INSERVICE TESTING PLAN

REVISION 11

SAN ONOFRE NUCLEAR GENERATING STATION

UNIT 2

SOUTHERN CALIFORNIA EDISON COMPANY

DECEMBER 1985

SUMMARY
San Onofre Unit 2 ISI Program

Inservice inspection (ISI) of Class 2, and Class 3 nuclear components in Unit 2 of the San Onofre Nuclear Generating Station (SONGS-2) will be performed in accordance with the requirements of Section XI of the ASME Boiler and Pressure Vessel Code, Rules for Inservice Inspection of Nuclear Power Plant Components, hereinafter referred to as the Code.

This inspection and testing program describes the areas to be examined, examination categories, examination methods, extent and schedules to be followed during the 1st ten-year inspection interval together with operational testing requirements. The first 120-month inspection interval began with the start of commercial operation* on August 18, 1983 and will be completed on August 18, 1993.

This document is a summary of the SONGS-2 ISI program. It is being submitted to the Nuclear Regulatory Commission for approval in accordance with the requirements of 10 CFR 50.55a (g) (5) (iii). This submittal also provides information in response to specific concerns in Section III.5 of Standard Review Plan (SRP) 5.2.4, SRP 3.9.6, FSAR questions 121.3, 121.8, and 121.17, and as outlined in Appendix A to FSAR question section 121.

* The Commercial Operation Date is as defined by Federal Power Commission regulations, 18 CFR 101, Chapter 1, paragraph 9.D.

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APPENDICES

SONGS-2 ISI PROGRAM SUMMARY

1.0 OBJECTIVE

The objective of this document is to describe the Inservice Inspection (ISI) and Testing program to be followed at the San Onofre Nuclear Generating Station - Unit No. 2 (SONGS-2).

Beginning with the anticipated commercial operation date of August 1982, all plant fluid systems which are important to safety will be examined and tested according to the 120-month schedule outlined in this program. Examinations and tests will be in strict accordance with Section XI, Division 1, of the ASME Boiler and Pressure Vessel Code, except as noted in Section 6.0 of this report.

Specifically, this submittal describes the following aspects of the SONGS-2 ISI program:

- scope
- applicable requirements
- areas to be examined and tested
- exemptions
- exclusions
- related plant technical specifications
- summary of items requiring NRC approval.

Section 2.0 describes the scope of the SONGS-2 ISI program.

Section 3.0 summarizes applicable Codes, Regulatory Guides, Federal Regulations, and Plant Technical Specifications to be followed in the SONGS-2 ISI program.

System and component areas to be examined and tested are described in Section 4. The methods, extent, and frequencies of examinations and tests are also described in this Section.

Code-allowed exemptions for examination of Class 1 and 2 components are summarized in Section 5.0. Alternate examinations are described also.

1.0 OBJECTIVE (continued)

Exclusions, exceptions, and appropriate relief requests are provided in Section 6.0 in those cases in which strict compliance with Code requirements is not practical.

Plant Technical Specifications implement various aspects of the SONGS-2 ISI program. A summary of applicable technical specifications is provided in Section 7.0 for information.

A summary of items requiring NRC approval is provided in Section 8.0.

The first 120-month inspection interval began on August 18, 1983, the Unit 2 commercial operation date.

2.0 SCOPE

The SONGS-2 ISI program includes all examinations and tests required by Section XI of the ASME Code for pressure retaining components in Class 1, 2, and 3 systems. Other periodic examinations, not detailed in the Plant Technical Specifications but required to assure the integrity of plant fluid systems, are included in the scope of the ISI program.

Pressure boundary examinations which are covered in detail in the Plant Technical Specifications, will not be considered a part of the ISI program.

2.1 Items Included:

2.1.1 Inspections - Section XI, Division 1, of the ASME Code describes inspections, including non-destructive examinations, to be followed in the Plant ISI program. Code examinations which are covered in the technical specifications are not included in the pressure boundary examinations of the ISI program. See item 2.2.9.

2.1.2 Pump Testing - Inservice testing of pumps is included in accordance with subsection IWP of the 1977 Edition of the Code, Summer 1979 Addenda. Testing of safety-related Class 1, 2, and 3 pumps which are powered by an emergency power source is covered by the program.

2.1.3 Valve Testing - Inservice testing of valves is included in the ISI program. Subsection IWV will be followed for valves using the 1977 Edition of the Code through Summer 1979 Addenda.

2.0 SCOPE (continued)

2.1.4 Reactor Coolant Pump Flywheel Inspection - Examinations required by position C.4.b of Regulatory Guide 1.14 are included in the scope of the ISI program.

2.1.5 Augmented Inservice Inspections - Examinations of welds in critical areas of high energy piping systems are included in the ISI program as required by 10 CFR 50.55a, (g)(6)(iii).

2.1.6 Special Tests and Inspections - Certain tests and inspections may be instituted on a periodic basis at the discretion of the plant staff to satisfy concerns raised from operating experience reports, IE Notices, inspection findings, or other reasons. NRC approval will not be obtained to initiate or terminate such inspections and tests except as specifically required by the Commission.

2.2 Items Not Included

2.2.1 Containment Tendon Surveillance - NRC Regulatory Guide 1.35 and Technical Specification 3/4.6.1 describe the surveillance program to be followed to assure the performance of the containment vessel post-tensioning system.

2.2.2 Integrated Leak Rate Testing (ILRT) - Containment pressure testing (Type A tests) requirements are described in Appendix J to 10 CFR 50 and are further delineated in Technical Specification 3/4.6.1.

2.2.3 Local Leak Rate Testing (LLRT) - Containment penetration tests (Type B and C tests) will be in accordance with Appendix J requirements, and applicable technical specification requirements. Type B tests include containment penetrations which utilize resilient double seals such as hatches and electrical penetration assemblies. Type C tests include leakage tests of all piping penetration isolation valves.

2.2.4 Reactor Vessel Material Surveillance is not included in the scope of the ISI program. NRC Regulatory Guide 1.65 and Appendix G and H of 10 CFR 50 describe material surveillance tests to be performed in accordance with the methods of ASTM E-185 or E-399.

2.0 SCOPE (continued)

2.2.5 Electrical Equipment and Instrument and Control System Tests are not included in the scope of the ISI program.

2.2.6 Routine Preventative Maintenance Inspections and Periodic Surveillance tests to assure the operating condition of plant systems are not included in the scope of the ISI program.

2.2.7 Containment Sump Inspection requirements are described in NRC Regulatory Guide 1.82, and Technical Specification 3/4.5.2.d.2.

2.2.8 Snubber Testing - Technical Specification 3/4.7.6 provides detailed requirements for testing of support snubbers in accordance with the recommendations of Draft Regulatory Guide Task SC 708-4 dated 2/81. Snubber testing is not included in the ISI program since the technical specification requirements meet or exceed the requirements of subsection IWF-5000 of the Code.

2.2.9 Steam Generator Tubing Inspection - As delineated in 10 CFR 50.55a (b)(2)(iii), "the inservice inspection program for steam generator tubing shall be governed by the requirements in the technical specifications." Technical Specification 3/4.4.4 implements the requirements of Regulatory Guide 1.83.

3.0 APPLICABLE REQUIREMENTS

The SONGS-2 ISI program is governed by 10 CFR 50.55a (b)(2) which delineates applicable Editions and Addenda to ASME Section XI to be used.

3.1 ASME Section XI Code Editions and Addenda

3.1.1 Class 1 Systems

The 1977 Edition of Section XI and all Addenda through Summer 1979 will be followed for the examination of Class 1 components and equipment. Inspection Program B will be followed for the initial inspection interval.

3.1.2 Class 2 Systems:

The 1977 Edition of Section XI and all Addenda through Summer 1979, will be followed except as follows:

3.0 APPLICABLE REQUIREMENTS (continued)

In accordance with 10 CFR 50.55a (b)(2)(iv), the extent of examination of components in Residual Heat Removal Systems, Emergency Core Cooling Systems, and Containment Spray Systems will be in accordance with the 1974 Edition of the Code with Addenda through Summer 1975. This will include the following systems:

High Pressure Safety Injection System

Low Pressure Safety Injection System

Containment Spray System

3.1.3 Evaluation of Results and Acceptance Standards will be in accordance with Articles IWA-3000, IWB-3000, and IWF-3000 of the 1977 Edition at the Code including all Addenda through Summer 1979 for all Class 1, 2, and 3 components.

Later Editions and Addenda to the Code will be considered for use in the application of the subject Code Articles. The commission will be notified accordingly of subsequent changes to upgrade the ISI program resulting from decisions on the adoption of later versions of the Code. Such notification will be provided as part of the submittal of the Owner's Data Report for the ISI to the Commission.

3.1.4 Repairs will be in accordance with Article IWA-4000 of the 1977 Edition of the Code including Addenda through Summer 1979 for all Class 1, 2, and 3 system components.

3.1.5 Replacements, modifications, additions, or alternations, will be in accordance with Article IWA-7000 of the 1977 Edition of the Code including Addenda through Summer 1979 for all Class 1, 2, and 3 systems.

3.0 APPLICABLE REQUIREMENTS (continued)

3.1.6 Class 1, 2, and 3 Pumps and Valves will be tested in accordance with the 1977 Edition of the Code including all Addenda through Summer 1979.

Pumps will be tested at least every 3 months in accordance with the requirements of Sub-Article IWP-3400 of the Winter 1979 Addenda to the Code.

3.2 Regulatory Guides

The following NRC Regulatory Guides will be adhered to in the SONGS-2 ISI program:

3.2.1 Reg Guide 1.14, RC Pump Flywheel Integrity, Rev. 1, 8/75 - See Technical Specification 3/4.4.9.

3.2.2 Reg Guide 1.58, Qualification of Inspection, Examination, and Testing Personnel, Rev. 1, 9/80

3.2.3 Reg Guide 1.116, Quality Assurance Requirements for Installation, Inspection, and Testing of Mechanical Equipment and Systems, May 1977 Revision

3.2.4 Reg Guide 1.147, Code Case Acceptability, February 1981

3.2.5 Guide 1.150, Reactor Vessel Inservice Inspection, June 1981.

3.3 Code of Federal Regulations

The SONGS-2 ISI program meets all the requirements of 10 CFR 50.55a, subparagraphs (b) and (g) in effect in September 1981. This includes the requirements of subparagraph (g)(6)(iii) regarding augmented inservice inspection.

3.4 Plant Technical Specifications

See Section 7.0.

4.0 ISI PROGRAM DESCRIPTION

4.1 General

The Scope of the SONGS-2 ISI program will be generally similar to the Preservice Examination Program which was completed in late 1981. This program is in accordance with the 77/S79 version of the Code except that the extent of examination for Class 2 ECCS will be in accordance with XI-74/S75. Exceptions to Code requirements are listed in Section 6.

Since the Preservice Examination was performed entirely in accordance with the requirements of the 74/S75 version of the Code, a full volumetric examination will be used inservice in lieu of the partial volumetric-plus-surface examination described in the 77/S79 Code. In addition, surface preparation of carbon steel piping for surface examination could result in unnecessary personnel exposure in the case of reactor coolant system welds.

4.2 Vessel, Piping, and Support Examinations

Appendix A is a tabulation by applicable Code categories of Class 1 and Class 2 areas to be examined. Summarized by systems and portions thereof, are area quantities, methods, extent and frequencies (schedules) for these examinations during the first 10-year interval to be followed for Inspection Program B of the Code.

The program is divided into areas of interest called zones. These zones were established for the preservice examination. Each zone is depicted on a drawing which locates all the welds and other examination areas for components of the zone. Each weld or other area of interest has been given a unique designation number. Plan and examination data sheets accompany each zone drawing and provide all the information necessary for qualified examiners to perform the various required examinations. This includes the program drawing number, method of examination, and a brief summary of the examination requirements.

A description of the program for each major component category follows:

4.0 ISI PROGRAM DESCRIPTION (continued)

Reactor Pressure Vessel

The longitudinal seam welds, the upper shell to middle shell circumferential weld, the shell side of the flange to shell weld, the nozzle to shell welds, the nozzle inner radii, the lower shell to bottom head circumferential weld, and the bottom head welds will be examined from the inside (ID) surface, using remote equipment. The flange to upper shell circumferential weld will be examined with remote equipment from the upper flange surface. The closure studs and nuts will be examined manually. The snubber lugs, and core stop lugs will be examined visually using television equipment mounted on remote equipment.

Reactor Pressure Vessel Closure Head

All ultrasonic examinations are expected to be performed manually. The flange weld will be done from the ID and the OD, and the dome weld from the ID. The accessible portions of the longitudinal (peel segment) welds will be done from both the OD and the ID. The instrument nozzle welds will be done from the ID only. CEDM nozzle housing and extension welds have also been included in this program.

Steam Generators

All examinations on both the primary and secondary sides are expected to be performed manually. Areas include tube sheet welds, primary head meridional welds, nozzle welds and the support weld.

Pressurizer

All examinations will be done manually. Areas include the girth and longitudinal welds as well as the support weld and the nozzle inner radii.

Primary Piping

The areas to be examined include all circumferential and longitudinal welds as well as all nozzle-to-pipe, and nozzle safe-end welds. A listing of Class 1 systems is provided in Table 1 in Appendix A.

Austenitic Materials

Inservice volumetric examination of welds in pump casings and valve bodies constructed of cast austenitic stainless steel material (including integral attachment welds) is not scheduled. Examination using ultrasonic methods will not be performed. Examinations may be scheduled at a later date if an acceptable examination method is identified which will provide meaningful results.

4.0 ISI PROGRAM DESCRIPTION (continued)

Class 2 Piping

The rules governing the examination of Class 2 Piping Welds do not require the examination of every weld in Category C-F of the 77/S79 version of the Code. Isometric Zone Drawings and associated Program Plan and Examination Data Sheets identify all possible welds in a given zone that could be examined. This makes it possible to substitute alternative welds for those initially chosen for examination should access to a given weld be subsequently restricted by physical obstruction or high radiation levels. Welds have been chosen in accordance with the criteria set down in Sub-Article IWC-2400 and Table IWC-2500-1 of the Code and may be replaced with other welds should access considerations limit the examiner's ability to examine those initially chosen. Additional welds chosen for examination to satisfy requirements for Augmented Inservice Inspection are identified as such in Appendix D and by the Zone Drawings and Examination Data Sheets. A listing of Class 2 piping systems is provided in Table 2 in Appendix A.

Class 3 Systems

Table 3 in Appendix A identifies Class 3 systems which will be tested in accordance with the requirements of Subsection IWD of the Code. Class 3 system components will be examined visually during system pressure tests conducted in accordance with Article IWD-5000 at the frequencies specified by Table IWD-2500-1.

System Pressure Tests

System Pressure Tests include leakage tests and hydrostatic testing of Class 1, 2, and 3 systems. These tests will be performed as indicated in Article IWA-5000, Table IWA-5210-1.

System leakage tests will be performed as prescribed in Paragraphs IWB-5221, IWC-5221, and IWD-5221 and -5222 for Class 1, 2 and 3 pressure retaining components, respectively. These tests will be performed at each refueling or once during each inspection period, as specified in Table IWB-2500-1 (Category B-P), Table IWC-2500-1 (Category C-H), and Table IWD-2500-1 unless more frequent Leakage tests are required by the Plant Technical Specifications.

System hydrostatic tests will be performed at or near the end of the 10-year inspection interval in accordance with Paragraphs IWB-5222, IWC-5222, and IWD-5223 and Tables IWB-2500-1, IWC-2500-1, and IWD-2500-1 for Class 1, 2 and 3 systems.

4.0 ISI PROGRAM DESCRIPTION (continued)

4.3 Pump Testing

There are thirty pumps in eleven systems to be tested. Table 1 of Appendix B specifies each pump subject to the inservice testing requirements of Section XI. Each inservice test shall include the measurement and observation of all quantities listed in Table 1 except bearing temperatures. Bearing temperatures will be measured during at least one inservice test each year. The observed test values will be compared against reference values per Sub-sub-Articles IWP-3110 and IWP-3210.

Each pump will be tested nominally at the frequency specified under the column "Test Frequency" in Table 1. The frequency of testing is stated in Sub-Article IWP-3400 with the exception that testing will take place quarterly rather than monthly (see pump relief request #4).

Each system of pumps will be tested by separate procedures. These procedures establish the test path; control the testing progression; re-establish pre-test conditions, with an independant verification.

4.4 Valve Testing

Valves to be tested include Class 1, 2 and 3 valves that are required to perform a specific function to shut down the reactor to a cold shutdown condition or are required to mitigate the consequences of an accident. Valves to be tested are divided into four categories per Sub-Article IWV-2200 of the Code. Valves to be tested are listed in Table 1 of Appendix C. Table 1 also specifies the extent of testing and frequency of tests (i.e. quarterly, cold shutdown,...). Self actuating valves (Category C) will be tested in accordance with Sub-Article IWV-3500 of the Code.

4.5 Reactor Coolant Pump Flywheel Inspection

Technical Specification 3/4.4.9 requires that each reactor coolant pump flywheel be examined in accordance with the requirements of position C.4.b of NRC Regulatory Guide 1.14, Rev. 1.

(1) Areas of high stress concentration (bore and keyway) will be ultrasonically-examined during each 3 1/3-year period.

(2) All exposed areas will receive a complete surface examination in addition to a full volumetric examination during each 10-year interval.

4.0 ISI PROGRAM DESCRIPTION (continued)

4.6 Augmented Inservice Inspection

Pursuant to the requirements of 10 CFR 50.55a (g)(6)(iii), Augmented Inservice Inspection will be performed in certain areas to provide added assurance of structural reliability. The following areas require augmented inservice examination:

High Energy Lines

"No break zones" in the Main Steam Lines and portions of other high energy piping which penetrate containment will receive 100% ultrasonic examination of all circumferential and longitudinal welds in the area between the first pipe whip restraint beyond inboard and outboard containment isolation valves. Piping which operates above 200°F or 275 psig is considered high energy piping.

Figures included in Appendix D define the augmented ISI boundaries for piping in the Main Steam, Main Feedwater, Auxiliary Feedwater and Steam Generator Blowdown systems.

In addition, certain welds at postulated breakpoints on the Main Steam line inside containment are subject to augmented ISI to provide an additional level of safety assurance such that effects of jet impingement do not require further protective measures as explained in FSAR Section 3.6A.2.4.3.

5.0 EXEMPTIONS

Portions of Class 1 and Class 2 systems are exempted from examination requirements in accordance with the provisions of Sub-sub-Articles IWB-1220 (Class 1) and IWC-1220 (Class 2).

5.1 Class 1 Systems

Certain portions of Class 1 systems are exempted for the following reasons:

5.1.1 1-inch and smaller nominal pipe size

These include vent lines, pressure taps, pressurizer level instrument connections, minimum flow lines, coolant samples lines, and any drains which are 1 inch or smaller.

5.1.2 2-inch and smaller nominal pipe size reactor vessel head connections which are inaccessible due to proximity to control rod drive mechanisms.

These include Control Element Drive Mechanism (CEDM) nozzle welds which are inaccessible.

5.0 EXEMPTIONS (continued)

5.2 Class 2 Systems

Certain portions of Class 2 systems are exempted for the following reasons:

5.2.1 Flooded Systems

Systems or portions of systems that are not required to operate during reactor startup, power operation, hot standby, or reactor cooldown and which remain flooded at more than 80% of required system pressure are exempt from examination requirements.

Examples of these areas are:

Normally-filled standby tanks

Tank suction lines

These are low pressure, low temperature lines; also - see 5.2.2 and 5.2.3.

5.2.2 Low Pressure/Low Temperature Lines

Non-Shutdown Cooling System, non-ECCS lines are exempted if operating pressure does not exceed 275 psig and operating temperature will not exceed 200°F.

