

**NUCLEAR ENGINEERING DEPARTMENT
Component, Support and Inspections
P.O. Box 14000
Juno Beach, Florida 33408**

**St. Lucie Nuclear Power Plant
Unit 2**

ATTACHMENT C

**SUBSEQUENT INSERVICE EXAMINATION PLAN
FOR THE
PRESSURIZER INSTRUMENT NOZZLES**

Prepared by

**Florida Power and Light Company
Code Programs Section**

For

**St. Lucie Nuclear Power Plant
10 Miles South of Ft. Pierce on A1A
Ft. Pierce, Florida 33034**

Commercial Service Date: August 8, 1983
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Revision Number: 0 Date: February 3, 1995

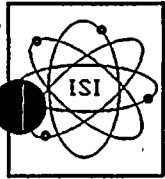
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ST. LUCIE UNIT 2

SECOND INSERVICE INSPECTION INTERVAL
 SUBSEQUENT INSERVICE EXAMINATION PLAN
 FOR
 PRESSURIZER INSTRUMENT NOZZLES

PSL-200-95-PRZ

Revision 0

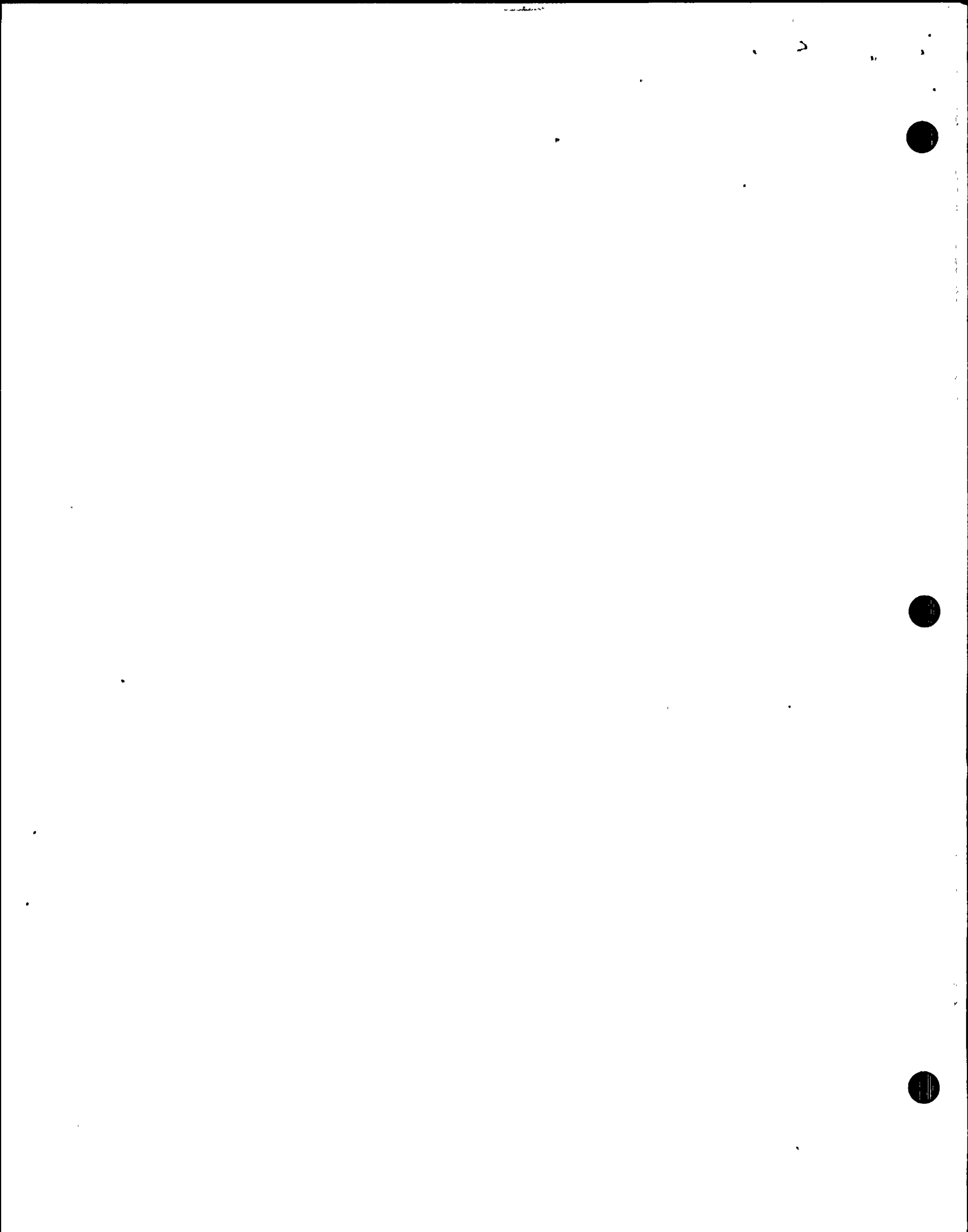
February 3, 1995

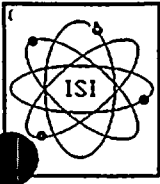
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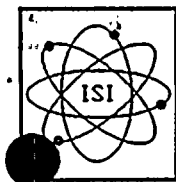
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RECORD OF REVISION

| REVISION No. | DATE | AFFECTED PAGES | REASON FOR REVISION |
|--------------|------------------|-----------------|---------------------|
| 0 | February 3, 1995 | Entire Document | Initial issue |



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ABSTRACT

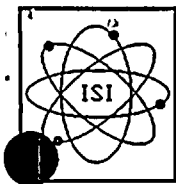
This document provides the Florida Power and Light Company proposed plan and schedule for performing subsequent inservice reexaminations of the St. Lucie Unit 2 Pressurizer Upper Head Steam Space Instrument Nozzle indications as required by the American Society of Mechanical Engineers (ASME), Boiler and Pressure Vessel Code (B&PVC), Section XI.

The Pressurizer Instrument Nozzles are classified as Quality Group A, ASME Code Class 1, and therefore governed by the rules and requirements set forth in the applicable Edition and/or Addenda of Section XI, to the extent practical within the limitations of design, geometry and materials of construction of the components as stated in 10 CFR 50.55a (b)(2).

