system causing chemical and volume control to the system to be disrupted. Testing shall be performed per Tech. Spec. 2.1, and Tech. Spec. 3.3(3).
SI-208 212 216 220	These valves function to prevent back-flow from the reactor coolant system through the safety injection system. These valves cannot be tested during cold shutdowns or quarterly during operation because to do so would introduce cold charging water to the reactor coolant system causing thermal shock. The valves cannot be partial-stroked for the same reasons. Testing shall be performed per Tech. Spec. 2.1, and Tech. Spec. 3.3(3).
HCV-240	Cycling this valve during operation would cause excess pressurizer spray, causing a reactivity excursion.
HCV-249	Cycling this valve during operation would cause excess pressurizer spray, causing a reactivity excursion.

CATEGORY B VALVES (Cont'd)

Valve Number (System)	Valve Type	P&ID Number	P&ID Location	Size	Max. Permissible Stroke Time Sec.	(Oper.)	Exercise Test Schedule	Nor. Pos., Failure Mode	Exceptions (Refer to Appendix 2C)
HCV-1387B(FW)	Gate	GHDR-11405-M-253	C2	2"	51	(AD)	CS	NO, FC	Ex
HCV-1388A(FW)	Gate	GHDR-11405-M-253	A2	2"	39	(AD)	CS	NO, FC	Ex
HCV-1388B(FW)	Gate	GHDR-11405-M-253	A2	2"	39	(AD)	CS	NO, FC	Ex
LCV-218-2(CH)	Gate	CE-E-23866-210-120-1 of 2	I4	4"	28	(MO)	RO	NO	Ex
HCV-238(CH)	Globe	CE-E-23866-210-120-1 of 2	A7	2"	48	(AD)	Q	NO, FO	
HCV-239(CH)	Globe	CE-E-23866-210-120-1 of 2	A7	2"	51	(AD)	Q	NO, FO	
HVC-240(CH)	Globe	CE-E-23866-210-120-1 of 2	A8	2"	50	(AD)	RO	NC, FC	Ex
HVC-247(CH)	Globe	CE-E-23866 210-120-1 of 2	B7	2"	NA	(SO)	Q	NO, FO	
HVC-248(CH)	Globe	CE-E-23866 210-120-1 of 2	B7	2"	NA	(SO)	Q	NO, FO	
HVC-249(CH)	Globe	CE-E-23866 210-120-1 of 2	A8	2"	NA	(SO)	RO	NC, FC	Ex
HCV-257(CH)	Globe	CE-E-23866-210-121	F4	2"	20	(AD)	Q	NO, FC	
HCV-258(CH)	Gate	CE-E-23866-210-121	E3	3"	46	(MO)	RO	NC	Ex