These include components, and their supports, for:

Pump suction piping

Sump suction piping

Containment spray headers

Containment penetration piping such as for service water, component cooling water, purification system piping, HVAC and containment purge system penetrations

5.0 EXEMPTIONS (continued)

5.2.3 4-inch nominal pipe size and smaller

This includes components and supports for:

Vents and drains

Purification letdown and charging lines

Containment spray nozzle headers

High pressure safety injection piping

3" Blowdown piping

Sample lines

Spray chemical addition piping

Reactor coolant pump seal controlled bleed off lines

A list of Class 2 lines exempted from the examination requirements of Sub-Article IWC-2500 under this category was provided to the Commission in response to FSAR question 121.33.

5.3 Alternate Examination Requirements

All exempted Class 1 and 2 components will be visually examined during a hydrostatic test to be performed at or near the end of the 10-year inspection interval in accordance with the requirements of Articles IWA-5000, IWB-5000, and IWC-5000, as applicable.

6.0 EXCLUSIONS AND EXCEPTIONS

Certain examination requirements are not in strict compliance with the applicable requirements of the Code. In some cases, full compliance is deemed impractical due to limitations of design, geometry, or materials of construction.

An exception to Code requirements is generally required for piping nozzle branch connections and for nozzle-to-vessel welds due to configurations which restrict access to welds from one side only. However, the requirements of the Code are met to the maximum extent practical in each case. Four (4) examination Categories associated with certain components necessitate an exception to the Code requirements. These are described in the following paragraphs, 6.1 through 6.5. Corresponding relief requests are provided in Appendix E.

6.0 EXCLUSIONS AND EXCEPTIONS (continued)

6.1 Category B-J, Reactor Coolant Piping Branch Nozzle Welds

Table IWB-2500 requirement:

Item B9.31 requires surface and volumetric examination of branch pipe connection welds in accordance with Figures IWB-2500-9, 10, and 11. Figure 11 (attached) depicts branch connection welds used for SONGS-2 reactor coolant piping connections. Figure IBW-2500-11, page 15, does not define examination volume, but specifies examination surface only (A-B).

Interpretation:

A surface examination should be performed over the area defined as A-B; the weld volume should be examined from point B on the surface to the root area of the weld as necessary to examine the volume of the weld, including the inner portion of the weld as defined by volume C-D-E-F of the Winter 1980 Addenda of the Code (also attached, page 16).

Exception:

Relief is requested to allow examination of the weld volume from the reactor coolant piping side only, since there is no direct ultrasonic examination path from the nozzle forging surface to the weld volume for the configuration shown.

6.2 Category B-D, Pressurizer and Steam Generator Nozzle Welds

Table IWB-2500 requirement:

Items B3.110 and B3.130 require volumetric examination of Pressurizer and Steam Generator nozzle-to-vessel welds and adjacent areas of (the) nozzle and vessel in accordance with Figure IWB-2500-7 (attached). Examination volume A-B-C-D-E is well-defined.

Exception:

Relief is requested to allow examination of the weld volume A-B-C-D-E-F-G-H-I as defined in Figure IWB-2500-7(a) of the Winter 1980 Addenda of the Code (also attached). Category Items B3.120 and B3.140 examinations of the nozzle inside radius section will include volume M-N-O-P as defined in attached Figure IWB-2500-7(a). The volumes defined in Figure IWB-2500-7(a) contain the high stress regions and heat-affected zones which are of concern for the long term operation of the components.

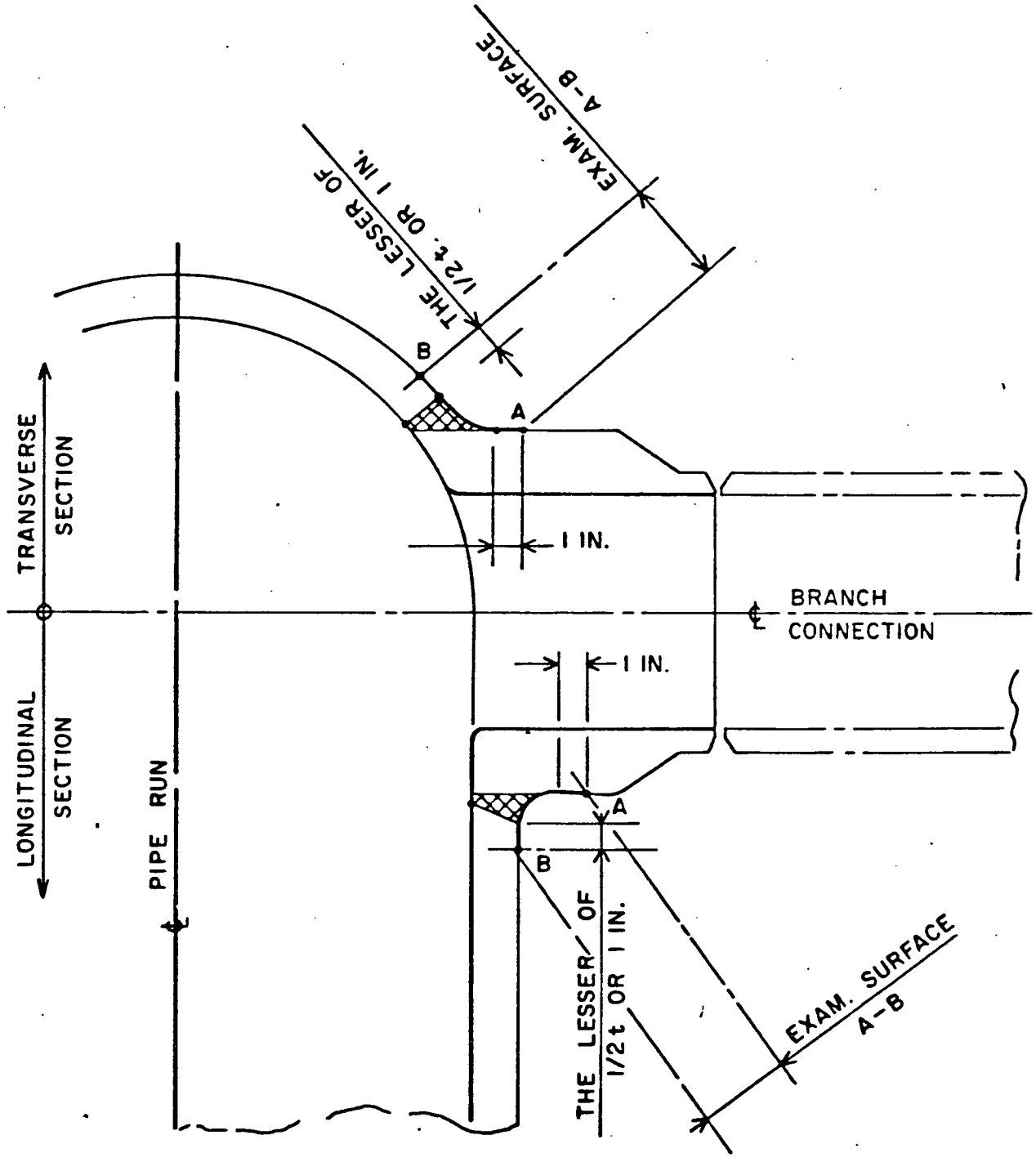
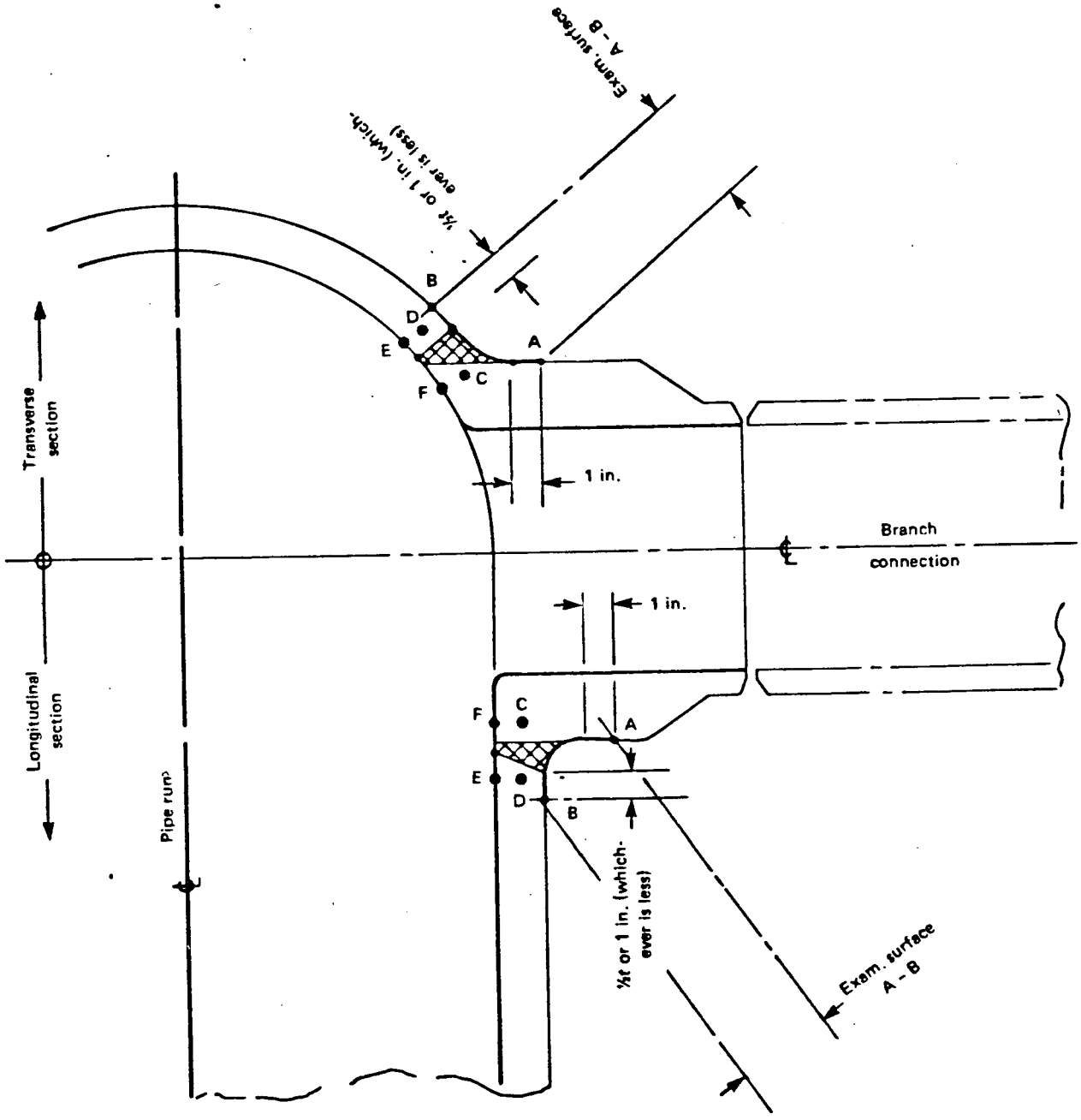
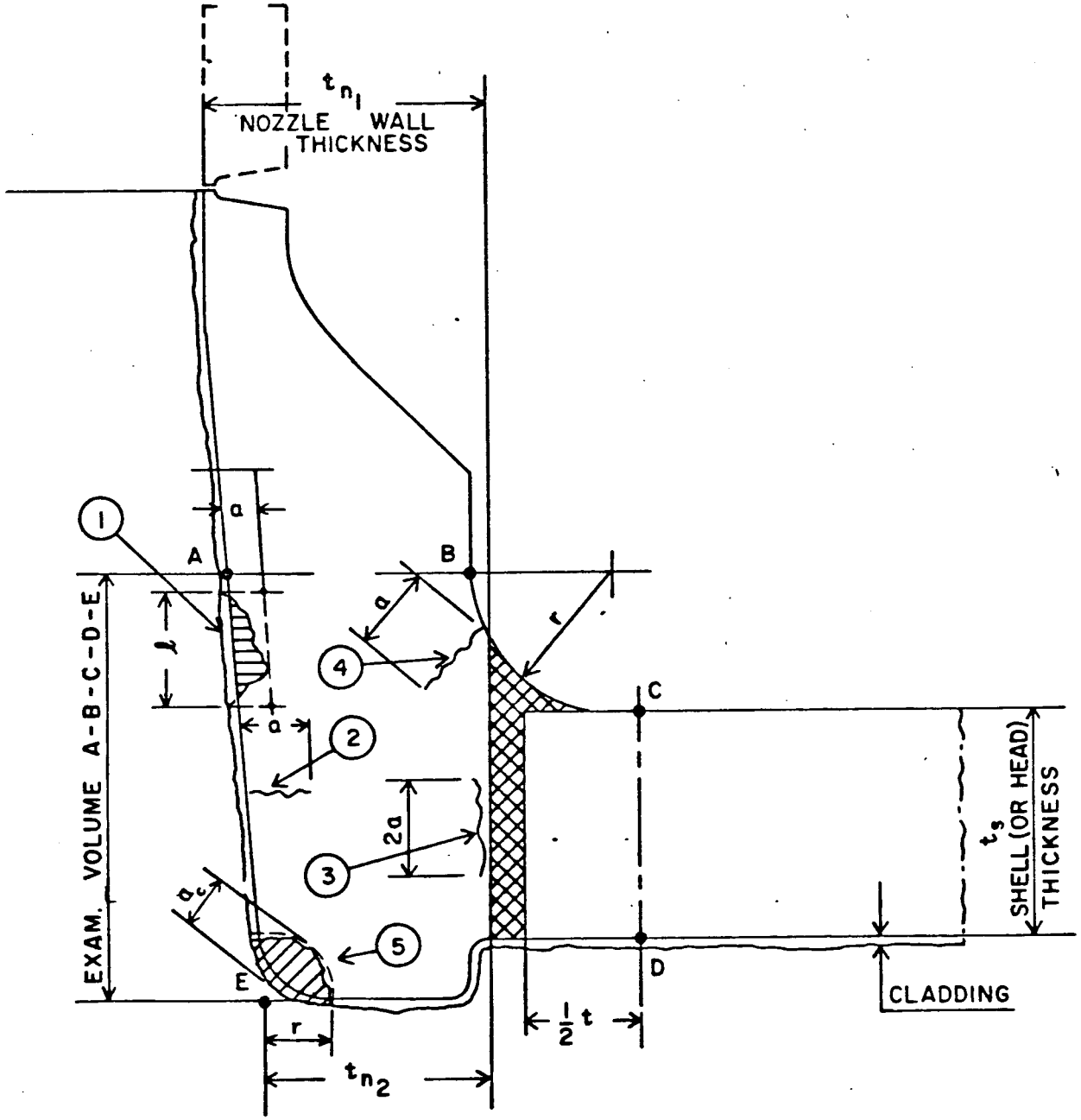


FIG. IWB-2500-11 PIPE BRANCH CONNECTION



NOTE: Examination volumes C - D - E - F are defined per Fig. IWB-2500-8.

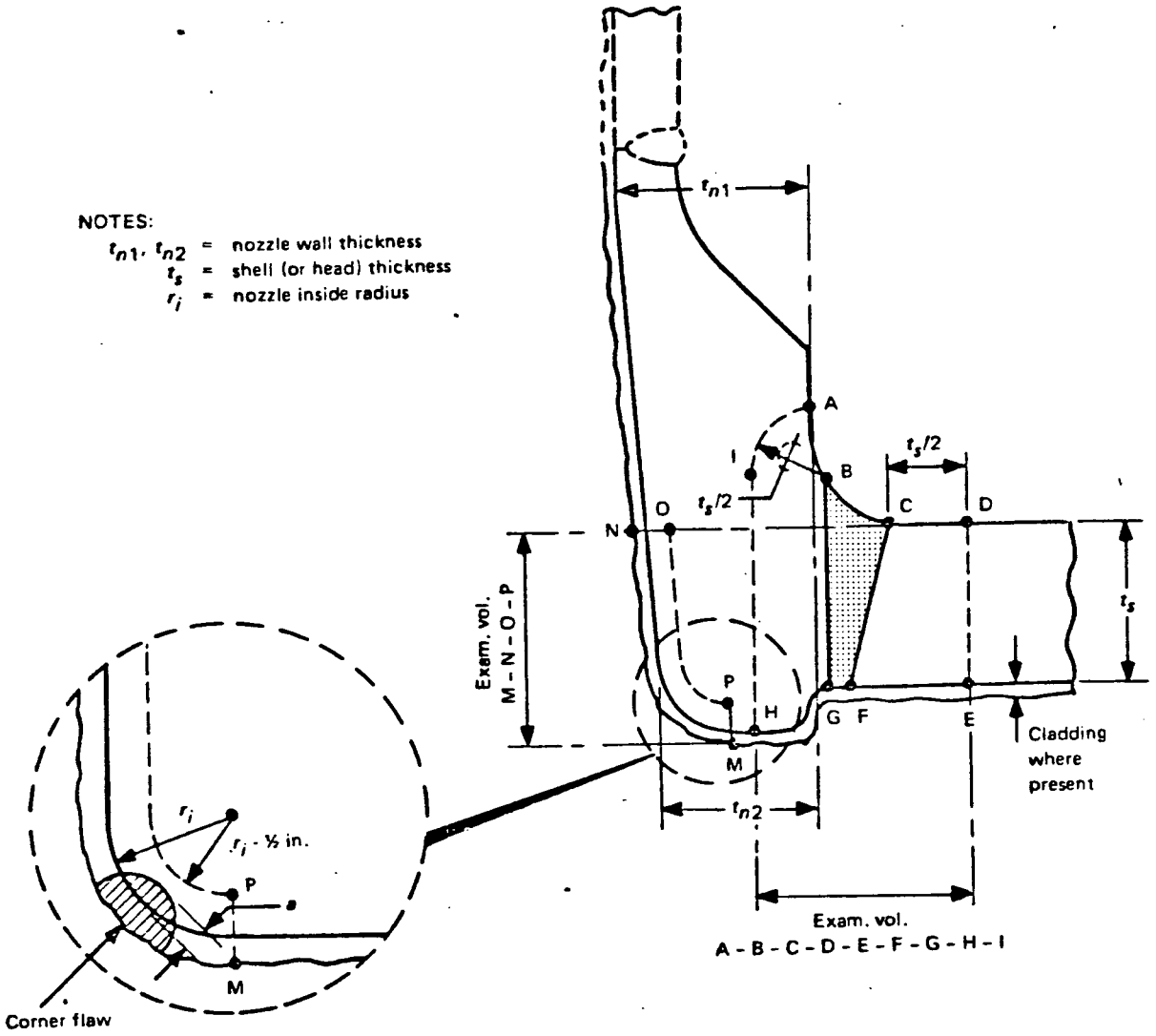
FIG. IWB-2500-11 PIPE BRANCH CONNECTION



NOTE: ALL FLAWS ARE EXAGGERATED IN SIZE AND SCALE

FIG. IWB-2500-7 NOZZLE-TO-SHELL OR HEAD WELD JOINTS
(Applies to Nozzles With or Without Internal Reinforcement)

NOTES:
t_{n1}, t_{n2} = nozzle wall thickness
t_s = shell (or head) thickness
r_i = nozzle inside radius



EXAMINATION REGION[1]	EXAMINATION VOLUME[2]
Shell (or head) adjoining region	C-D-E-F
Attachment weld region	B-C-F-G
Nozzle cylinder region	A-B-G-H-I
Nozzle inside corner region	M-N-O-P

NOTES:
(1) Examination regions are identified for the purpose of differentiating the acceptance standards in IWB-3512.
(2) Examination volumes may be determined either by direct measurements on the component or by measurements based on design drawings.

FIG. IWB-2500-7(a) NOZZLE IN SHELL OR HEAD
(Examination Zones in Barrel Type Nozzles Joined by Full Penetration Corner Welds)

6.0 EXCLUSIONS AND EXCEPTIONS (continued)

6.3 Category C-B, Heat Exchanger Nozzle Attachment Welds with Reinforcing Saddles

Table IWC-2500-1 requirement:

Item C2.10 requires a surface examination of nozzle-in-vessel welds 1/2 inch thick or less in accordance with Figure IWC-2520-3.

Item C2.20 requires a surface and volumetric examination of nozzle-in-vessel welds over 1/2 inch thick in accordance with Figure IWC-2520-4.