During the 1994 refueling outage, external leakage was identified at the pressurizer steam space instrument nozzle "C". Supplemental surface examinations of the J-welds for three of the four nozzles identified several indications which exceeded the acceptance criteria of IWB-3000. An analytical evaluation IWB-3132.4, was performed in accordance with the requirements IWB-3600 to allow the unit to return to service for one fuel cycle.

The proposed plan and schedule included within this document addresses the subsequent inservice reexamination requirements of IWB-2420, where the acceptance criteria of IWB-3600 are satisfied, and the area (s) containing the flaws requires reexamination.

Figure 3-1 identifies each instrument nozzle selected for reexamination. This Figure provides such information as component identification, component description, nondestructive examination method, and the proposed schedule within the Second Inservice Inspection Interval and by period the inservice reexaminations are to be performed.



1.0 INTRODUCTION

This document provides the proposed Inservice Examination Schedule for the subsequent reexaminations of the St. Lucie Nuclear Power Plant, Unit 2, Pressurizer Upper Head Steam Space Instrument Nozzles.

The Commercial Service Date for St. Lucie Nuclear Power Plant Unit 2 was August 8, 1983.

1.1 INSPECTION INTERVAL

The Second Inservice Inspection Interval became effective on August 8, 1993 and is scheduled to end on August 8, 2003.

1.2 INSPECTION PERIODS

The Second Inservice Inspection Interval is divided into three successive inspection periods as determined by calendar years of plant service within the interval. Identified below are the period dates for the second inspection interval.