Figures IWC-2520-3 and IWC-2520-4 are attached. They do not show welds with reinforcing saddles.

Exception:

Relief is requested from the above requirements for nozzles with reinforcing saddles since the nozzle-to-vessel welds are not accessible for surface or volumetric examination. A surface examination of the fillet welds attaching the saddle-to-vessel and saddle-to-nozzle will be conducted as an alternate examination (see attached Figure 6.3-1).

6.4 Category C-B, Steam Generator Secondary Side Nozzle-to-Vessel Welds

Table IWC-2500 requirement:

See 6.3, above.

Exception:

Relief is requested to allow volumetric examination of Steam Generator Secondary Side nozzle-to-vessel welds from the shell side only, as shown in attached Figure IWC-2520-4. This examination will include volume C-D-E-F and as much of volume G-H as is practical. Preservice examination was conducted from the shell side only due to restricted access from the nozzle forging side as a result of weld and nozzle configuration.

6.0 EXCLUSIONS AND EXCEPTIONS (continued)

6.5 Category C-F, Longitudinal Welds in Piping

In accordance with the prescribed code applicability of Section 3.1, appropriate Class 2 pipe welds in Emergency Core Cooling Systems and Containment Heat Removal Systems shall be examined to the extent determined by the requirements of the 1974 Edition and Addenda through the Summer 1975 Addenda of ASME Section XI. Consistent with the intent on the ASME Code, it is planned to examine longitudinal welds in pipes and fittings where these welds intersect circumferential welds to be examined. Longitudinal welds will be examined over a length 2.5t, where t is the pressure boundary wall thickness.

In order to meet this expanded examination scope, longitudinal welds in pipes (which were not included in preservice volumetric or surface examinations) will be located, identified and examined during the first inspection interval.

Exception:

Relief is requested to examine longitudinal welds for a length of 2.5t at applicable circumferential welds in pipes and fittings.

6.6 Category C-D, Bolting

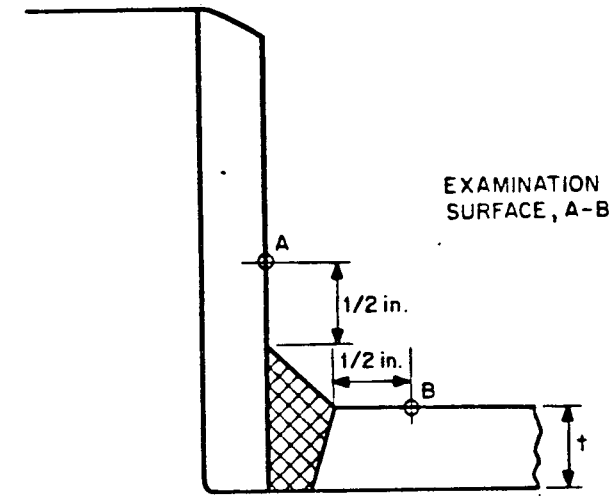
Table IWC-2520, Category C-D of the 1974 Edition throuh summer 1975 addenda of section XI is entitled "Pressure Retaining Bolting Exceeding 1" in Diameter". However, the 1976 Summer Addenda to Section XI changed that title to read "Pressure Retaining Bolting Exceeding 2" in Diameter". Because all bolting 2" and smaller will not be subject to volumetric examination inservice, relief is therefore requested to allow volumetric examination of bolting greater than 2" only.

6.7 Relief Requests

Pursuant to the requirements of 10 CFR 50.55a (g)(5)(iii) and (iv), relief requests have been prepared to support determinations that certain Code requirements are impractical. Appendix E contains these relief requests.

Most of these relief requests were previously submitted and approved as part of the Preservice Examination Program and the Preservice Pump and Valve Testing Program. Some changes have been made to previously submitted relief requests to reflect current Code requirements and to incorporate recent design changes. Relief request no. B-6 was previously submitted in response to FSAR question 121.37 regarding recording levels for ultrasonic indications. Relief request nos. B-7, C-3 and C-4 have been added as part of this submittal.

NOZZLE SIZES OVER 4 in. NOM. PIPE SIZE
VESSEL THICKNESS - t = 1/2 in. OR LESS



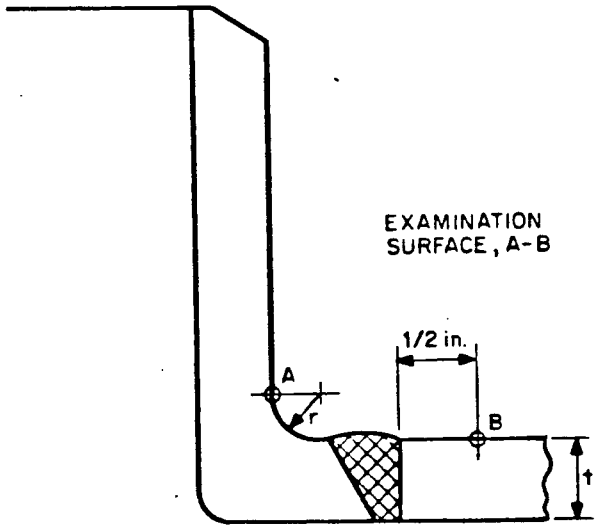


FIG. IWC-2520-3 NOZZLE-TO-VESSEL WELDS

NOZZLE SIZES - OVER 4 in. NOM. PIPE SIZE
VESSEL THICKNESS OVER 1/2 in.

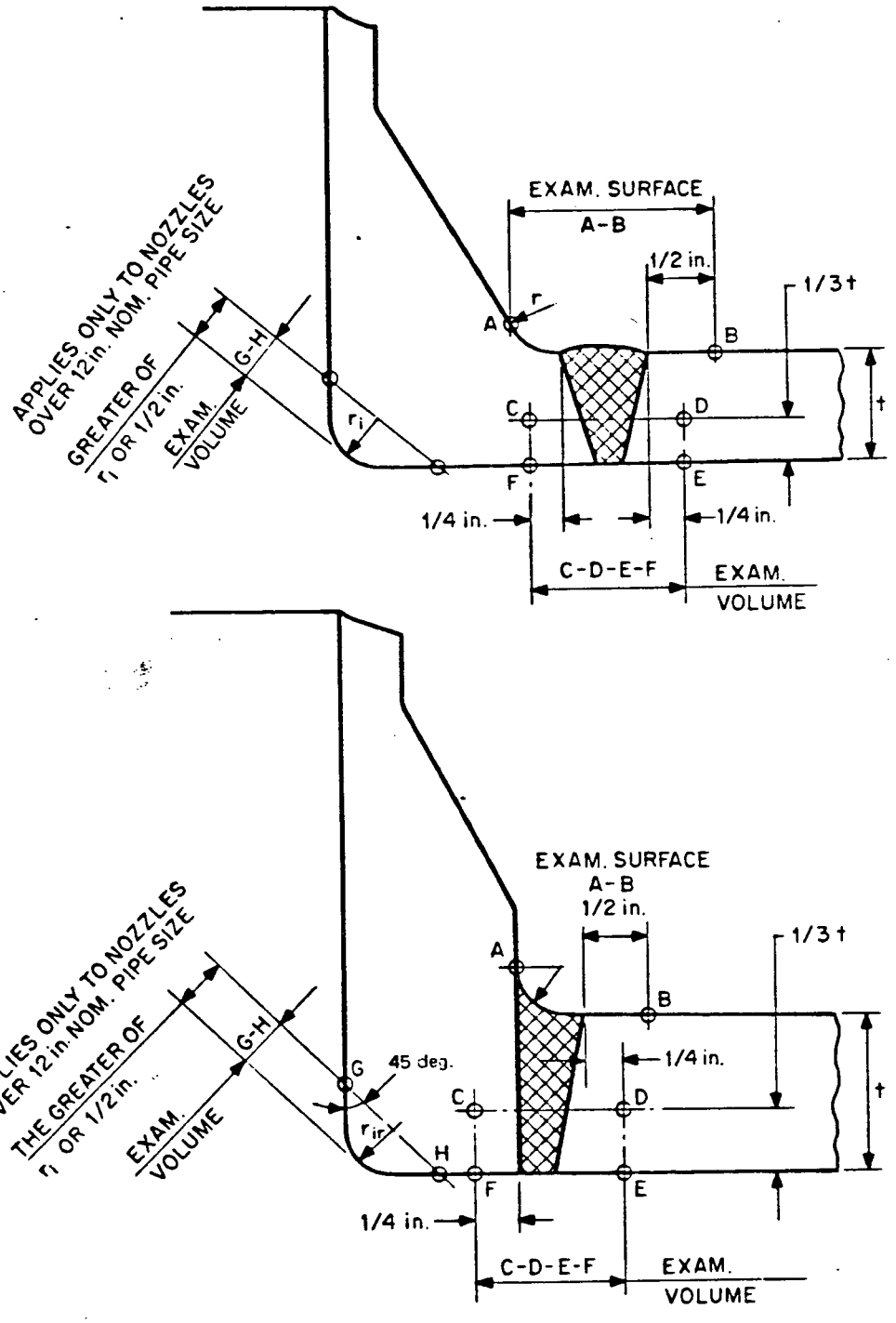


FIG. IWC-2520-4 NOZZLE-TO-VESSEL WELDS

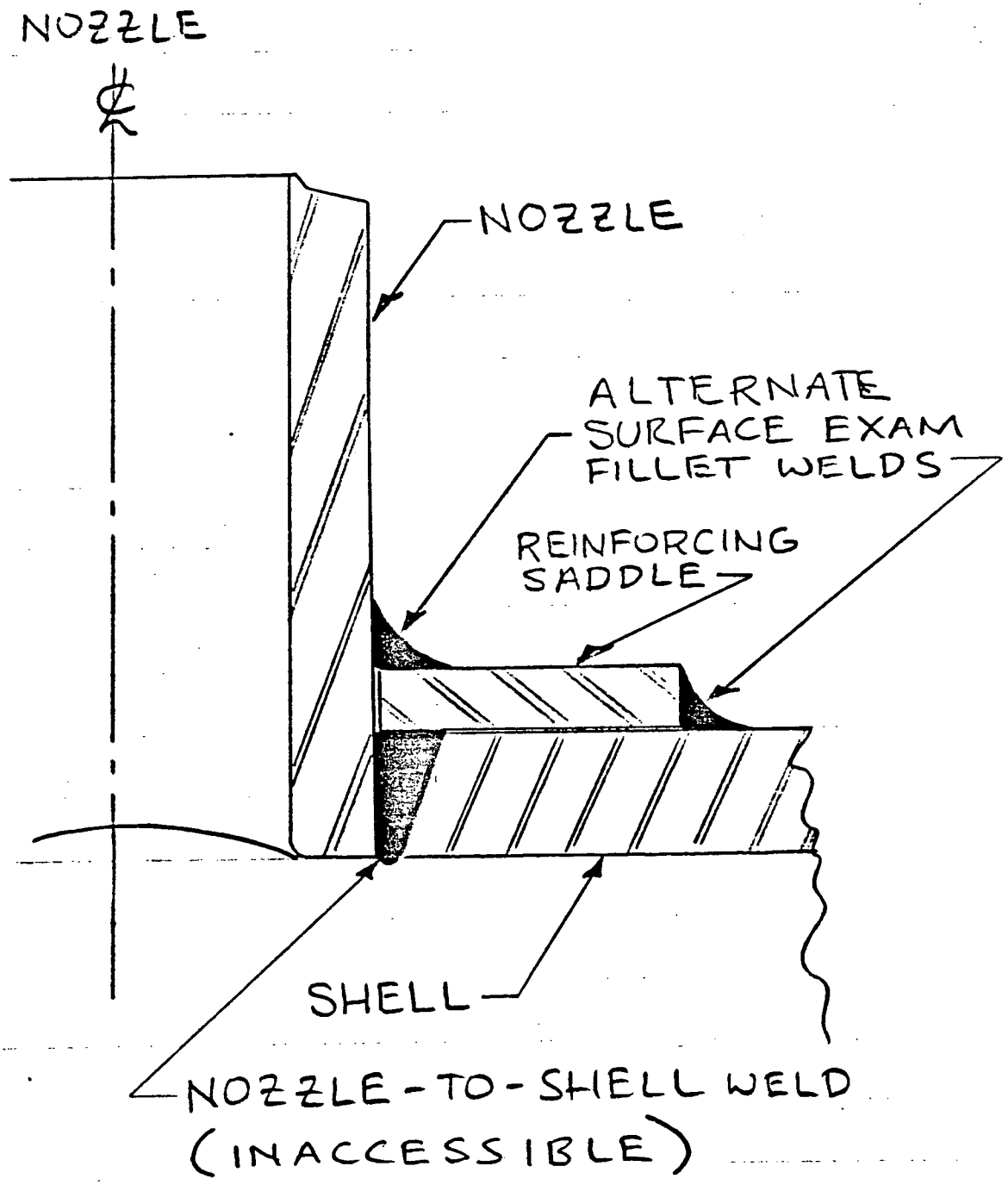

NOZZLE
NOZZLE
ALTERNATE
SURFACE EXAM
FILLET WELDS
REINFORCING
SADDLE
SHELL
NOZZLE-TO-SHELL WELD
(INACCESSIBLE)

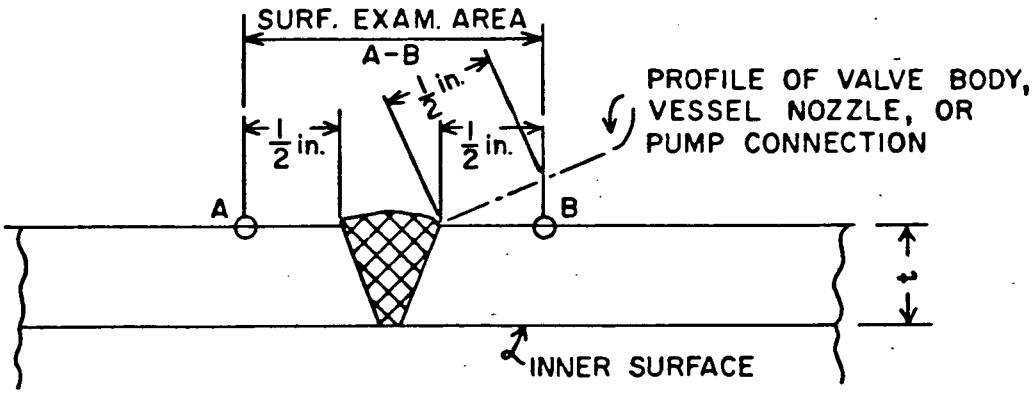
FIGURE 6.3-1

6.0 EXCLUSIONS AND EXCEPTIONS (continued)

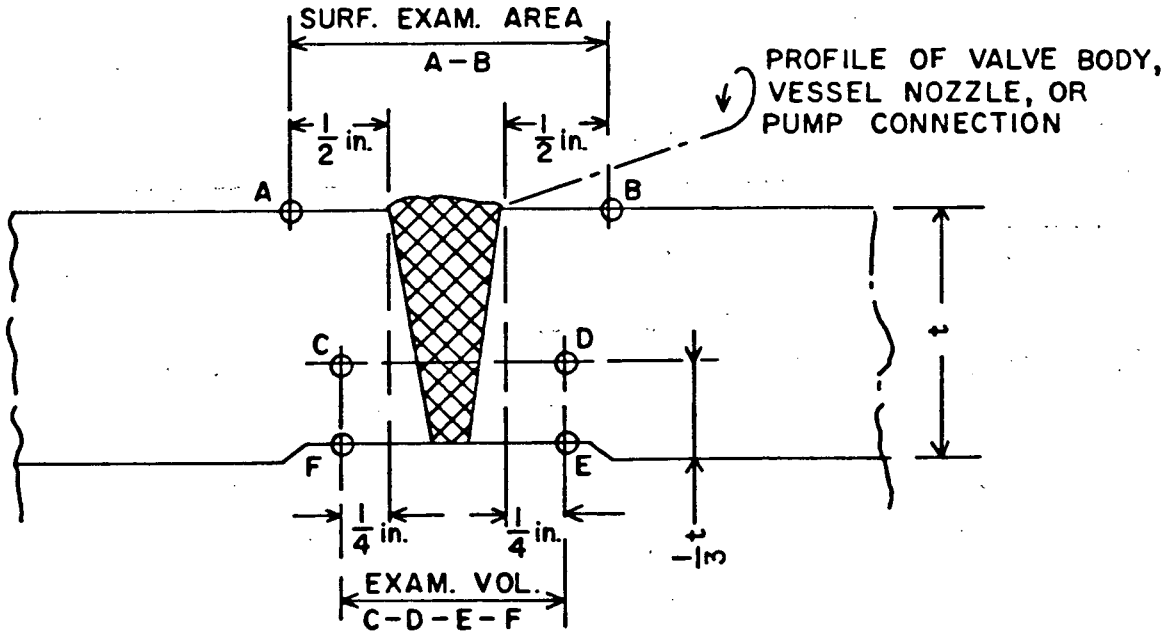
6.8 Relief Requests Based on ALARA Requirements

No radiation considerations have been identified at the present time which would preclude examinations. The plant has been designed to ensure compliance with Code examination requirements. Remote inspection devices were employed during preservice examinations in areas where high radiation levels are anticipated for subsequent inservice examinations.

An exception to the 77/S79 Code requirement for volumetric-plus-surface examination of certain welds in high radiation areas is required. In certain cases, the Code requires a partial volumetric examination and surface examination as shown in attached Figures IWB-2500-8 and IWB-2520-7 for Class 1 and 2 piping, respectively. Extensive surface preparation will be required to perform a liquid penetrant examination of high temperature carbon steel piping. Therefore, in high radiation areas, a full volumetric examination will be substituted for the partial volumetric-plus-surface examination specified. A full volumetric (ultrasonic) preservice examination was performed in accordance with the requirements of the 1974 Edition of the Code. See also Section 4.1.

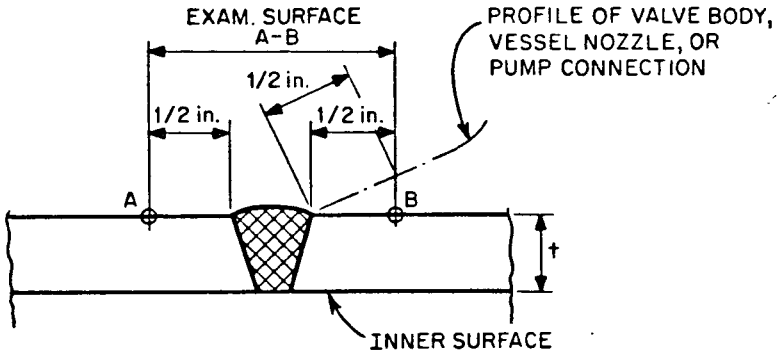


NOM. PIPE SIZE LESS THAN 4 IN.

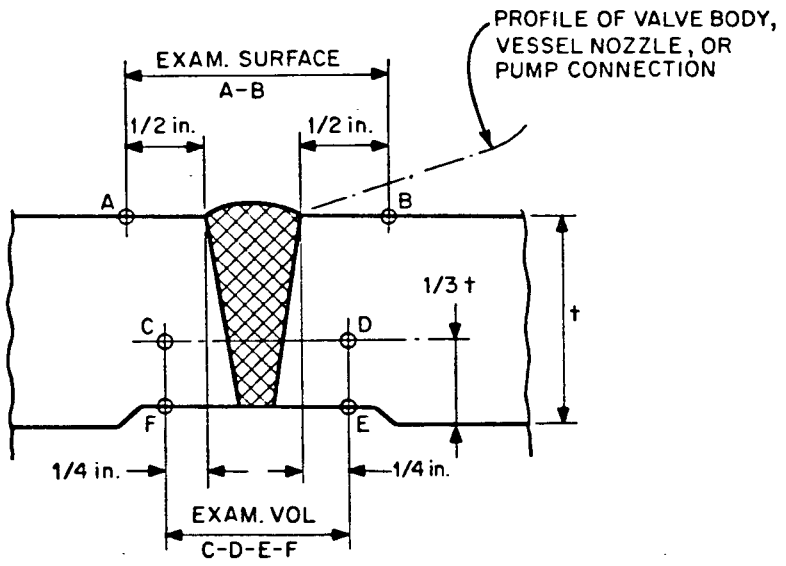


NOM. PIPE SIZE 4 IN. AND GREATER

FIG. IWB-2500-8 SIMILAR AND DISSIMILAR METAL WELDS IN PIPING



NOM. PIPE WALL THICKNESS, t = 1/2 in. OR LESS



NOM. PIPE WALL THICKNESS t OVER 1/2 in.

FIG. IWC-2520-7 WELDS IN PIPING

7.0 PLANT TECHNICAL SPECIFICATIONS

Inservice Inspection program requirements are defined by the Plant Technical Specifications. This is consistent with the approach by which other periodic plant surveillance inspection and test requirements are delineated.

In addition, the plant technical specifications define uniform requirements for the following areas which pertain to inservice inspection:

Surveillance Procedures

Surveillance Programs

Reporting Requirements

Record Retention

Radiation Protection

7.1 ISI-Related Technical Specifications

Appendix F provides a listing of technical specifications applicable to the SONGS-2 ISI program.

In some cases, technical specifications are listed in areas which are not included in the scope of the ISI program as explained in Section 2.2. These are listed in Appendix F for information only since they fully describe the surveillance requirements for particular areas of concern.

In other cases (e.g. steam generator tubing), code requirements and Reg. Guide requirements are not addressed in the inservice inspection program, but are governed by the requirements in the technical specifications in accordance with 10 CFR 50.55a.

Applicability

Section 4.0.5 of the plant technical specifications delineates overall ISI program requirements. The text of Section 4.0.5 follows:

4.0.5 Surveillance Requirements for inservice inspection and testing of ASME Code Class 1, 2 and 3 components shall be applicable as follows:

a. Inservice inspection of ASME Code Class 1, 2 and 3 components and inservice testing ASME of Code Class 1, 2 and 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50, paragraph 50.55a(g)(6)(i).

7.0 PLANT TECHNICAL SPECIFICATIONS (continued)

7.1 ISI-Related Technical Specifications (continued)

b. Surveillance intervals specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda for the inservice inspection and testing activities required by the ASME Boiler and Pressure Vessel Code and applicable Addenda shall be applicable as follows in these Technical Specifications:

ASME Boiler and Pressure Vessel Code and applicable Addenda terminology for inservice inspection and testing activities	Required frequencies for performing inservice inspection and testing activities
Weekly	At least once per 7 days
Monthly	At least once per 31 days
Quarterly or every 3 months	At lease once per 92 days
Semiannually or every 6 months	At least once per 184 days
Yearly or annually	At least once per 366 days

c. The provisions of Specification 4.0.2* are applicable to the above required frequencies for performing inservice inspection and testing activities.

d. Performance of the above inservice inspection and testing activities shall be in addition to other specified Surveillance Requirements.

e. Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any Technical Specification.

* Section 4.0.2 establishes that each Surveillance Requirement shall be performed within the specified time interval with:

a. A maximum allowable extension not to exceed 25% of the surveillance interval, and

b. The combined time interval for any 3 consecutive surveillance intervals not to exceed 3.25 times the specified surveillance interval.

7.0 PLANT TECHNICAL SPECIFICATIONS (continued)

7.2 Bases for the above technical specification are as follows:

4.0.5 - This specification ensures that inservice inspection of ASME Code Class 1, 2 and 3 components and inservice testing of ASME Code Class 1, 2 and 3 pumps and valves will be performed in accordance with a periodically updated version of Section XI of the ASME Boiler and Pressure Vessel Code and Addenda as required by 10 CFR 50.55a. Relief from any of the above requirements will be obtained in writing from the Commission and is not a part of these Technical Specifications.

This specification includes a clarification of the frequencies for performing the inservice inspection and testing activities required by Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda. This clarification is provided to ensure consistency in surveillance intervals throughout these Technical Specifications and to remove any ambiguities relative to the frequencies for performing the required inservice inspection and testing activities.

Under the terms of this specification, the more restrictive requirements of the Technical Specifications take precedence over the ASME Boiler and Pressure Vessel Code and applicable Addenda.

8.0 SUMMARY OF ITEMS REQUIRING NRC APPROVAL

Following is a summary of items being submitted in response to the requirements of 10 CFR 50 and in response to FSAR questions from NRC.

8.1 Code Editions and Addenda

NRC is requested to approve the use of Section XI Code Editions and Addenda for implementation of SONGS-2 as described in Section 3.1 of this submittal. This program is applicable for the 1st 10-year interval, beginning with Commercial Operation, according to Inspection Program B as defined in Sub-Article IWA-2400 and Sub-sub-article IWA-2420.

8.2 Examination Schedule

NRC is requested to approve the component examination schedules described in the following Appendices:

Appendix A - Pressure Boundary Component Areas

The scheduled quantity of welds and other areas to be examined each (3 1/3-year) examination period is listed in Appendix A. Quantities are listed for each Category of Tables IWB-2500-1, IWC-2500-1 or IWC-2520-1 as described in of Section III.5 of Standard Review Plan 5.2.4.

Appendix B - Pumps

As indicated in Appendix B, safety-related pumps will be tested every 3 months in accordance with Sub-Article IWP-3400 of Section XI-77/W79 as allowed by the proposed rule change to 10 CFR 50.55a (b)(2).

Appendix C - Valves

As indicated in Appendix C, Category A and B Valves and category C check valves will be exercised at least once every three (3) months as specified in Sub-Articles IWV-3411 and IWV-3521 of the Code. Category C safety and relief valves will be tested at the end of time periods defined in the testing schedule of Table IWV-3510-1 of the Code. There are no Category D explosive-actuated valves at San Onofre - Unit 2. Rupture disks are not of a testable design. 1

Reactor Coolant Pump Flywheels

Pump Flywheels will be inspected at the frequencies specified in Reg. Guide 1.14, position C.4.b (1) and C.4.b (2).

8.0 SUMMARY OF ITEMS REQUIRING NRC APPROVAL (continued)

8.3 Evaluation of Results and Acceptance Standards will be in accordance with the appropriate Edition and Addenda to the Code as explained in Section 3.1.4. NRC concurrence is requested.

8.4 Repairs

Repairs will be made in accordance with Article IWA-4000 of the 1977 Edition through Summer 1979 Addenda of the Code. See Section 3.1.5. NRC concurrence is requested.

8.5 Modifications or Alterations

Modifications or alterations will be made in accordance with the requirements of Sub-sub-Article IWA-7210 of the Code. See Section 3.1.6. NRC concurrence is requested.

8.6 Additions

As defined in the scope of Sub-sub-Article IWA-7110 of the Code, component additions shall be in accordance with Sub-sub-Article IWA-7210. See Section 3.1.6. The addition of complete systems will be in accordance with the rules of ASME Section III as allowed by 10 CFR 50.55a (b)(1), (c)(2) - Vessels, (d)(2) - Piping, (e)(2) - Pumps, (f)(2) - Valves, and (g)(4)(iv) - ISI. NRC concurrence is requested.

8.7 Exemptions

NRC approval of the Code-allowed exemptions in Section 5.0 is requested.

8.8 Exceptions

NRC approval is requested to perform certain examinations as described in Section 6.0 due to limitations of design, geometry, materials of construction or lack of code requirements.

APPENDIX A

ISI EXAMINATION AREA SUMMARY

TABLE 1

SYSTEMS CONTAINING CLASS 1 COMPONENTS SUBJECT TO INSERVICE INSPECTION

- Reactor Coolant System — No. 1201
- Safety Injection System — No. 1204
- Containment Spray System — No. 1206
- Chemical and Volume Control System — No. 1208

Examination requirements for the applicable components of above systems are delineated in the tables below. For examination convenience, the subject systems have been broken down into portions, lines, or components with examination area quantities identified for the first ten (10) year inspection interval. The listing of the Class 1 areas to be inspected is as follows:

Reactor Pressure Vessel
Reactor Vessel Closure Head
Steam Generator 1 Primary Side
Steam Generator 2 Primary Side
Pressurizer
Loop 1 Reactor Coolant Piping Hot Leg
Loop 2 Reactor Coolant Piping Hot Leg
Loop 1A Reactor Coolant Piping Steam Generator to Pump
Loop 1A Reactor Coolant Piping Pump to Reactor Vessel
Loop 1B Reactor Coolant Piping Steam Generator to Pump
Loop 1B Reactor Coolant Piping Pump to Reactor Vessel
Loop 2A Reactor Coolant Piping Steam Generator to Pump
Loop 2A Reactor Coolant Piping Pump to Reactor Vessel
Loop 2B Reactor Coolant Piping Steam Generator to Pump
Loop 2B Reactor Coolant Piping Pump to Reactor Vessel
Pressurizer Surge Line
Loop 1A Safety Injection Piping Inside Containment
Loop 1B Safety Injection Piping Inside Containment
Loop 2A Safety Injection Piping Inside Containment
Loop 2B Safety Injection Piping Inside Containment
Shutdown Cooling Piping Inside Containment

TABLE 1

SYSTEMS CONTAINING CLASS 1 COMPONENTS
SUBJECT TO INSERVICE INSPECTION (Continued)

Loop 1B Spray Line
Loop 1A Spray Line
Combined Pressurizer Spray
Pressurizer Safety Valve Piping
Pressurizer Auxiliary Spray
Charging Line to Loop 2A
Letdown Line
Loop 1B Primary Drain
Loop 1 Hot Leg Drain
Loop 1A Primary Drain
Charging Line to Loop 1A
Loop 2A Primary Drain
Loop 2B Primary Drain
Reactor Coolant Pump 1A
Reactor Coolant Pump 1B
Reactor Coolant Pump 2A
Reactor Coolant Pump 2B
Safety Injection Line from 2 High Pressure Header
Sampling Line from Loop 1 Hot Leg
Sampling Line from Loop 2 Hot Leg

TABLE 2

SYSTEMS CONTAINING CLASS 2 COMPONENTS SUBJECT TO INSERVICE INSPECTION

• Reactor Coolant System	No. 1201
• Component Cooling Water System*	No. 1203
• Safety Injection System	No. 1204
• Containment Spray System	No. 1206
• Chemical and Volume Control System*	No. 1208
• Nuclear Plant Sampling System*	No. 1212
• Fuel Pool Cooling System*	No. 1219
• Main Steam System	No. 1301
• Auxiliary Feedwater System	No. 1305
• Auxiliary Boiler System*	No. 1312
• Containment HV & AC System*	No. 1501
• Waste Gas System*	No. 1902
• Fire Protection System*	No. 2301
• Compressed Air System*	No. 2417
• Auxiliary Gas System (N_2)*	No. 2418

Examination requirements for applicable components of the above systems are delineated in the tables below. For examination convenience, the subject systems have been broken down into portions, lines, or components with examination area quantities identified for the first ten (10) year inspection interval. The listing of Class 2 areas to be inspected is as follows:

*Containment penetration piping only.

TABLE 2

(continued)

Steam Generator 1 Secondary Side
Steam Generator 2 Secondary Side
Main Feedwater Piping to Steam Generator 1
Main Feedwater Piping to Steam Generator 2
Auxiliary Feedwater Piping to Steam Generator 1
Auxiliary Feedwater Piping to Steam Generator 2
Blowdown Piping from Steam Generator 1
Blowdown Piping from Steam Generator 2
Main Steam from Steam Generator 1 Inside Containment
Main Steam from Steam Generator 2 Inside Containment
Main Steam from Steam Generator 1 Outside Containment
Main Steam from Steam Generator 2 Outside Containment
Safety Injection Tank 1 and Associated Piping
Safety Injection Tank 2 and Associated Piping
Safety Injection Tank 3 and Associated Piping
Safety Injection Tank 4 and Associated Piping
Safety Injection Tank Fill Line from Refueling Water Tank
Shutdown Cooling Line Inside Containment
Containment Spray Suction Lines from Containment Sump
Shutdown Cooling Line to LPSI Pump Suction
LPSI Pump 1 Suction Line
CS Pump 1 Suction Line
CS Pump 2 Suction Line
Safety Injection Suction Lines from Refueling Water Tanks
LPSI Pump 2 Suction Line
Combined Suction Lines HPSI Pumps
Combined Discharge Header HPSI Pumps
Safety Injection HP Header 1
Safety Injection HP Header 2
HPSI, LPSI AND CS to Refueling Water Tank and Sample System
LPSI Pump Discharge
LPSI Header
Shutdown Cooling Heat Exchanger 1 Inlet Lines
Shutdown Cooling Heat Exchanger 2 Inlet Lines
Combined Shutdown Cooling Heat Exchanger Discharge to LPSI Header
Shutdown Cooling Heat Exchanger 1 to CS
Shutdown Cooling Heat Exchanger 2 to CS
Spray Chem Storage System
Regenerative Heat Exchanger
Letdown Cooling Heat Exchanger
Letdown Delay Mechanism

TABLE 3

COMPONENTS CONTAINED IN CLASS 3 SYSTEMS SUBJECT TO INSERVICE INSPECTION

Components of Class 3 systems, and portions of systems, as listed below are subject to inservice inspection:

• Component Cooling Water System	No. 1203
• Chemical and Volume Control System	No. 1208
• Fuel Pool Cooling System	No. 1219
• Auxiliary Feedwater System	No. 1305
• Auxiliary Bldg. Emer. Chilled Water System	No. 1503
• Waste Gas System	No. 1902
• Diesel Generator System	No. 2420
• Diesel Fuel Storage System	No. 2421

SONGS UNIT 2 TEN (10) YEAR INSERVICE INSPECTION PROGRAM SUMMARY

CATEG ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	AMOUNT & EXTENT		PERIOD 1	2	3	COMMENTS
	REACTOR COOLANT SYSTEM REACTOR VESSEL AND HEAD									
B-A	PRESSURE RETAINING WELDS									
B1.10	SHELL WELDS			UT						
B1.11		CIRC	2/2		ALL	100%			2	
B1.12		LONG	9/9		ALL	100%			9	
B1.20	HEAD WELDS			UT						
B1.21		CIRC	4/4		ALL	100%		2	2	Accessible length
B1.22		MERID	16/16		ALL	100%	4	2	10	Accessible Length
B1.30	SHELL-TO-FLANGE WELD	CIRC	1/1	UT	ALL	100%	1		1	Exam from flange face in period 1, remaining exam from vessel wall in period 3
B1.40	HEAD TO FLANGE WELD	CIRC	1/1	UT	ALL	100%	1			
B1.50	REPAIR WELDS									
B1.51	BELTLINE REGION			UT	ALL	100%				
B-D	NOZZLE FULL PENETRATION WELDS									
B3.90	NOZZLE-TO-VESSEL WELD	CIRC	6/6	UT	All	100%	2		4	
B3.100	NOZZLE INSIDE RADIUS SECTION		6/6	UT	All	100%	2		4	
B-E	PARTIAL PENETRATION WELDS									
B4.13	CONTROL ROD DRIVE NOZZLE		91/24	VIS	25%		8	8	8	External Surfaces
B4.14	INSTRUMENTATION NOZZLE		10/3	VIS	25%		1	1	1	External Surfaces

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	AMOUNT & EXTENT		PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM - CONT'D REACTOR VESSEL AND HEAD - CONT'D									
B-G-1	PRESSURE RETAINING BOLTING>2in									
B6.10	CLOSURE HEAD NUTS	-	54/54	PT	ALL	100%1	18	18	18	
B6.20	CLOSURE STUDS, IN PLACE	-	52/52	UT	ALL	100%	17	17	18	
B6.30	CLOSURE STUDS, WHEN REMOVED	-	2/2	UT&PT	ALL	100%	1	1		
B6.40	THREADS IN FLANGE	-	54/54	UT	ALL	100%	18	18	18	
B6.50	CLOSURE WASHERS	-	54/54	VIS	ALL	100%	18	18	18	
B-N-1	VESSEL INTERIOR									
B13.10	VESSEL INTERIOR (INCL. LUGS AND MATERIAL SURVEILLANCE SPECIMEN HOLDERS).	ALL	30/30	VIS	accessible areas				30	At first refueling and following refuelings at approx. three year intervals
B-N-3	REMOVABLE CORE SUPPORT STRUCTURES									
B13.30	CORE SUPPORT STRUCTURES CORE BARREL UPPER GUIDE STRUCTURES	ALL	2/2	VIS	Accessible Welds And Accessible Surfaces			1	1	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT		PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM - CONT'D REACTOR VESSEL AND HEAD - CONT'D									
B-O	PRESSURE RETAINING WELDS IN CONTROL ROD HOUSINGS									
B14.10	WELDS IN CONTROL ROD HOUSINGS		364/40	UT or PT	10% CRD HOUSING PERIPHERAL	100%	12	12	16	
B-J	PRESSURE RETAINING WELDS									
B9.10	PIPE ≥ 4 IN.									
B9.11	(HOT LEGS, COLD LEGS AND HEAD INSTRUM NOZZLES)	CIRC	16/16	UT	ALL	100%	5	3	8	
B9.12		LONG	0	UT		One Pipe Dia. Long Up to 12 In.				
B9.20	PIPE < 4 IN.									
B9.21		CIRC	0	PT		100%				
B9.22		LONG	0	PT		One Pipe Dia. Long Up to 12 In.				
B-P	ALL PRESSURE RETAINING COMPONENTS									
B15.10	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB - 5221		ALL	ALL	ALL	
B15.11	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB - 5222				ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	AMOUNT & EXTENT		PERIOD 1	2	3	COMMENTS
	REACTOR COOLANT SYSTEM - CONT'D									
	STEAM GENERATORS		2					1	1	
B-B	PRESSURE RETAINING WELDS (PRIMARY SIDE)									
B2.30	HEADWELDS			UT						
B2.31		CIRC	8/8		ALL	100%		4	4	
B2.32		MERID	10/10		ALL	100%		5	5	
B2.40	TUBE SHEET-TO-HEAD WELD			UT						
		CIRC	4/4		ALL	100%		2	2	
		LONG	8/8		ALL	100%		4	4	
B-D	NOZZLE FULL PENETRATION WELDS (PRIMARY SIDE)									
B3.130	NOZZLE-TO-VESSEL WELD	CIRC	6/6	UT	ALL	100%		3	3	
B3.140	NOZZLE INSIDE RADIUS SECTION		6/6	UT	ALL	100%		3	3	
B-G-2	PRESSURE RETAINING BOLTING ≤2 IN									
B7.30	STUDS AND NUTS		80/80	VIS	ALL			40	40	
B-H	INTEGRAL ATTACHMENTS									
B8.30	INTEGRALLY WELDED ATTACHMENTS		2/1	UT		100%		1		
B-J	PRESSURE RETAINING WELDS									
B9.10	PIPE ≥ 4 IN.									
B9.11		CIRC	6/6	UT	ALL	100%		3	3	
B9.12		LONG	0	UT		100%				

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM - CONT'D								
	STEAM GENERATORS - CONT'D								
B-P	ALL PRESSURE RETAINING COMPONENTS								
B15.30	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB - 5221	ALL	ALL	ALL	
B15.31	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB - 5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM - (CONT'D)								
	PRESSURIZER								
B-B	PRESSURE RETAINING WELDS								
B2.10	SHELL-TO-HEAD WELDS			UT					
B2.11		CIRC	2/2		ALL	100%	1		1	
B2.12		LONG	4/4		ALL	12 in long	2		2	
	SHELL WELD	CIRC	1/1	UT	ALL	100%		1		
B-D	NOZZLE FULL PENETRATION WELDS								
B3.110	NOZZLE-TO-VESSEL WELDS	CIRC	5/5	UT	ALL	100%	1		4	
B3.120	NOZZLE INSIDE RADIUS SECTION		5/5	UT	ALL	100%	1		4	
B-E	PARTIAL PENETRATION WELDS								
B4.20	HEATER PENETRATION WELDS		30/8	VIS	25%		8			External Surfaces
B-F	DISSIMILAR METAL WELDS								
B5.20	NOZZLE-TO-SAFE END WELDS		5/5	UT and PT	ALL	100%	1		4	
B-G-2	PRESSURE RETAINING BOLTING ≤ 2 IN								
B7.30	STUDS AND NUTS		20/20	VIS	ALL				20	
B-H	INTEGRAL ATTACHMENTS								
B8.20	INTEGRALLY WELDED ATTACHMENTS		1/1	UT	ALL	100%	1			