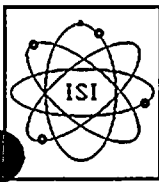
| PERIOD | START | END |
|--------|----------------|----------------|
| 1 | August 8, 1993 | August 8, 1996 |
| 2 | August 8, 1996 | August 8, 2000 |
| 3 | August 8, 2000 | August 7, 2003 |

1.3 APPLICABLE DOCUMENTS

- ASME Boiler and Pressure Vessel Code, Sections V, 1989 Edition, "Nondestructive Examination"
- ASME Boiler and Pressure Vessel Code, Section XI, 1989 Edition, "Rules for Inservice Inspection of Nuclear Power Plant Components"
- PSL-200, St. Lucie Unit 2 Second Inservice Inspection Interval Program, Plan and Schedule, revision 0, July 24, 1993.
- 32-1235128-00, Fracture Mechanics Analysis of St. Lucie Pressurizer Instrument Nozzle, revision 0, December 23, 1994
- 32-1235127-00, Stresses for St. Lucie Unit 2 Pressurizer LEFM, revision 0, December 8, 1994

1.4 APPLICABLE CODE EDITIONS AND ADDENDA

Pursuant to Title 10, Part 50, Section 55a(g)(4), of the Code of federal regulations, the Inservice Inspection requirements applicable to nondestructive examination for the Second Inservice Inspection Interval is based on the rules set forth in the 1989 Edition of Section XI, hereafter, referred to as the Code.



2.0 DEVELOPMENT OF INSPECTION PLAN

This document provides the proposed plan and schedule for conducting inservice nondestructive reexaminations of the Florida Power and Light Company's (FPL), St. Lucie Nuclear Power Plant Unit 2, four Pressurizer Upper Head Steam Space Instrument Nozzle.

2.1 BACKGROUND

During the 1994 refueling outage, external leakage was identified at the pressurizer steam space instrument nozzle "C". Supplemental surface (liquid penetrant) examinations of the J-welds for three of the four nozzles identified several indications on the inside surface which exceeded the acceptance criteria of IWB-3000. An analytical evaluation IWB-3132.4, was performed in accordance with the requirements IWB-3600 to allow the unit to return to service for one fuel cycle.

Following the units return to service, FPL contracted with B&W Nuclear Service Company to provide a bounding flaw evaluation of the 1.0 inch nozzles in the pressurizer. The results of this flaw evaluation were acceptable for the design life of the plant, per IWB-3612 of the Code.

In accordance with IWB-2420(b), FPL is required to conduct reexaminations on the four Pressurizer Upper Head Steam Space Nozzles for three consecutive inspection periods.

Summarized below is the proposed plan FPL will utilize to conduct these reexaminations.

2.2 DESCRIPTION OF REPAIR/MODIFICATION

During the 1994 refueling outage FPL performed a repair/modification of the four Pressurizer Upper Head Steam Space Instrument Nozzle. This repair/modification consisted of welding an external pad to the outside surface of the pressurizer shell. Welding was performed in accordance with ASME Code Case N-432, Repair Welding using Automatic or Machine Gas Tungsten - Arc Welding (GTAW) Temperbead Technique.

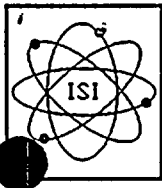
Due to the repair/modifications unique configuration and the need to be able to monitor the flaw over the service life of the pressurizer, FPL proposes the following:

2.3 NONDESTRUCTIVE EXAMINATION PROCEDURE

Reexamination of the four Pressurizer Upper Head Steam Space Instrument Nozzles will be performed in accordance with a qualified FPL nondestructive examination procedure which conforms to the requirements of the FPL Quality Assurance Program and the applicable Code. This procedure shall be written specifically for monitoring flaw indications.

2.4 NONDESTRUCTIVE EXAMINATION METHOD

FPL proposes to conduct a manual volumetric (ultrasonic) examination from the outside surface of the pressurizer shell in monitoring the progression of the flaw(s) over the service life of the component. The technique to be used shall be qualified and demonstrated to the satisfaction Authorized Nuclear Inservice Inspector.



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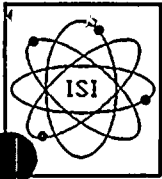
2.5 ULTRASONIC CALIBRATION BLOCK

FPL has fabricated an ultrasonic calibration block (mock-up) of the pressurizer instrument nozzle for the conduct of these reexaminations.

2.6 INSPECTION SCHEDULE

Commencing with the 1995 refueling outage, which is currently scheduled to begin on September 25, 1995, FPL will perform the initial examination of the four steam space nozzles utilizing the above plan. The reexaminations as required by IWB-2420 (b) will be accomplished as follows:

1. Second Inspection Interval - Reexamination in the second and third inspection period
2. Third Inspection Interval - Reexamination in the first inspection period.



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3.0 RECORDS

3.1 General

Records and Reports of Inservice Examination activities (such as Programs, Plans, Schedules, calibration, examination procedures, examination results, final reports, equipment and personnel certifications, corrective actions taken or recommended will be developed and maintained in accordance with IWA-6000 of the ASME Boiler and Pressure Vessel Code, Section XI.

3.1.2 INSPECTION ZONES

Systems subject to examination have been divided into zones. Each zone is defined by a weld/support location map (see ISI Sketch 02-005-B attached), which identifies and locates each steam space nozzle subject to reexamination within zone 005.

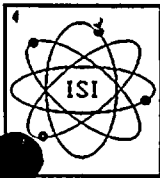
3.2 FINAL REPORTS

Following the completion of each Inservice Inspection Activity, FPL shall prepare a Inservice Inspection Final Report. The Final Report will be filed at the St. Lucie site Document Control Center.

This report shall be made available for review by the Enforcement and Regulatory Authority having jurisdiction at the plant site.

3.3 INSERVICE INSPECTION SUMMARY REPORT

Following the units return to service, FPL shall forward a Summary Report of the ISI activity to the Nuclear Regulatory Commission. Results of reexaminations conducted during a inspection period on the pressurizer steam space nozzles shall be addressed within the summary report submittal.