CATEGORY / ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM - (CONT'D)								
	PRESSURIZER - (CONT'D)								
B-J	PRESSURE RETAINING WELDS								
B9.10	PIPE ≥ 4 IN.								
B9.11		CIRC	1/1	UT	ALL 100%			1	
B9.12		LONG	0	UT	100%				
B-P	ALL PRESSURE RETAINING COMPONENTS								
B15.20	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB - 5221	ALL	ALL	ALL	
B15.21	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB - 5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD		AMOUNT & EXTENT	PERIOD 1	2	3	COMMENTS
	REACTOR COOLANT SYSTEM - (CONT'D)									
	REACTOR COOLANT PUMPS		4						1	
B-G-1	PRESSURE RETAINING BOLTING >2IN									
B6.180	STUDS, IN PLACE		64/16	UT		100%			16	
B6.190	STUDS, WHEN REMOVED			UT and PT		100%				
B6.200	NUTS		64/16	VIS					16	
	STUD HOLE THREADS		64/16	VIS					16	
	LIGAMENT AREAS		64/16	VIS					16	
B-K-1	INTEGRAL ATTACHMENTS									
B10.20	INTEGRALLY WELDED ATTACHMENTS		4/4	PT		100%		2	2	
B-L-1	PRESSURE RETAINING WELDS									
B12.10	PUMP CASING WELDS		8/2	See Comment*		100%				One(1) pump in group
B-L-2	CASINGS									
B12.20	PUMP CASING INTERIOR		4/1	VIS		100%			1	One(1) pump in group
IWF	SUPPORT ASSEMBLIES									
F-A	PLATE & SHELL TYPE SUPPORTS		)							
F-B	LINEAR TYPE SUPPORTS		)36/9	VIS					9	
F-C	COMPONENT STANDARD SUPPORTS		)							
RG 1.14	MOTOR FLYWHEELS									
	FLYWHEEL BORE AND KEYWAY		4/4	UT	ALL	100%	4	4	4	
	FLYWHEEL (ENTIRE SURFACE)		4/4	PT or MT	ALL	100%	1	2	1	
	(ENTIRE VOLUME)		4/4	UT	ALL	100%	1	2	1	

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CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM - (CONT'D)								
	REACTOR COOLANT PUMPS - (CONT'D)								
B-P	ALL PRESSURE RETAINING COMPONENTS								
B15.60	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB - 5221	ALL	ALL	ALL	
B15.61	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB - 5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM - (CONT'D)								
	PIPING								
	HOTLEGS		2			2			
B-J	PRESSURE RETAINING WELDS								
B9.10	PIPE ≥ 4 IN								
B9.11		CIRC	6/4	UT See Comment	100%	4			Applicable joints covering 25% RC sys. piping circ. welds, including non-applicable welds where necessary to meet this minimum quantity. Examine long. welds intersecting applicable circ. welds to be examined.
B9.12		LONG	12/8	UT	One Pipe Dia. long Up to 12 in.	8			
B9.20	PIPE <4IN								
B9.21		CIRC	0	PT	100%				
B9.22		LONG	0	PT	One pipe Dia. long Up to 12 in.				
B9.30	BRANCH PIPE CONNECTION								
B9.31	PIPE BRANCH >2 IN		3/3	UT See Comment	100%	3			
B9.32	PIPE BRANCH ≤ 2 IN		0	PT	100%				
B9.40	SOCKET WELDS		0	PT	100%				
B-F	DISSIMILAR METALS WELDS								
B5.50	SAFE END WELDS		2/2	UT ALL	100%	2			≥ 4 in. pipe
			1/1	PT ALL	100%	1			< 4 in. pipe
B-P	ALL PRESSURE RETAINING COMPONENTS								
B15.50	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB-5221	ALL	ALL	ALL	
B15.51	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM								
	PIPING - (CONT'D)								
	COLDLEGS		8				4	4	
B-J	PRESSURE RETAINING WELDS								
B9.10	PIPE ≥ 4 IN								
B9.11		CIRC	36/16	UT See Comment	100%		8	8	Applicable joints covering 25% RC sys. piping circ. welds, including non-applicable welds where necessary to meet this minimum quantity. Examine long. welds intersecting applicable to be examined.
B9.12		LONG	72/32	UT	One pipe Dia. long Up to 12 In.		16	16	
B9.20	PIPE <4 IN								
B9.21		CIRC	0	PT	100%				
B9.22		LONG	0	PT	One Pipe Dia. long Up to 12 In.				
B9.30	BRANCH PIPE CONNECTION								
B9.31	PIPE BRANCH >2 IN		12/12	UT See Comment	100%		6	6	
B9.32	PIPE BRANCH ≤ 2 IN		0	PT	100%				
B9.40	SOCKET WELDS		0	PT	100%				
B-F	DISSIMILAR METALS WELDS								
B5.50	SAFE END WELDS		12/12	UT ALL	100%		6	6	≥ 4 in. pipe
			8/8	PT ALL	100%		5	5	< 4 in. pipe
B-P	ALL PRESSURE RETAINING COMPONENTS								
B15.50	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB-5221	ALL	ALL	ALL	
B15.51	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB-5222			ALL	

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CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT		PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM PIPING PRESSURIZER SURGE LINE									
B-J	PRESSURE RETAINING WELDS									
B9.10	PIPE ≥ 4 IN.									
B9.11		CIRC	14/4	UT	See Comment	100%	2	2		Applicable joints covering 25% R.C. sys. piping welds, including non-applicable circ. welds where necessary to meet this minimum quantity (Table IWB-2500-1, Note (1)). Examine long. welds intersecting circ. welds requiring examination.
B9.12		LONG	0	UT		One Pipe Dia. Long Up to 12 In.				
B9.20	PIPE < 4 IN.									
B9.21		CIRC	0	PT		100%				
B9.22		LONG	0	PT		One Pipe Dia. Long Up to 12 In.				
B9.30	BRANCH PIPE CONNECTION									
B9.31	PIPE BRANCH > 2 IN.		0	UT		100%				
B9.32	PIPE BRANCH ≤ 2 IN.		0	PT		100%				
B9.40	SOCKET WELDS		0	PT		100%				
B-K-1	INTEGRAL ATTACHMENTS									
B10.10	PIPING		4/4	PT	ALL	100%		4		
B10.20	PUMPS		0	UT or PT	ALL	100%				
B10.30	VALVES		0	UT or PT	ALL	100%				
IWF	SUPPORT ASSEMBLIES									
F-A	PLATE & SHELL TYPE SUPPORTS		)	VIS	ALL					
F-B	LINEAR TYPE SUPPORTS		)6/6	VIS	ALL			6		
F-C	COMPONENT STANDARD SUPPORTS		)	VIS	ALL					
B-P	ALL PRESSURE RETAINING COMPONENTS									
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB-5221		ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB-5222				ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM PIPING SAFETY INJECTION LOOP 1A								
B-J	PRESSURE RETAINING WELDS								
B9.10	PIPE ≥ 4 IN.								
B9.11		CIRC	41/9	UT	See Comment 100%	3	3	3	Applicable joints covering 25% R.C. sys. piping welds, including non-applicable circ. welds where necessary to meet this minimum quantity (Table IWB-2500-1, Note (1)). Examine long. welds intersecting circ. welds requiring examination.
B9.12		LONG	0	UT	One Pipe Dia. Long Up to 12 In.				
B9.20	PIPE < 4 IN.								
B9.21		CIRC	8/0	PT	See Comment 100%				
B9.22		LONG	0	PT	One Pipe Dia. Long Up to 12 In.				
B9.30	BRANCH PIPE CONNECTION								
B9.31	PIPE BRANCH > 2 IN.		0	UT	100%				
B9.32	PIPE BRANCH ≤ 2 IN.		0	PT	100%				
B9.40	SOCKET WELDS		0	PT	100%				
B-G-2	PRESSURE RETAINING BOLTING ≤ 2 IN								
B7.50	PIPING		0	VIS	ALL				
B7.60	PUMPS		0	VIS	ALL				
B7.70	VALVES		9 /9 sets/sets	VIS	ALL	2	3	4	
B-K-1	INTEGRAL ATTACHMENTS								
B10.10	PIPING		10/10	PT	ALL 100%	4	3	3	
B10.20	PUMPS		0	UT or PT	ALL 100%				
B10.30	VALVES		0	UT or PT	ALL 100%				

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	SAFETY INJECTION LOOP 1A - CONT'D								
IWF	SUPPORT ASSEMBLIES								
F-A	PLATE & SHELL TYPE SUPPORTS		)	VIS	ALL				
F-B	LINEAR TYPE SUPPORTS		)15/15	VIS	ALL	4	6	5	
F-C	COMPONENT STANDARD SUPPORTS		)	VIS	ALL				
B-M-1	PRESSURE RETAINING WELDS								
B12.30	VALVE BODY WELDS		1/1	See Comment*	100%				One (1) valve in each group
B-M-2	VALVE BODIES								
B12.40	VALVE BODIES >4 IN.		4/2	VIS	INTERNAL SURFACES			2	One (1) valve in each group
B-P	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB-5222			ALL	

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CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM PIPING SAFETY INJECTION LOOP 1B								
B-J	PRESSURE RETAINING WELDS								
B9.10	PIPE ≥ 4 IN.								
B9.11		CIRC	45/9	UT	See Comment	100%	3	3	3	Applicable joints covering 25% R.C. sys. piping welds, including non-applicable circ. welds where necessary to meet this minimum quantity (Table IWB-2500-1, Note (1)). Examine long. welds intersecting circ. welds requiring examination.
B9.12		LONG	0	UT		One Pipe Dia. Long Up to 12 In.			
B9.20	PIPE < 4 IN.								
B9.21		CIRC	4/0	PT	See Comment	100%			
B9.22		LONG	0	PT		One Pipe Dia. Long Up to 12 In.			
B9.30	BRANCH PIPE CONNECTION								
B9.31	PIPE BRANCH > 2 IN.		0	UT		100%			
B9.32	PIPE BRANCH ≤ 2 IN.		0	PT		100%			
B9.40	SOCKET WELDS		0	PT		100%			
B-G-2	PRESSURE RETAINING BOLTING ≤ 2 IN								
B7.50	PIPING		0	VIS	ALL				
B7.60	PUMPS		0	VIS	ALL				
B7.70	VALVES		10 /10 sets/sets	VIS	ALL		4	4	2	
B-K-1	INTEGRAL ATTACHMENTS								
B10.10	PIPING		10 /10	PT	ALL	100%	4	3	3	
B10.20	PUMPS		0	UT or PT	ALL	100%			
B10.30	VALVES		0	UT or PT	ALL	100%			

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	AMOUNT & EXTENT	PERIOD 1	2	3	COMMENTS
	SAFETY INJECTION LOOP 1B - CONT'D								
IWF	SUPPORT ASSEMBLIES								
F-A	PLATE & SHELL TYPE SUPPORTS		)	VIS	ALL				
F-B	LINEAR TYPE SUPPORTS		)12/12	VIS	ALL	4	4	4	
F-C	COMPONENT STANDARD SUPPORTS		)	VIS	ALL				
B-M-1	PRESSURE RETAINING WELDS								
B12.30	VALVE BODY WELDS		1/1	See Comment*	100%				One (1) valve in each group
B-M-2	VALVE BODIES								
B12.40	VALVE BODIES >4 IN.		4/2	VIS	INTERNAL SURFACES	1	1		One (1) valve in each group
B-P	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB-5222			ALL	

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CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM PIPING SAFETY INJECTION LOOP 2A								
B-J	PRESSURE RETAINING WELDS								
B9.10	PIPE ≥ 4 IN.								
B9.11		CIRC	63/23	UT	See Comment	100%	8	8	7	Applicable joints covering 25% R.C. sys. piping welds, including non-applicable circ. welds where necessary to meet this minimum quantity (Table IWB-2500-1, Note (1)). Examine long. welds intersecting circ. welds requiring examination.
B9.12		LONG	0	UT		One Pipe Dia. Long Up to 12 In.			
B9.20	PIPE < 4 IN.								
B9.21		CIRC	8/8	PT	See Comment	100%	3	3	2	
B9.22		LONG	0	PT		One Pipe Dia. Long Up to 12 In.			
B9.30	BRANCH PIPE CONNECTION								
B9.31	PIPE BRANCH > 2 IN.		0	UT		100%			
B9.32	PIPE BRANCH ≤ 2 IN.		0	PT		100%			
B9.40	SOCKET WELDS		0	PT		100%			
B-G-2	PRESSURE RETAINING BOLTING ≤ 2 IN								
B7.50	PIPING		0	VIS	ALL				
B7.60	PUMPS		0	VIS	ALL				
B7.70	VALVES		10 / 10 sets/sets	VIS	ALL		4	4	2	
B-K-1	INTEGRAL ATTACHMENTS								
B10.10	PIPING		21/21	PT	ALL	100%	7	7	7	
B10.20	PUMPS		0	UT or PT	ALL	100%			
B10.30	VALVES		0	UT or PT	ALL	100%			

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	SAFETY INJECTION LOOP 2A - CONT'D								
IWF	SUPPORT ASSEMBLIES								
F-A	PLATE & SHELL TYPE SUPPORTS		)	VIS	ALL				
F-B	LINEAR TYPE SUPPORTS		)26/26	VIS	ALL	9	9	8	
F-C	COMPONENT STANDARD SUPPORTS		)	VIS	ALL				
B-M-1	PRESSURE RETAINING WELDS								
B12.30	VALVE BODY WELDS		1/1	See Comment*	100%				One (1) valve in each group
B-M-2	VALVE BODIES								
B12.40	VALVE BODIES >4 IN.		4/2	VIS	INTERNAL SURFACES	1	1		One (1) valve in each group
B-P	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB-5222			ALL	

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CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM PIPING SAFETY INJECTION LOOP 2B								
B-J	PRESSURE RETAINING WELDS								
B9.10	PIPE ≥ 4 IN.								
B9.11		CIRC	50/9	UT	See Comment	100%	3	3	3	Applicable joints covering 25% R.C. sys. piping welds, including non-applicable circ. welds where necessary to meet this minimum quantity (Table IWB-2500-1, Note (1)). Examine long. welds intersecting circ. welds requiring examination.
B9.12		LONG	0	UT		One Pipe Dia. Long Up to 12 In.			
B9.20	PIPE < 4 IN.								
B9.21		CIRC	0/0	PT	See Comment	100%			
B9.22		LONG	0	PT		One Pipe Dia. Long Up to 12 In.			
B9.30	BRANCH PIPE CONNECTION								
B9.31	PIPE BRANCH > 2 IN.		0	UT		100%			
B9.32	PIPE BRANCH ≤ 2 IN.		0	PT		100%			
B9.40	SOCKET WELDS		0	PT		100%			
B-G-2	PRESSURE RETAINING BOLTING ≤ 2 IN								
B7.50	PIPING		0	VIS	ALL				
B7.60	PUMPS		0	VIS	ALL				
B7.70	VALVES		9 / 9 sets/sets	VIS	ALL		3	3	3	
B-K-1	INTEGRAL ATTACHMENTS								
B10.10	PIPING		15/15	PT	ALL	100%	5	5	5	
B10.20	PUMPS		0	UT or PT	ALL	100%			
B10.30	VALVES		0	UT or PT	ALL	100%			

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	SAFETY INJECTION LOOP 2B - CONT'D								
IWF	SUPPORT ASSEMBLIES								
F-A	PLATE & SHELL TYPE SUPPORTS		)	VIS	ALL				
F-B	LINEAR TYPE SUPPORTS		)18/18	VIS	ALL	6	6	6	
F-C	COMPONENT STANDARD SUPPORTS		)	VIS	ALL				
B-M-1	PRESSURE RETAINING WELDS								
B12.30	VALVE BODY WELDS		1/1	See Comment*	100%				One (1) valve in each group
B-M-2	VALVE BODIES								
B12.40	VALVE BODIES >4 IN.		4/2	VIS	INTERNAL SURFACES	1	1		One (1) valve in each group
B-P	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB-5222			ALL	

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CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM PIPING SHUTDOWN COOLING (INS. CONT.)								
B-J	PRESSURE RETAINING WELDS								
B9.10	PIPE ≥ 4 IN.								
B9.11		CIRC	36/9	UT	See Comment 100%	3	3	3	Applicable joints covering 25% R.C. sys. piping welds, including non-applicable circ. welds where necessary to meet this minimum quantity (Table IWB-2500-1, Note (1)). Examine long. welds intersecting circ. welds requiring examination.
B9.12		LONG	0	UT	One Pipe Dia. Long Up to 12 In.				
B9.20	PIPE < 4 IN.								
B9.21		CIRC	7/2	PT	See Comment 100%	2			
B9.22		LONG	0	PT	One Pipe Dia. Long Up to 12 In.				
B9.30	BRANCH PIPE CONNECTION								
B9.31	PIPE BRANCH > 2 IN.		0	UT	100%				
B9.32	PIPE BRANCH ≤ 2 IN.		0	PT	100%				
B9.40	SOCKET WELDS		0	PT	100%				
B-G-2	PRESSURE RETAINING BOLTING ≤ 2 IN								
B7.50	PIPING		0	VIS	ALL				
B7.60	PUMPS		0	VIS	ALL				
B7.70	VALVES		12 / 12 sets/sets	VIS	ALL	4	4	4	
B-K-1	INTEGRAL ATTACHMENTS								
B10.10	PIPING		15/15	PT	ALL 100%	5	5	5	
B10.20	PUMPS		0	UT or PT	ALL 100%				
B10.30	VALVES		0	UT or PT	ALL 100%				

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	SHUTDOWN COOLING (INS. CONT.) - CONT'D								
IWF	SUPPORT ASSEMBLIES								
F-A	PLATE & SHELL TYPE SUPPORTS		)	VIS	ALL				
F-B	LINEAR TYPE SUPPORTS		)18/18	VIS	ALL	6	6	6	
F-C	COMPONENT STANDARD SUPPORTS		)	VIS	ALL				
B-M-1	PRESSURE RETAINING WELDS								
B12.30	VALVE BODY WELDS		6/3	See Comment*	100%				One (1) valve in each group
B-M-2	VALVE BODIES								
B12.40	VALVE BODIES >4 IN.		4/2	VIS	INTERNAL SURFACES	2			One (1) valve in each group
B-P	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB-5222			ALL	

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CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM PIPING PRESSURIZER SPRAY LINE LOOP 1B								
B-J	PRESSURE RETAINING WELDS								
B9.10	PIPE ≥ 4 IN.								
B9.11		CIRC	5/2	UT	See Comment	100%		2	Applicable joints covering 25% R.C. sys. piping welds, including non-applicable circ. welds where necessary to meet this minimum quantity (Table IWB-2500-1, Note (1)). Examine long. welds intersecting circ. welds requiring examination.
B9.12		LONG	0	UT		One Pipe Dia. Long Up to 12 In.			
B9.20	PIPE < 4 IN.								
B9.21		CIRC	11/3	PT	See Comment	100%		3	
B9.22		LONG	0	PT		One Pipe Dia. Long Up to 12 In.			
B9.30	BRANCH PIPE CONNECTION								
B9.31	PIPE BRANCH > 2 IN.		0	UT		100%			
B9.32	PIPE BRANCH ≤ 2 IN.		0	PT		100%			
B9.40	SOCKET WELDS		0	PT		100%			
B-G-2	PRESSURE RETAINING BOLTING ≤ 2 IN								
B7.50	PIPING		0	VIS	ALL				
B7.60	PUMPS		0	VIS	ALL				
B7.70	VALVES		1 / 1 set/set	VIS	ALL			1	
B-K-1	INTEGRAL ATTACHMENTS								
B10.10	PIPING		3/3	PT	ALL	100%		3	
B10.20	PUMPS		0	UT or PT	ALL	100%			
B10.30	VALVES		0	UT or PT	ALL	100%			