ST. LUCIE UNIT 2

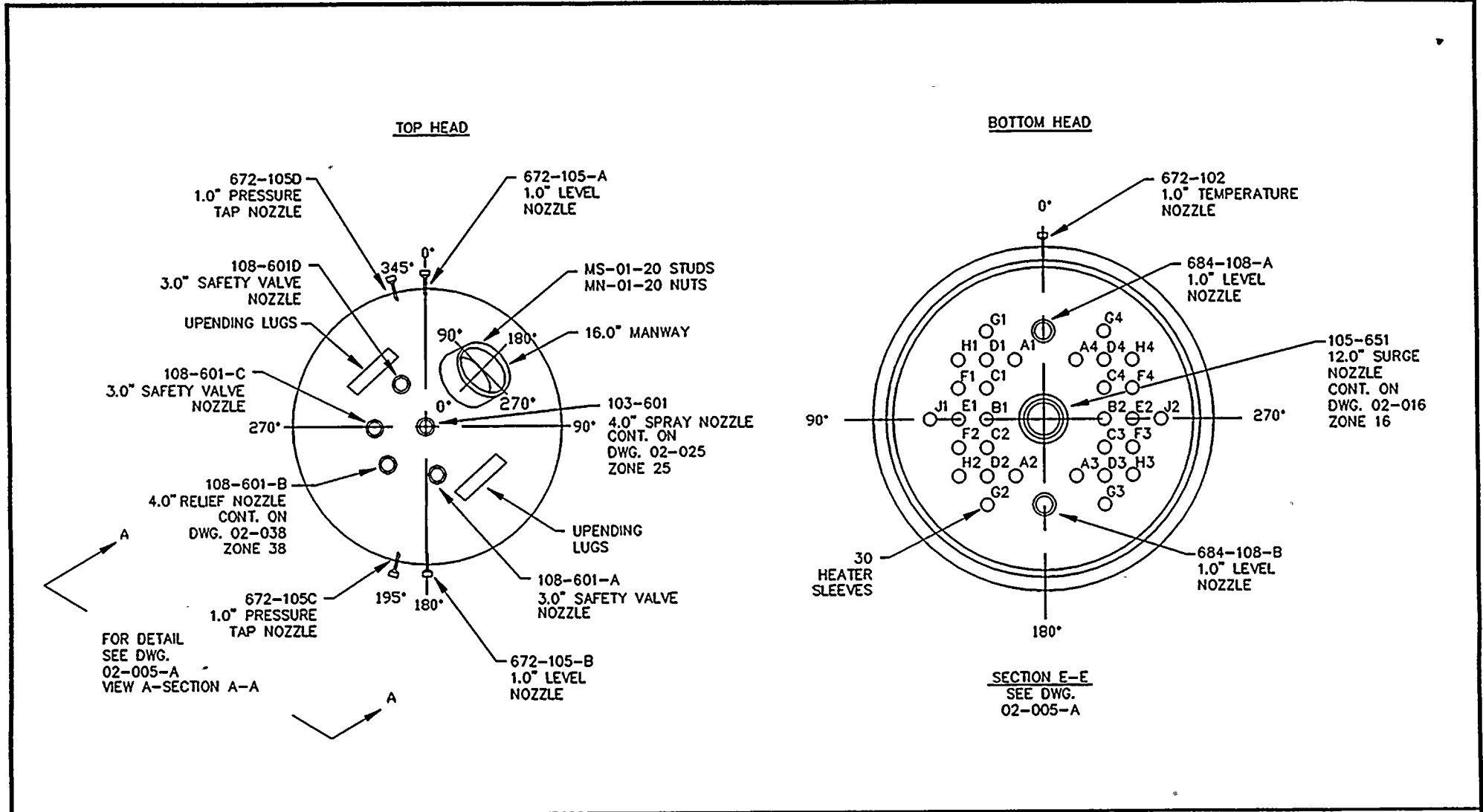
DATE: February 3, 1995


INSERVICE INSPECTION SCHEDULE
 CLASS 1
 PRESSURIZER STEAM SPACE
 INSTRUMENT NOZZLE

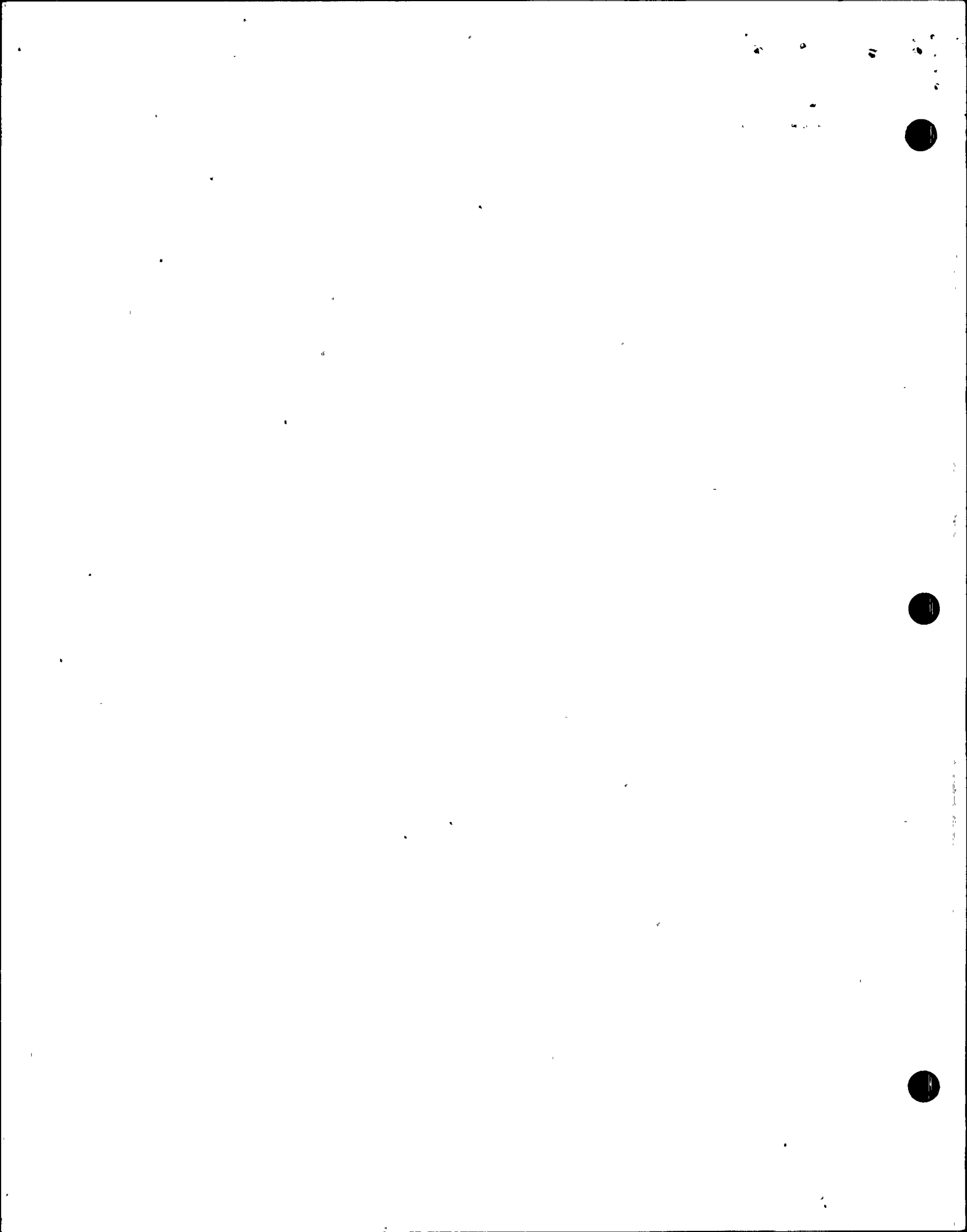
| SYSTEM: ZONE NUMBER: | Reactor Coolant System 005 | NDE METHOD | INSPECTION INTERVAL | | | | | | | | | | |
|-------------------------|-------------------------------------|---------------|---------------------|---|---|---------------|---|---|--------------|---|---|--|------|
| | | | FIRST PERIOD | | | SECOND PERIOD | | | THIRD PERIOD | | | | |
| SUMMARY NUMBER | EXAM. AREA IDENTIFICAT | | OUTAGE | | | | | | | | | INSTRUCT. CAL BLCK | |
| | | | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | | |
| ISI Sketch: | 02-005-B | | | | | | | | | | | | |
| 022300 | 672-105A Level Nozzle @ 0 deg. | UT | X | | | X | | | X | | | Examination to be performed once each inspection period | each |
| | | | | | | | | | | | | Mock-Up | |
| 022400 | 672-105B Level Nozzle @ 180 deg. | UT | X | | | X | | | X | | | Examination to be performed once each inspection period | each |
| | | | | | | | | | | | | Mock-Up | |
| 022500 | 672-105C Level Nozzle @ 195 deg. | UT | X | | | X | | | X | | | Examination to be performed once each inspection period. | each |