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	PRESSURIZER SPRAY LINE LOOP 1B - CONT'D								
IWF	SUPPORT ASSEMBLIES								
F-A	PLATE & SHELL TYPE SUPPORTS		)	VIS	ALL				
F-B	LINEAR TYPE SUPPORTS		) 4/4	VIS	ALL		4		
F-C	COMPONENT STANDARD SUPPORTS		)	VIS	ALL				
B-P	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM PIPING PRESSURIZER SPRAY LINE LOOP 1A								
B-J	PRESSURE RETAINING WELDS								
B9.10	PIPE ≥ 4 IN.								
B9.11		CIRC	5/2	UT	See Comment		100%	2	Applicable joints covering 25% R.C. sys. piping welds, including non-applicable circ. welds where necessary to meet this minimum quantity (Table IWB-2500-1, Note (1)). Examine long. welds intersecting circ. welds requiring examination.
B9.12		LONG	0	UT			One Pipe Dia. Long Up to 12 In.		
B9.20	PIPE < 4 IN.								
B9.21		CIRC	10/3	PT	See Comment		100%	3	
B9.22		LONG	0	PT			One Pipe Dia. Long Up to 12 In.		
B9.30	BRANCH PIPE CONNECTION								
B9.31	PIPE BRANCH > 2 IN.		0	UT			100%		
B9.32	PIPE BRANCH ≤ 2 IN.		0	PT			100%		
B9.40	SOCKET WELDS		0	PT			100%		
B-G-2	PRESSURE RETAINING BOLTING ≤ 2 IN								
B7.50	PIPING		0	VIS	ALL				
B7.60	PUMPS		0	VIS	ALL				
B7.70	VALVES		1 / 1 set/set	VIS	ALL			1	
B-K-1	INTEGRAL ATTACHMENTS								
B10.10	PIPING		3/3	PT	ALL		100%	3	
B10.20	PUMPS		0	UT or PT	ALL		100%		
B10.30	VALVES		0	UT or PT	ALL		100%		

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	PRESSURIZER SPRAY LINE LOOP 1A - CONT'D								
IWF	SUPPORT ASSEMBLIES								
F-A	PLATE & SHELL TYPE SUPPORTS		)	VIS	ALL				
F-B	LINEAR TYPE SUPPORTS		) 3/3	VIS	ALL		3		
F-C	COMPONENT STANDARD SUPPORTS		)	VIS	ALL				
B-P	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM PIPING COMBINED PRESSURIZER SPRAY								
B-J	PRESSURE RETAINING WELDS								
B9.10	PIPE ≥ 4 IN.								
B9.11		CIRC	28/7	UT	See Comment 100%		3	4	Applicable joints covering 25% R.C. sys. piping welds, including non-applicable circ. welds where necessary to meet this minimum quantity (Table IWB-2500-1, Note (1)). Examine long. welds intersecting circ. welds requiring examination.
B9.12		LONG	0	UT	One Pipe Dia. Long Up to 12 in.				
B9.20	PIPE < 4 IN.								
B9.21		CIRC	0	PT	See Comment 100%				
B9.22		LONG	0	PT	One Pipe Dia. Long Up to 12 in.				
B9.30	BRANCH PIPE CONNECTION								
B9.31	PIPE BRANCH > 2 IN.		0	UT	100%				
B9.32	PIPE BRANCH ≤ 2 IN.		0	PT	100%				
B9.40	SOCKET WELDS		0	PT	100%				
B-K-1	INTEGRAL ATTACHMENTS								
B10.10	PIPING		13/13	PT	ALL 100%		6	7	
B10.20	PUMPS		0	UT or PT	ALL 100%				
B10.30	VALVES		0	UT or PT	ALL 100%				
IWF	SUPPORT ASSEMBLIES								
F-A	PLATE & SHELL TYPE SUPPORTS		)	VIS	ALL				
F-B	LINEAR TYPE SUPPORTS		)14/14	VIS	ALL		6	8	
F-C	COMPONENT STANDARD SUPPORTS		)	VIS	ALL				
B-P	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM PIPING PRESSURIZER SAFETY VA. PIPING								
B-J	PRESSURE RETAINING WELDS								
B9.10	PIPE ≥ 4 IN.								
B9.11		CIRC	6/3	UT	See Comment	100%		3	Applicable joints covering 25% R.C. sys. piping welds, including non-applicable circ. welds where necessary to meet this minimum quantity (Table IWB-2500-1, Note (1)). Examine long. welds intersecting circ. welds requiring examination.
B9.12		LONG	0	UT		One Pipe Dia. Long Up to 12 In.			
B9.20	PIPE < 4 IN.								
B9.21		CIRC	0	PT	See Comment	100%			
B9.22		LONG	0	PT		One Pipe Dia. Long Up to 12 In.			
B9.30	BRANCH PIPE CONNECTION								
B9.31	PIPE BRANCH > 2 IN.		0	UT		100%			
B9.32	PIPE BRANCH ≤ 2 IN.		0	PT		100%			
B9.40	SOCKET WELDS		0	PT		100%			
B-G-2	PRESSURE RETAINING BOLTING ≤ 2 IN								
B7.50	PIPING		0	VIS	ALL				
B7.60	PUMPS		0	VIS	ALL				
B7.70	VALVES		6 / 6 sets/sets	VIS	ALL			6	
B-K-1	INTEGRAL ATTACHMENTS								
B10.10	PIPING		4/4	PT	ALL	100%		4	
B10.20	PUMPS		0	UT or PT	ALL	100%			
B10.30	VALVES		0	UT or PT	ALL	100%			

CATEGORY / ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	PRESSURIZER SAFETY VA. PIPING - CONT'D								
IWF	SUPPORT ASSEMBLIES								
F-A	PLATE & SHELL TYPE SUPPORTS		)	VIS	ALL				
F-B	LINEAR TYPE SUPPORTS		)10/10	VIS	ALL		5	5	
F-C	COMPONENT STANDARD SUPPORTS		)	VIS	ALL				
B-M-2	VALVE BODIES								
B12.40	VALVE BODIES >4 IN.		2/1	VIS	INTERNAL SURFACES	1			One (1) valve in each group
B-P	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM PIPING AUXILIARY SPRAY LINE								
B-J	PRESSURE RETAINING WELDS								
B9.10	PIPE ≥ 4 IN.								
B9.11		CIRC	0	UT	See Comment 100%				Applicable joints covering 25% R.C. sys. piping welds, including non-applicable circ. welds where necessary to meet this minimum quantity (Table IWB-2500-1, Note (1)). Examine long. welds intersecting circ. welds requiring examination.
B9.12		LONG	0	UT	One Pipe Dia. Long Up to 12 In.				
B9.20	PIPE < 4 IN.								
B9.21		CIRC	31/8	PT	See Comment 100%	3	3	2	
B9.22		LONG	0	PT	One Pipe Dia. Long Up to 12 In.				
B9.30	BRANCH PIPE CONNECTION								
B9.31	PIPE BRANCH > 2 IN.		0	UT	100%				
B9.32	PIPE BRANCH ≤ 2 IN.		0	PT	100%				
B9.40	SOCKET WELDS		0	PT	100%				
B-K-1	INTEGRAL ATTACHMENTS								
B10.10	PIPING		1/1	PT	ALL 100%	1			
IWF	SUPPORT ASSEMBLIES								
F-A	PLATE & SHELL TYPE SUPPORTS		)	VIS	ALL				
F-B	LINEAR TYPE SUPPORTS		)21/21	VIS	ALL	7	7	7	
F-C	COMPONENT STANDARD SUPPORTS		)	VIS	ALL				
B-P	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB-5222			ALL	

CATEGORY / ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM PIPING CHARGING LINE TO LOOP 2A								
B-J	PRESSURE RETAINING WELDS								
B9.10	PIPE ≥ 4 IN.								
B9.11		CIRC	0	UT	See Comment 100%				Applicable joints covering 25% R.C. sys. piping welds, including non-applicable circ. welds where necessary to meet this minimum quantity (Table IWB-2500-1, Note (1)). Examine long. welds intersecting circ. welds requiring examination.
B9.12		LONG	0	UT	One Pipe Dia. Long Up to 12 In.				
B9.20	PIPE < 4 IN.								
B9.21		CIRC	15/4	PT	See Comment 100%			4	
B9.22		LONG	0	PT	One Pipe Dia. Long Up to 12 In.				
B9.30	BRANCH PIPE CONNECTION								
B9.31	PIPE BRANCH > 2 IN.		0	UT	100%				
B9.32	PIPE BRANCH ≤ 2 IN.		0	PT	100%				
B9.40	SOCKET WELDS		0	PT	100%				
B-G-2	PRESSURE RETAINING BOLTING ≤ 2 IN								
B7.50	PIPING		0	VIS	ALL				
B7.60	PUMPS		0	VIS	ALL				
B7.70	VALVES		1 / 1 set/set	VIS	ALL			1	
B-P	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM PIPING LET DOWN LINE								
B-J	PRESSURE RETAINING WELDS								
B9.10	PIPE ≥ 4 IN.								
B9.11		CIRC	0	UT	See Comment	100%			Applicable joints covering 25% R.C. sys. piping welds, including non-applicable circ. welds where necessary to meet this minimum quantity (Table IWB-2500-1, Note (1)). Examine long. welds intersecting circ. welds requiring examination.
B9.12		LONG	0	UT		One Pipe Dia. Long Up to 12 In.			
B9.20	PIPE < 4 IN.								
B9.21		CIRC	14/4	PT	See Comment	100%		4	
B9.22		LONG	0	PT		One Pipe Dia. Long Up to 12 In.			
B9.30	BRANCH PIPE CONNECTION								
B9.31	PIPE BRANCH > 2 IN.		0	UT		100%			
B9.32	PIPE BRANCH ≤ 2 IN.		0	PT		100%			
B9.40	SOCKET WELDS		0	PT		100%			
IWF	SUPPORT ASSEMBLIES								
F-A	PLATE & SHELL TYPE SUPPORTS		8/8	VIS	ALL			8	
F-B	LINEAR TYPE SUPPORTS			VIS	ALL				
F-C	COMPONENT STANDARD SUPPORTS			VIS	ALL				
B-P	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM PIPING DRAIN, LOOP 1B								
B-J	PRESSURE RETAINING WELDS								
B9.10	PIPE ≥ 4 IN.								
B9.11		CIRC	0	UT	See Comment 100%				Applicable joints covering 25% R.C. sys. piping welds, including non-applicable circ. welds where necessary to meet this minimum quantity (Table IWB-2500-1, Note (1)). Examine long. welds intersecting circ. welds requiring examination.
B9.12		LONG	0	UT	One Pipe Dia. Long Up to 12 In.				
B9.20	PIPE < 4 IN.								
B9.21		CIRC	12/3	PT	See Comment 100%		3		
B9.22		LONG	0	PT	One Pipe Dia. Long Up to 12 In.				
B9.30	BRANCH PIPE CONNECTION								
B9.31	PIPE BRANCH > 2 IN.		0	UT	100%				
B9.32	PIPE BRANCH ≤ 2 IN.		0	PT	100%				
B9.40	SOCKET WELDS		0	PT	100%				
IWF	SUPPORT ASSEMBLIES								
F-A	PLATE & SHELL TYPE SUPPORTS		)	VIS	ALL				
F-B	LINEAR TYPE SUPPORTS		) 2/2	VIS	ALL		2		
F-C	COMPONENT STANDARD SUPPORTS		)	VIS	ALL				
B-P	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM PIPING HOT LEG DRAIN, LOOP 1								
B-J	PRESSURE RETAINING WELDS								
B9.10	PIPE ≥ 4 IN.								
B9.11		CIRC	0	UT	See Comment 100%				Applicable joints covering 25% R.C. sys. piping welds, including non-applicable circ. welds where necessary to meet this minimum quantity (Table IWB-2500-1, Note (1)). Examine long. welds intersecting circ. welds requiring examination.
B9.12		LONG	0	UT	One Pipe Dia. Long Up to 12 In.				
B9.20	PIPE < 4 IN.								
B9.21		CIRC	12/3	PT	See Comment 100%		3		
B9.22		LONG	0	PT	One Pipe Dia. Long Up to 12 In.				
B9.30	BRANCH PIPE CONNECTION								
B9.31	PIPE BRANCH > 2 IN.		0	UT	100%				
B9.32	PIPE BRANCH ≤ 2 IN.		0	PT	100%				
B9.40	SOCKET WELDS		0	PT	100%				
IWF	SUPPORT ASSEMBLIES								
F-A	PLATE & SHELL TYPE SUPPORTS		)	VIS	ALL				
F-B	LINEAR TYPE SUPPORTS		) 2/2	VIS	ALL		2		
F-C	COMPONENT STANDARD SUPPORTS		)	VIS	ALL				
B-P	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	AMOUNT & EXTENT	PERIOD 1	2	3	COMMENTS
	REACTOR COOLANT SYSTEM PIPING DRAIN, LOOP 1A								
B-J	PRESSURE RETAINING WELDS								
B9.10	PIPE ≥ 4 IN.								
B9.11		CIRC	0	UT	See Comment 100%				Applicable joints covering 25% R.C. sys. piping welds, including non-applicable circ. welds where necessary to meet this minimum quantity (Table IWB-2500-1, Note (1)). Examine long. welds intersecting circ. welds requiring examination.
B9.12		LONG	0	UT	One Pipe Dia. Long Up to 12 In.				
B9.20	PIPE < 4 IN.								
B9.21		CIRC	8/2	PT	See Comment 100%		2		
B9.22		LONG	0	PT	One Pipe Dia. Long Up to 12 In.				
B9.30	BRANCH PIPE CONNECTION								
B9.31	PIPE BRANCH > 2 IN.		0	UT	100%				
B9.32	PIPE BRANCH ≤ 2 IN.		0	PT	100%				
B9.40	SOCKET WELDS		0	PT	100%				
B-P	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM PIPING CHARGING LINE TO LOOP 1A								
B-J	PRESSURE RETAINING WELDS								
B9.10	PIPE ≥ 4 IN.								
B9.11		CIRC	0	UT	See Comment 100%				Applicable joints covering 25% R.C. sys. piping welds, including non-applicable circ. welds where necessary to meet this minimum quantity (Table IWB-2500-1, Note (1)). Examine long. welds intersecting circ. welds requiring examination.
B9.12		LONG	0	UT	One Pipe Dia. Long Up to 12 In.				
B9.20	PIPE < 4 IN.								
B9.21		CIRC	18/5	PT	See Comment 100%		3	2	
B9.22		LONG	0	PT	One Pipe Dia. Long Up to 12 In.				
B9.30	BRANCH PIPE CONNECTION								
B9.31	PIPE BRANCH > 2 IN.		0	UT	100%				
B9.32	PIPE BRANCH ≤ 2 IN.		0	PT	100%				
B9.40	SOCKET WELDS		0	PT	100%				
B-K-1	INTEGRAL ATTACHMENTS								
B10.10	PIPING		1/1	PT	ALL 100%			1	
IWF	SUPPORT ASSEMBLIES								
F-A	PLATE & SHELL TYPE SUPPORTS		)	VIS	ALL				
F-B	LINEAR TYPE SUPPORTS		)15/15	VIS	ALL		9	6	
F-C	COMPONENT STANDARD SUPPORTS		)	VIS	ALL				
B-P	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM PIPING DRAIN, LOOP 2A								
B-J	PRESSURE RETAINING WELDS								
B9.10	PIPE ≥ 4 IN.								
B9.11		CIRC	0	UT	See Comment 100%				Applicable joints covering 25% R.C. sys. piping welds, including non-applicable circ. welds where necessary to meet this minimum quantity (Table IWB-2500-1, Note (1)). Examine long. welds intersecting circ. welds requiring examination.
B9.12		LONG	0	UT	One Pipe Dia. Long Up to 12 In.				
B9.20	PIPE < 4 IN.								
B9.21		CIRC	8/2	PT	See Comment 100%			2	
B9.22		LONG	0	PT	One Pipe Dia. Long Up to 12 In.				
B9.30	BRANCH PIPE CONNECTION								
B9.31	PIPE BRANCH > 2 IN.		0	UT	100%				
B9.32	PIPE BRANCH ≤ 2 IN.		0	PT	100%				
B9.40	SOCKET WELDS		0	PT	100%				
B-P	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM PIPING DRAIN, LOOP 2B								
B-J	PRESSURE RETAINING WELDS								
B9.10	PIPE ≥ 4 IN.								
B9.11		CIRC	0	UT	See Comment 100%				Applicable joints covering 25% R.C. sys. piping welds, including non-applicable circ. welds where necessary to meet this minimum quantity (Table IWB-2500-1, Note (1)). Examine long. welds intersecting circ. welds requiring examination.
B9.12		LONG	0	UT	One Pipe Dia. Long Up to 12 in.				
B9.20	PIPE < 4 IN.								
B9.21		CIRC	8/2	PT	See Comment 100%			2	
B9.22		LONG	0	PT	One Pipe Dia. Long Up to 12 in.				
B9.30	BRANCH PIPE CONNECTION								
B9.31	PIPE BRANCH > 2 IN.		0	UT	100%				
B9.32	PIPE BRANCH ≤ 2 IN.		0	PT	100%				
B9.40	SOCKET WELDS		0	PT	100%				
B-P	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM PIPING SAFETY INJECTION FROM #2 HP HDR								
B-J	PRESSURE RETAINING WELDS								
B9.10	PIPE ≥ 4 IN.								
B9.11		CIRC	0	UT	See Comment 100%				Applicable joints covering 25% R.C. sys. piping welds, including non-applicable circ. welds where necessary to meet this minimum quantity (Table IWB-2500-1, Note (1)). Examine long. welds intersecting circ. welds requiring examination.
B9.12		LONG	0	UT	One Pipe Dia. Long Up to 12 In.				
B9.20	PIPE < 4 IN.								
B9.21		CIRC	39/10	PT	See Comment 100%	6	4		
B9.22		LONG	0	PT	One Pipe Dia. Long Up to 12 In.				
B9.30	BRANCH PIPE CONNECTION								
B9.31	PIPE BRANCH > 2 IN.		0	UT	100%				
B9.32	PIPE BRANCH ≤ 2 IN.		0	PT	100%				
B9.40	SOCKET WELDS		0	PT	100%				
B-K-1	INTEGRAL ATTACHMENTS								
B10.10	PIPING		11/11	PT	ALL 100%	4	3	4	
B10.20	PUMPS		0	UT or PT	ALL 100%				
B10.30	VALVES		0	UT or PT	ALL 100%				
IWF	SUPPORT ASSEMBLIES								
F-A	PLATE & SHELL TYPE SUPPORTS		)	VIS	ALL				
F-B	LINEAR TYPE SUPPORTS		)14/14	VIS	ALL	7	3	4	
F-C	COMPONENT STANDARD SUPPORTS		)	VIS	ALL				

CATEG. ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	SAFETY INJECTION FROM #2 HP HDR - CONT'D								
B-P	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REACTOR COOLANT SYSTEM PIPING SAMPLE HOTLEG LOOPS 1 & 2								
B-P	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWB-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWB-5222			ALL	

SG:0565W:1k

SONGS UNIT 2 TEN (10) YEAR INSERVICE INSPECTION PROGRAM SUMMARY

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	SECONDARY COOLANT SYSTEM								
	STEAM GENERATORS		2				1		
C-A	PRESSURE RETAINING WELDS								
C1.10	SHELL WELDS	CIRC	6/3	UT	100%		3		
C1.20	HEAD WELDS	CIRC	4/2	UT	100%		2		
C1.30	TUBESHEET-TO-SHELLWELD	CIRC	2/1	UT	100%		1		
	TUBESHEET-TO-STAY CYLINDER WELD	CIRC	2/1	UT	100%		1		
C-B	NOZZLE WELDS								
C2.10	NOZZLE ≤ 1/2 IN. WALL		0	PT	100%				
C2.20	NOZZLE > 1/2 IN. WALL		4/2	PT	100%		2		
C-C	INTEGRAL ATTACHMENTS								
C3.10	INTEGRALLY WELDED ATTACHMENTS		8/4	PT	100%		4		
C-F	PIPING PRESSURE RETAINING WELDS								
C5.10	PIPE ≤ 1/2 IN. WALL (t)								
C5.11		CIRC	0	PT	100%				
C5.12		LONG	0	PT	2.5tLG.				
C5.20	PIPE > 1/2 IN. WALL (t)								
C5.21		CIRC	4/2	UT	100%		2		
C5.22		LONG	0	UT	2.5tLG.				
C5.30	BRANCH PIPE CONNECTION								
C5.31		CIRC	0	PT	100%				
C5.32		LONG	0	PT	2.5tLG.				
C-H	ALL PRESSURE RETAINING COMPONENTS								
C7.10	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
C7.11	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	MAIN FEEDWATER TO STEAM GENERATOR #1								
C-F	PIPING PRESSURE RETAINING WELDS								
C5.10	PIPE ≤ 1/2 IN. WALL (t)								
C5.11		CIRC	0	PT	100%				Applicable welds plus additional welds at structural discontinuities such that total number selected includes 25% sys. circ. welds (Table IWC-2500-1, Note(1)). Examine long. welds intersecting circ. welds requiring examination.
C5.12		LONG	0	PT	2.5tLG.				
C5.20	PIPE > 1/2 IN. WALL (t)								
C5.21		CIRC	25/6	UT	See Comment 100%	2	3	1	
C5.22		LONG	0	UT	2.5tLG.				
C5.30	BRANCH PIPE CONNECTION								
C5.31		CIRC	1/1	PT	See Comment 100%		1		
C5.32		LONG	0	PT	2.5tLG				
C-C	INTEGRAL ATTACHMENTS								
C3.40	PIPING WELDS		8/8	PT	ALL 100%	2	6		
C3.70	PUMP WELDS		0	PT	ALL 100%				
C3.100	VALVE WELDS		0	PT	ALL 100%				
IWF	SUPPORT ASSEMBLIES								
F-A	PLATE & SHELL TYPE SUPPORTS		)	VIS	ALL				
F-B	LINEAR TYPE SUPPORTS		)11/11	VIS	ALL	2	9		
F-C	COMPONENT STANDARD SUPPORTS		)	VIS	ALL				
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	MAIN FEEDWATER TO STEAM GENERATOR #2								
C-F	PIPING PRESSURE RETAINING WELDS								
C5.10	PIPE ≤ 1/2 IN. WALL (t)								
C5.11		CIRC.	0	PT	100%				Applicable welds plus additional welds at structural discontinuities such that total number selected includes 25% sys. circ. welds (Table IWC-2500-1, Note(1)). Examine long. welds intersecting circ. welds requiring examination.
C5.12		LONG	0	PT	2.5tLG.				
C5.20	PIPE > 1/2 IN. WALL (t)								
C5.21		CIRC	25/6	UT	See Comment 2.5tLG.	2	1	3	
C5.22		LONG	0	UT	2.5tLG.				
C5.30	BRANCH PIPE CONNECTION								
C5.31		CIRC	1/1	PT	See Comment 100%			1	
C5.32		LONG	0	PT	2.5 tLG.				
C-C	INTEGRAL ATTACHMENTS								
C3.40	PIPING WELDS		8/8	PT	ALL 100%	2		6	
C3.70	PUMP WELDS		0	PT	ALL 100%				
C3.100	VALVE WELDS		0	PT	ALL 100%				
IWF	SUPPORT ASSEMBLIES								
F-A	PLATE & SHELL TYPE SUPPORTS		)	VIS	ALL				
F-B	LINEAR TYPE SUPPORTS		)11/11	VIS	ALL	2		9	
F-C	COMPONENT STANDARD SUPPORTS		)	VIS	ALL				
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	AUXILIARY FEEDWATER TO STEAM GENERATOR #1								
C-F	PIPING PRESSURE RETAINING WELDS								
C5.10	PIPE ≤ 1/2 IN. WALL (t)								
C5.11		CIRC	0	PT	100%				Applicable welds plus additional welds at structural discontinuities such that total number selected includes 25% sys. circ. welds (Table IWC-2500-1, Note(1)). Examine long. welds intersecting circ. welds requiring examination.
C5.12		LONG	0	PT	2.5tLG.				
C5.20	PIPE > 1/2 IN WALL (t)								
C5.21		CIRC	60/18	UT	See Comment 100%	8	3	7	
C5.22		LONG	0	UT	2.5tLG.				
C5.30	BRANCH PIPE CONNECTION								
C5.31		CIRC	0	PT	100%				
C5.32		LONG	0	PT	2.5tLG.				
C-G	INTEGRAL ATTACHMENTS								
C3.40	PIPING WELDS		11/11	PT	ALL 100%	4	2	5	
C3.70	PUMP WELDS		0	PT	ALL 100%				
C3.100	VALVE WELDS		0	PT	ALL 100%				
IWF	SUPPORT ASSEMBLIES								
F-A	PLATE & SHELL TYPE SUPPORTS		)	VIS	ALL				
F-B	LINEAR TYPE SUPPORTS		)16/16	VIS	ALL	6	4	6	
F-C	COMPONENT STANDARD SUPPORTS		)	VIS	ALL				
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	AUXILIARY FEEDWATER TO STEAM GENERATOR #2								
C-F	PIPING PRESSURE RETAINING WELDS								
C5.10	PIPE ≤ 1/2 IN. WALL (t)								
C5.11		CIRC	0	PT	100%				Applicable welds plus additional welds at structural discontinuities such that total number selected includes 25% sys. circ. welds (Table IWC-2500-1, Note(1)). Examine long. welds intersecting circ. welds requiring examination.
C5.12		LONG	0	PT	2.5tLG.				
C5.20	PIPE > 1/2 IN WALL (t)								
C5.21		CIRC	43/20	UT	See Comment 100%	8	9	3	
C5.22		LONG	0	UT	2.5tLG.				
C5.30	BRANCH PIPE CONNECTION								
C5.31		CIRC	0	PT	100%				
C5.32		LONG	0	PT	2.5tLG.				
C-G	INTEGRAL ATTACHMENTS								
C3.40	PIPING WELDS		7/7	PT	ALL 100%	2	3	2	
C3.70	PUMP WELDS		0	PT	ALL 100%				
C3.100	VALVE WELDS		0	PT	ALL 100%				
IWF	SUPPORT ASSEMBLIES								
F-A	PLATE & SHELL TYPE SUPPORTS		}	VIS	ALL				
F-B	LINEAR TYPE SUPPORTS		}11/11	VIS	ALL	3	4	4	
F-C	COMPONENT STANDARD SUPPORTS		}	VIS	ALL				
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	CONTINUOUS BLOWDOWN FROM STEAM GENERATOR #1								
C-F	PIPING PRESSURE RETAINING WELDS								
C5.10	PIPE ≤ 1/2 IN. WALL (t)								
C5.11		CIRC	46/15	PT	See Comment 100%	6	2	7	Applicable welds plus additional welds at structural discontinuities such that total number selected includes 10% sys. circ. welds in piping ≤8 in. nom. pipe size (Table IWC-2500-1, Note (1)). Examine long. welds intersecting circ. welds requiring examination.
C5.12		LONG	0	PT	2.5tLG.				
C5.20	PIPE > 1/2 IN WALL (t)								
C5.21		CIRC	0	UT	100%				
C5.22		LONG	0	UT	2.5tLG.				
C5.30	BRANCH PIPE CONNECTION								
C5.31		CIRC	0	PT	100%				
C5.32		LONG	0	PT	2.5tLG.				
C-C	INTEGRAL ATTACHMENTS								
C3.40	PIPING WELDS		28/28	PT	ALL 100%	17	6	5	
C3.70	PUMP WELDS		0	PT	ALL 100%				
C3.100	VALVE WELDS		0	PT	ALL 100%				
IWF	SUPPORT ASSEMBLIES								
F-A	PLATE & SHELL TYPE SUPPORTS		31/31	VIS	ALL	18	7	6	
F-B	LINEAR TYPE SUPPORTS			VIS	ALL				
F-C	COMPONENT STANDARD SUPPORTS			VIS	ALL				
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT		PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	CONTINUOUS BLOWDOWN FROM STEAM GENERATOR #2									
C-F	PIPING PRESSURE RETAINING WELDS									
C5.10	PIPE ≤ 1/2 IN. WALL (t)									
C5.11		CIRC	27/15	PT	See Comment	100%	6	7	2	Applicable welds plus additional welds at structural discontinuities such that total number selected includes 10% sys. circ. welds in piping ≤8 in. nom. pipe size (Table IWC-2500-1, Note (1)). Examine long. welds intersecting circ. welds requiring examination
C5.12		LONG	0	PT		2.5tLG.				
C5.20	PIPE > 1/2 IN WALL (t)									
C5.21		CIRC	0	UT		100%				
C5.22		LONG	0	UT		2.5tLG.				
C5.30	BRANCH PIPE CONNECTION									
C5.31		CIRC	0	PT		100%				
C5.32		LONG	0	PT		2.5tLG.				
C-G	INTEGRAL ATTACHMENTS									
C3.40	PIPING WELDS		19/19	PT	ALL	100%	1	7	11	
C3.70	PUMP WELDS		0	PT	ALL	100%				
C3.100	VALVE WELDS		0	PT	ALL	100%				
IWF	SUPPORT ASSEMBLIES									
F-A	PLATE & SHELL TYPE SUPPORTS		)	VIS	ALL					
F-B	LINEAR TYPE SUPPORTS		)21/21	VIS	ALL		1	7	13	
F-C	COMPONENT STANDARD SUPPORTS		)	VIS	ALL					
C-H	ALL PRESSURE RETAINING COMPONENTS									
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221		ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM TEST PER IWC-5222				ALL	

CATEGORY / ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	MAIN STEAM FROM STEAM GENERATOR #1 INSIDE CONTAINMENT								
C-F	PIPING PRESSURE RETAINING WELDS								
C5.10	PIPE ≤ 1/2 IN. WALL (t)								
C5.11		CIRC	0	PT	100%				Applicable welds plus additional welds at structural discontinuities such that total number selected includes 10% sys. circ. welds in piping ≤ 8 in. nom. pipe size (Table IWC-2500-1, Note (1)). Examine long. welds intersecting circ. welds requiring examination.
C5.12		LONG	0	PT	2.5tLG.				
C5.20	PIPE > 1/2 IN WALL (t)								
C5.21		CIRC	17/5	UT	See Comment 100%	2	1	2	
C5.22		LONG	17/9	UT	2.5tLG.	3	2	4	
C5.30	BRANCH PIPE CONNECTION								
C5.31		CIRC	0	PT	100%				
C5.32		LONG	0	PT	2.5tLG.				
C-G	INTEGRAL ATTACHMENTS								
C3.40	PIPING WELDS		10/10	PT	ALL 100%	1	9		
C3.70	PUMP WELDS		0	PT	ALL 100%				
C3.100	VALVE WELDS		0	PT	ALL 100%				
IWF	SUPPORT ASSEMBLIES								
F-A	PLATE & SHELL TYPE SUPPORTS		)	VIS	ALL				
F-B	LINEAR TYPE SUPPORTS		)10/10	VIS	ALL	1	9		
F-C	COMPONENT STANDARD SUPPORTS		)	VIS	ALL				
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	MAIN STEAM FROM STEAM GENERATOR #2 INSIDE CONTAINMENT								
C-F	PIPING PRESSURE RETAINING WELDS								
C5.10	PIPE ≤ 1/2 IN. WALL (t)								
C5.11		CIRC	0	PT	100%				Applicable welds plus additional welds at structural discontinuities such that total number selected includes 10% sys. circ. welds in piping ≤ 8 in. nom. pipe size (Table IWC-2500-1, Note (1)). Examine long. welds intersecting circ. welds requiring examination.
C5.12		LONG	0	PT	2.5tLG.				
C5.20	PIPE > 1/2 IN WALL (t)								
C5.21		CIRC	19/5	UT	See Comment 100%	2	2	1	
C5.22		LONG	17/9	UT	2.5tLG.	3	4	2	
C5.30	BRANCH PIPE CONNECTION								
C5.31		CIRC	1/0	PT	See Comment 100%				
C5.32		LONG	0	PT	2.5tLG.				
C-C	INTEGRAL ATTACHMENTS								
C3.40	PIPING WELDS		10/10	PT	ALL 100%	1		9	
C3.70	PUMP WELDS		0	PT	ALL 100%				
C3.100	VALVE WELDS		0	PT	ALL 100%				
IWF	SUPPORT ASSEMBLIES								
F-A	PLATE & SHELL TYPE SUPPORTS		)	VIS	ALL				
F-B	LINEAR TYPE SUPPORTS		)10/10	VIS	ALL	1		9	
F-C	COMPONENT STANDARD SUPPORTS		)	VIS	ALL				
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	MAIN STEAM FROM STEAM GENERATOR #1 OUTSIDE CONTAINMENT								
C-F	PIPING PRESSURE RETAINING WELDS								
C5.10	PIPE ≤ 1/2 IN. WALL (t)								
C5.11		CIRC	36/36	PT	See Comment 100%	12	12	12	Applicable welds plus additional welds at structural discontinuities such that total number selected includes 10% sys. circ. welds in piping ≤ 8 in. nom. pipe size (Table IWC-2500-1, Note (1)). Examine long. welds intersecting circ. welds requiring examination.
C5.12		LONG	0	PT	2.5tLG.				
C5.20	PIPE > 1/2 IN WALL (t)								
C5.21		CIRC	10/10	UT	See Comment 100%	3	3	4	
C5.22		LONG	4/4	UT	2.5tLG.	2	2		
C5.30	BRANCH PIPE CONNECTION								
C5.31		CIRC	0	PT	See Comment 100%				
C5.32		LONG	0	PT	2.5tLG.				
C-C	INTEGRAL ATTACHMENTS								
C3.40	PIPING WELDS		6/6	PT	ALL 100%	2	2	2	
C3.70	PUMP WELDS		0	PT	ALL 100%				
C3.100	VALVE WELDS		0	PT	ALL 100%				
C-G	PRESSURE RETAINING WELDS								
C6.10	PUMP CASING WELDS		0	PT	100%				One (1) pump in ea. group
C6.20	VALVE BODY WELDS		1/1	PT	100%	1			One (1) valve in ea. group.
IWF	SUPPORT ASSEMBLIES								
F-A	PLATE & SHELL TYPE SUPPORTS		)	VIS	ALL				
F-B	LINEAR TYPE SUPPORTS		)11/11	VIS	ALL	4	3	4	
F-C	COMPONENT STANDARD SUPPORTS		)	VIS	ALL				
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	MAIN STEAM FROM STEAM GENERATOR #2 OUTSIDE CONTAINMENT								
C-F	PIPING PRESSURE RETAINING WELDS								
C5.10	PIPE ≤ 1/2 IN. WALL (t)								
C5.11		CIRC	37/37	PT	See Comment 100%	13	12	12	Applicable welds plus additional welds at structural discontinuities such that total number selected includes 10% sys. circ. welds in piping ≤ 8 in. nom. pipe size (Table IWC-2500-1, Note (1)). Examine long. welds intersecting circ. welds requiring examination.
C5.12		LONG	0	PT	2.5tLG.				
C5.20	PIPE > 1/2 IN WALL (t)								
C5.21		CIRC	10/10	UT	See Comment 100%	3	4	3	
C5.22		LONG	4/4	UT	2.5tLG.	2		2	
C5.30	BRANCH PIPE CONNECTION								
C5.31		CIRC	0	PT	100%				
C5.32		LONG	0	PT	2.5tLG.				
C-G	INTEGRAL ATTACHMENTS								
C3.40	PIPING WELDS		7/7	PT	ALL 100%	2	2	3	
C3.70	PUMP WELDS		0	PT	ALL 100%				
C3.100	VALVE WELDS		0	PT	ALL 100%				
C-Q	PRESSURE RETAINING WELDS								
C6.10	PUMP CASING WELDS		0	PT	100%				One (1) pump in ea. group
C6.20	VALVE BODY WELDS		1/1	PT	100%		1		One (1) valve in ea. group.
IWF	SUPPORT ASSEMBLIES								
F-A	PLATE & SHELL TYPE SUPPORTS		)	VIS	ALL				
F-B	LINEAR TYPE SUPPORTS		)11/11	VIS	ALL	4	4	3	
F-C	COMPONENT STANDARD SUPPORTS		)	VIS	ALL				
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM TEST PER IWC-5222			ALL	

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CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	SAFETY INJECTION TANK #1								
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO. TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	SAFETY INJECTION TANK #2								
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	AMOUNT & EXTENT	PERIOD 1	2	3	COMMENTS
	SAFETY INJECTION TANK #3								
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	SAFETY INJECTION TANK #4								
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO. TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	SAFETY INJECTION TANK FILL LINE FROM REFUELING WATER TANK								
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222			ALL	

SONGS UNIT 2 TEN (10) YEAR INSERVICE INSPECTION PROGRAM SUMMARY

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT		PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	SHUTDOWN COOLING INSIDE CONTAINMENT									
C-F	PRESSURE RETAINING WELDS, PIPING WELDS									
C2.1	PIPE & FITTINGS	CIRC	31/29	UT	See	100%	10	10	9	100% applicable welds
C2.2	PIPE & FITTINGS	LONG	20/20	UT	Comments	100%	7	7	6	
C2.3	BRANCH PIPE CONNECTION	CIRC	2/2	UT	See	100%	1		1	100% applicable welds
		LONG	0	UT	Comments					
	PUMPS									
C3.1	PUMP CASING WELDS		0	VOL	ALL	100%				
	VALVES									
C4.1	VALVE BODY WELDS		0	VOL	ALL	100%				
C-F-1	INTEGRAL ATTACHMENTS									
C2.5	PIPING WELDS		17/17	PT	ALL	100%	6	6	5	
C3.3	PUMP WELDS		0	PT	ALL	100%				
C4.3	VALVE WELDS		0	PT	ALL	100%				
C-F-2	SUPPORT COMPONENTS									
C2.6	PIPING		17/17	VIS	ALL	100%	6	6	5	
C3.4	PUMPS		0	VIS	ALL	100%				
C4.4	VALVES		0	VIS	ALL	100%				
C-H	ALL PRESSURE RETAINING COMPONENTS									
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221		ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222				ALL	

CATEGORY / ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	CONTAINMENT SPRAY PUMP FROM EMERGENCY SUMP								
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT		PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	SHUTDOWN COOLING OUTSIDE CONTAINMENT									
C-F	PRESSURE RETAINING WELDS, PIPING WELDS									
C2.1	PIPE & FITTINGS	CIRC	118/109	UT	See Comments	100%	37	36	36	100% applicable welds
C2.2	PIPE & FITTINGS	LONG	54/54	UT		100%	18	18	18	
C2.3	BRANCH PIPE CONNECTION	CIRC LONG	1/1 0	UT UT	See Comments	100%	1			100% applicable welds
C3.1	PUMPS PUMP CASING WELDS		0	VOL	ALL	100%				
C4.1	VALVES VALVE BODY WELDS		4/4	See Comment*		100%				
C-E-1	INTEGRAL ATTACHMENTS									
C2.5	PIPING WELDS		46/46	PT	ALL	100%	16	15	15	
C3.3	PUMP WELDS		0	PT	ALL	100%				
C4.3	VALVE WELDS		0	PT	ALL	100%				
C-E-2	SUPPORT COMPONENTS									
C2.6	PIPING		63/63	VIS	ALL	100%	21	21	21	
C3.4	PUMPS		0	VIS	ALL	100%				
C4.4	VALVES		0	VIS	ALL	100%				
C-H	ALL PRESSURE RETAINING COMPONENTS									
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221		ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222				ALL	

*Pending availability of acceptable method for volumetric examination inservice of cast austenitic material, no examination will be performed.