| | | | | | | | | | | | | Mock-Up | |
| 022600 | 672-105D Level Nozzle @ 345 deg. | UT | X | | | X | | | X | | | Examination to be performed once each inspection period. | each |
| | | | | | | | | | | | | Mock-Up | |

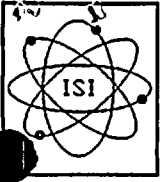
Notes: 1. This Table identifies the schedule of examinations for the Current Second Inservice Inspection Interval only. The 3rd. reexamination will be incorporated within the Third Inservice Inspection Interval during the program update as required by 10 CFR 50.55a (b).

Figure 3-1



| REFERENCE DRAWINGS | NOTES | CALIBRATION BLOCKS AND MATERIAL |  FLORIDA POWER & LIGHT ST. LUCIE UNIT 2 | | |
|---|-------|---|---|----------------|--|
| E-71372-651-001 REV. 3 E-71372-661-002 REV. 0 E-71372-671-003 REV. 5 E-71372-671-005 REV. 2 E-71372-676-001 REV. 1 E-71372-684-001 REV. 1 2998-18708 REV. 0 | | 30-HEATERS, SB167-A600 7-NOZZLES 4-STEAM SPACE, SB166-A690 3-WATER SPACE, SB166-A600 UT-4A, UT-6, UT-17 | TITLE: PRESSURIZER | | |
| | | DATE: 04/25/94 DLS | ZONE: 5 | | |
| | | ISI SKETCH | DRAWING NO: 02-005-B | REVISION: 3 | |





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END OF
DOCUMENT