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	AMOUNT & EXTENT		PERIOD 1	2	3	COMMENTS
	LPSI PUMP #1 SUCTION									
C-F	PRESSURE RETAINING WELDS, PIPING WELDS									
C2.1	PIPE & FITTINGS	CIRC	15/13	UT	See	100%	5	4	4	100% applicable welds
C2.2	PIPE & FITTINGS	LONG	6/6	UT	Comments	100%	2	2	2	
C2.3	BRANCH PIPE CONNECTION	CIRC LONG	0 0	UT UT		100%				
	PUMPS									
C3.1	PUMP CASING WELDS		1/1	See Comment*		100%				*Pending availability of acceptable method for volumetric examination inservice of cast austenitic material, no examination will be performed.
	VALVES									
C4.1	VALVE BODY WELDS		0	VOL	ALL	100%				
C-D	BOLTING ≤2 IN.									
C2.4	PIPING		2 / 2 sets/sets	VIS	ALL	100%	1		1	
C3.2	PUMPS		1 / 1 set /set	VIS	ALL	100%	1			
C4.2	VALVES		2 / 2 sets/sets	VIS	ALL	100%	1		1	
C-E-1	INTEGRAL ATTACHMENTS									
C2.5	PIPING WELDS		2/2	PT	ALL	100%	1		1	
C3.3	PUMP WELDS		1/1	PT	ALL	100%	1			
C4.3	VALVE WELDS		0	PT	ALL	100%				
C-E-2	SUPPORT COMPONENTS									
C2.6	PIPING		2/2	VIS	ALL	100%	1		1	
C3.4	PUMPS		1/1	VIS	ALL	100%	1			
C4.4	VALVES		0	VIS	ALL	100%				
C-H	ALL PRESSURE RETAINING COMPONENTS									
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221		ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222				ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	CONTAINMENT SPRAY PUMP #1 FROM EMERGENCY SUMP								
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	CONTAINMENT SPRAY PUMP #2 FROM EMERGENCY SUMP								
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222			ALL	

CATEG. ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	SAFETY INJECTION LINE FROM REFUELING WATER TANK								
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIB	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT		PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	LPSI PUMP #2 SUCTION									
C-F	PRESSURE RETAINING WELDS, PIPING WELDS									
C2.1	PIPE & FITTINGS	CIRC	33/32	UT	See	100%	11	11	10	100% applicable welds
C2.2	PIPE & FITTINGS	LONG	29/29	UT	Comments	100%	10	10	9	
C2.3	BRANCH PIPE CONNECTION	CIRC LONG	0 0	UT UT		100%				
C3.1	PUMPS PUMP CASING WELDS		1/1	See Comment*		100%				*Pending availability of acceptable method for volumetric examination inservice of cast austentic material, no examination will be performed.
C4.1	VALVES VALVE BODY WELDS		0	VOL	ALL	100%				
C-D	BOLTING ≤2 IN.									
C2.4	PIPING		2 / 2 sets/sets	VIS	ALL	100%	1		1	
C3.2	PUMPS		1 / 1 set/set	VIS	ALL	100%	1			
C4.2	VALVES		3 / 3 sets/sets	VIS	ALL	100%	1	1	1	
C-E-1	INTEGRAL ATTACHMENTS									
C2.5	PIPING WELDS		12/12	PT	ALL	100%	4	4	4	
C3.3	PUMP WELDS		1/1	PT	ALL	100%		1		
C4.3	VALVE WELDS		0	PT	ALL	100%				
C-E-2	SUPPORT COMPONENTS									
C2.6	PIPING		16/16	VIS	ALL	100%	6	5	5	
C3.4	PUMPS		1/1	VIS	ALL	100%		1		
C4.4	VALVES		0	VIS	ALL	100%				
C-H	ALL PRESSURE RETAINING COMPONENTS									
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221		ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222				ALL	

CATEGORY / ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	COMBINED SUCTION LINES HPSI PUMPS								
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222			ALL	

CATEGORY / ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	COMBINED DISCHARGE HEADER HPSI PUMPS								
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	SAFETY INJECTION HP HEADER #1								
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	SAFETY INJECTION HP HEADER #2								
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222			ALL	

CATEGORY / ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	HPSI, LPSI & CS TO REFUELING WATER TANK AND SAMPLE SYSTEM								
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT		PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	COMBINED DISCHARGE - LPSI PUMPS #1 & #2									
C-F	PRESSURE RETAINING WELDS, PIPING WELDS									
C2.1	PIPE & FITTINGS	CIRC	81/77	UT	See	100%	26	26	25	100% applicable welds
C2.2	PIPE & FITTINGS	LONG	37/37	UT	Comments	100%	13	12	12	
C2.3	BRANCH PIPE CONNECTION	CIRC LONG	0 0	UT UT		100%				
	PUMPS									
C3.1	PUMP CASING WELDS		2/2	See Comment*		100%				*Pending availability of acceptable method for volumetric examination inservice of cast austenitic material, no examination will be performed.
	VALVES									
C4.1	VALVE BODY WELDS		0	VOL	ALL	100%				
C-D	BOLTING ≤2 IN.									
C2.4	PIPING		1 / 1 set/set	VIS	ALL	100%	1			
C3.2	PUMPS		0	VIS	ALL	100%				
C4.2	VALVES		0	VIS	ALL	100%				
C-E-1	INTEGRAL ATTACHMENTS									
C2.5	PIPING WELDS		22/22	PT	ALL	100%	8	7	7	
C3.3	PUMP WELDS		0	PT	ALL	100%				
C4.3	VALVE WELDS		0	PT	ALL	100%				
C-E-2	SUPPORT COMPONENTS									
C2.6	PIPING		37/37	VIS	ALL	100%	13	12	12	
C3.4	PUMPS		0	VIS	ALL	100%				
C4.4	VALVES		0	VIS	ALL	100%				
C-H	ALL PRESSURE RETAINING COMPONENTS									
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221		ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222				ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT ° EXTENT		PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	LPSI HEADER									
C-F	PRESSURE RETAINING WELDS, PIPING WELDS									
C2.1	PIPE ° FITTINGS	CIRC	150/128	UT	See	100%	43	43	42	100% applicable welds
C2.2	PIPE ° FITTINGS	LONG	50/50	UT	Comments	100%	17	17	16	
C2.3	BRANCH PIPE CONNECTION	CIRC LONG	0 0	UT UT		100%				
C3.1	PUMPS PUMP CASING WELDS		0	VOL	ALL	100%				
C4.1	VALVES VALVE BODY WELDS		0	VOL	ALL	100%				
C-E-1	INTEGRAL ATTACHMENTS									
C2.5	PIPING WELDS		43/43	PT	ALL	100%	15	14	14	
C3.3	PUMP WELDS		0	PT	ALL	100%				
C4.3	VALVE WELDS		0	PT	ALL	100%				
C-E-2	SUPPORT COMPONENTS									
C2.6	PIPING		63/63	VIS	ALL	100%	21	21	21	
C3.4	PUMPS		0	VIS	ALL	100%				
C4.4	VALVES		0	VIS	ALL	100%				
C-H	ALL PRESSURE RETAINING COMPONENTS									
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221		ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222				ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	METHOD	EXAMINATION AMOUNT ° EXTENT		PERIOD 1	2	3	COMMENTS
	CONT. SPRAY PUMP #1 TO SHUTDOWN COOLING HEAT EXCHANGER #1									
C-F	PRESSURE RETAINING WELDS, PIPING WELDS									
C2.1	PIPE ° FITTINGS	CIRC	30/27	UT	See	100%	9	9	9	100% applicable welds
C2.2	PIPE ° FITTINGS	LONG	10/10	UT	Comments	100%	4	3	3	
C2.3	BRANCH PIPE CONNECTION	CIRC LONG	0 0	UT UT		100%				
C3.1	PUMPS PUMP CASING WELDS		0	VOL	ALL	100%				
C4.1	VALVES VALVE BODY WELDS		0	VOL	ALL	100%				
C-F-1	INTEGRAL ATTACHMENTS									
C2.5	PIPING WELDS		6/6	PT	ALL	100%	2	2	2	
C3.3	PUMP WELDS		0	PT	ALL	100%				
C4.3	VALVE WELDS		0	PT	ALL	100%				
C-F-2	SUPPORT COMPONENTS									
C2.6	PIPING		15/15	VIS	ALL	100%	5	5	5	
C3.4	PUMPS		0	VIS	ALL	100%				
C4.4	VALVES		0	VIS	ALL	100%				
C-F	ALL PRESSURE RETAINING COMPONENTS									
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221		ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222				ALL	

CATEGORY / ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	CONT. SPRAY PUMP #1 TO SHUTDOWN COOLING HEAT EXCHANGER #1								
C-A	PRESSURE RETAINING WELDS								
C1.10	SHELL WELDS	CIRC	1/0	UT	100%				
C1.20	HEAD WELDS	CIRC	0	UT	100%				
C1.30	TUBESHEET-TO-SHELL WELD	CIRC	1/0	UT	100%				
C-B	NOZZLE WELDS								
C2.10	NOZZLE, ≤1/2 IN. WALL		0	PT	100%				
C2.20	NOZZLE, >1/2 IN. WALL		2/0	PT	100%				
C-H	ALL PRESSURE RETAINING COMPONENTS								
C7.10	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
C7.11	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT		PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	CONT. SPRAY PUMP #2 TO SHUTDOWN COOLING HEAT EXCHANGER #2									
C-F	PRESSURE RETAINING WELDS, PIPING WELDS									
C2.1	PIPE & FITTINGS	CIRC	28/26	UT	See	100%	9	9	8	100% applicable welds
C2.2	PIPE & FITTINGS	LONG	10/10	UT	Comments	100%	4	3	3	
C2.3	BRANCH PIPE CONNECTION	CIRC LONG	0 0	UT UT		100%				
C3.1	PUMPS PUMP CASING WELDS		0	VOL	ALL	100%				
C4.1	VALVES VALVE BODY WELDS		0	VOL	ALL	100%				
C-F-1	INTEGRAL ATTACHMENTS									
C2.5	PIPING WELDS		9/9	PT	ALL	100%	3	3	3	
C3.3	PUMP WELDS		0	PT	ALL	100%				
C4.3	VALVE WELDS		0	PT	ALL	100%				
C-F-2	SUPPORT COMPONENTS									
C2.6	PIPING		14/14	VIS	ALL	100%	5	5	4	
C3.4	PUMPS		0	VIS	ALL	100%				
C4.4	VALVES		0	VIS	ALL	100%				
C-H	ALL PRESSURE RETAINING COMPONENTS									
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221		ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222				ALL	

CATEGORY / ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	CONT. SPRAY PUMP #2 TO SHUTDOWN COOLING HEAT EXCHANGER #2								
C-A	PRESSURE RETAINING WELDS								
C1.10	SHELL WELDS	CIRC	1/1	UT	ALL 100%	1			
C1.20	HEAD WELDS	CIRC	0	UT	ALL 100%				
C1.30	TUBESHEET-TO-SHELL WELD	CIRC	1/1	UT	ALL 100%	1			
C-B	NOZZLE WELDS								
C2.10	NOZZLE, ≤1/2 IN. WALL		0	PT	ALL 100%				
C2.20	NOZZLE, >1/2 IN. WALL		2/2	PT	ALL 100%	2			
C-H	ALL PRESSURE RETAINING COMPONENTS								
C7.10	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
C7.11	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT		PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	COMBINED SHUTDOWN COOLING HEAT EXCHANGER DISCHARGE TO LPSI HEADER									
C-F	PRESSURE RETAINING WELDS, PIPING WELDS									
C2.1	PIPE & FITTINGS	CIRC	60/56	UT	See	100%	19	19	18	100% applicable welds
C2.2	PIPE & FITTINGS	LONG	23/23	UT	Comments	100%	8	8	7	
C2.3	BRANCH PIPE CONNECTION	CIRC LONG	0 0	UT UT		100%				
	PUMPS									
C3.1	PUMP CASING WELDS		0	VOL	ALL	100%				
	VALVES									
C4.1	VALVE BODY WELDS		0	VOL	ALL	100%				
C-E-1	INTEGRAL ATTACHMENTS									
C2.5	PIPING WELDS		12/12	PT	ALL	100%	4	4	4	
C3.3	PUMP WELDS		0	PT	ALL	100%				
C4.3	VALVE WELDS		0	PT	ALL	100%				
C-E-2	SUPPORT COMPONENTS									
C2.6	PIPING		16/16	VIS	ALL	100%	6	5	5	
C3.4	PUMPS		0	VIS	ALL	100%				
C4.4	VALVES		0	VIS	ALL	100%				
C-H	ALL PRESSURE RETAINING COMPONENTS									
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221		ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222				ALL	

CATEGORY / ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT		PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	SHUTDOWN COOLING HEAT EXCHANGER #1 OUTLET									
C-F	PRESSURE RETAINING WELDS, PIPING WELDS									
C2.1	PIPE & FITTINGS	CIRC	26/24	UT	See	100%	8	8	8	100% applicable welds
C2.2	PIPE & FITTINGS	LONG	10/10	UT	Comments	100%	4	3	3	
C2.3	BRANCH PIPE CONNECTION	CIRC LONG	0 0	UT UT		100%				
C3.1	PUMPS PUMP CASING WELDS		0	VOL	ALL	100%				
C4.1	VALVES VALVE BODY WELDS		0	VOL	ALL	100%				
C-E-1	INTEGRAL ATTACHMENTS									
C2.5	PIPING WELDS		27/27	PT	ALL	100%	9	9	9	
C3.3	PUMP WELDS		0	PT	ALL	100%				
C4.3	VALVE WELDS		0	PT	ALL	100%				
C-E-2	SUPPORT COMPONENTS									
C2.6	PIPING		54/54	VIS	ALL	100%	18	18	18	
C3.4	PUMPS		0	VIS	ALL	100%				
C4.4	VALVES		0	VIS	ALL	100%				
C-H	ALL PRESSURE RETAINING COMPONENTS									
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221		ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222				ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT		PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	SHUTDOWN COOLING HEAT EXCHANGER #2 OUTLET									
C-F	PRESSURE RETAINING WELDS, PIPING WELDS									
C2.1	PIPE & FITTINGS	CIRC	25/22	UT	See	100%	8	7	7	100% applicable welds
C2.2	PIPE & FITTINGS	LONG	9/9	UT	Comments	100%	3	3	3	
C2.3	BRANCH PIPE CONNECTION	CIRC LONG	0 0	UT UT		100%				
	PUMPS									
C3.1	PUMP CASING WELDS		0	VOL	ALL	100%				
	VALVES									
C4.1	VALVE BODY WELDS		0	VOL	ALL	100%				
C-E-1	INTEGRAL ATTACHMENTS									
C2.5	PIPING WELDS		23/23	PT	ALL	100%	8	8	7	
C3.3	PUMP WELDS		0	PT	ALL	100%				
C4.3	VALVE WELDS		0	PT	ALL	100%				
C-E-2	SUPPORT COMPONENTS									
C2.6	PIPING		64/64	VIS	ALL	100%	22	21	21	
C3.4	PUMPS		0	VIS	ALL	100%				
C4.4	VALVES		0	VIS	ALL	100%				
C-H	ALL PRESSURE RETAINING COMPONENTS									
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221		ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222				ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	SPRAY CHEMICAL STORAGE SYSTEM								
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	REGENERATIVE HEAT EXCHANGER								
C-C	INTEGRAL ATTACHMENTS								
C3.10	INTEGRALLY WELDED ATTACHMENTS		12/12	PT	ALL 100%	6	6		
C-F	PRESSURE RETAINING WELDS PIPING WELDS								
C5.20	PIPE >1/2 IN. WALL (t)	CIRC	9/9	UT	ALL 100%	5	4		
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	AMOUNT & EXTENT	PERIOD 1	2	3	COMMENTS
	LETDOWN HEAT EXCHANGER								
C-A	PRESSURE RETAINING WELDS								
C1.10	SHELL WELDS	CIRC	2/2	UT	ALL 100%	2			
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	LETDOWN DELAY MECHANISM								
C-F	PRESSURE RETAINING WELDS, PIPING WELDS								
C2.1	PIPE & FITTINGS	CIRC	3/2	UT	100%	1	1		
C2.2	PIPE & FITTINGS	LONG	0	UT	100%				
C-E-1	INTEGRAL ATTACHMENTS								
C2.5	PIPING WELDS		2/2	PT	ALL 100%	2			
C-E-2	SUPPORT COMPONENTS								
C2.6	PIPING		4/4	VIS	ALL 100%	4			
C-H	ALL PRESSURE RETAINING COMPONENTS								
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM LEAKAGE TEST PER IWG-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222			ALL	

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CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	CHEMICAL AND VOLUME WATER SYSTEM PENETRATION PIPING PORTION								
C-H	PRESSURE RETAINING COMPONENTS BETWEEN CONT. ISOL. VALVES								
	PRESSURE RETAINING COMPONENTS		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	CHEMICAL AND VOLUME CONTROL SYSTEM PENETRATION PIPING PORTION								
C-H	PRESSURE RETAINING COMPONENTS BETWEEN CONT. ISOL. VALVES								
	PRESSURE RETAINING COMPONENTS		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222			ALL	

CATEGORY / ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	NUCLEAR PLANT SAMPLING SYSTEM PENETRATION PIPING PORTION								
C-H	PRESSURE RETAINING COMPONENTS BETWEEN CONT. ISOL. VALVES								
	PRESSURE RETAINING COMPONENTS		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222			ALL	

CATEGORY / ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	FUEL POOL COOLING SYSTEM PENETRATION PIPING PORTION								
C-H	PRESSURE RETAINING COMPONENTS BETWEEN CONT. ISOL. VALVES								
	PRESSURE RETAINING COMPONENTS		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	AUXILIARY BOILER SYSTEM PENETRATION PIPING PORTION								
C-H	PRESSURE RETAINING COMPONENTS BETWEEN CONT. ISOL. VALVES								
	PRESSURE RETAINING COMPONENTS		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222			ALL	

CATEGORY / ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	CONTAINMENT HV AND AC SYSTEM PENETRATION PIPING PORTION								
C-H	PRESSURE RETAINING COMPONENTS BETWEEN CONT. ISOL. VALVES								
	PRESSURE RETAINING COMPONENTS		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO AND PNEUMATIC TEST PER IWC-5222			ALL	

CATEGORY / ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	WASTE GAS SYSTEM PENETRATION PIPING PORTION								
C-H	PRESSURE RETAINING COMPONENTS BETWEEN CONT. ISOL. VALVES								
	PRESSURE RETAINING COMPONENTS		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM PNEUMATIC TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	AMOUNT & EXTENT	PERIOD 1	2	3	COMMENTS
	FIRE PROTECTION SYSTEM PENETRATION PIPING PORTION								
C-H	PRESSURE RETAINING COMPONENTS BETWEEN CONT. ISOL. VALVES								
	PRESSURE RETAINING COMPONENTS		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM HYDRO TEST PER IWC-5222			ALL	

CATEGORY / ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	COMPRESSED AIR SYSTEM PENETRATION PIPING PORTION								
C-H	PRESSURE RETAINING COMPONENTS BETWEEN CONT. ISOL. VALVES								
	PRESSURE RETAINING COMPONENTS		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM PNEUMATIC TEST PER IWC-5222			ALL	

CATEGORY ITEM #	SYSTEM / COMPONENT AREA DESCRIPTION	WELD TYPE	TOTAL/APPLIC. ITEMS	EXAMINATION METHOD	EXAMINATION AMOUNT & EXTENT	PERIOD 1	PERIOD 2	PERIOD 3	COMMENTS
	AUXILIARY GAS SYSTEM PENETRATION PIPING PORTION								
C-H	PRESSURE RETAINING COMPONENTS BETWEEN CONT. ISOL. VALVES								
	PRESSURE RETAINING COMPONENTS		ALL	VIS	SYSTEM LEAKAGE TEST PER IWC-5221	ALL	ALL	ALL	
	PRESSURE RETAINING BOUNDARY		ALL	VIS	SYSTEM PNEUMATIC TEST PER IWC-5222			ALL	

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APPENDIX B

PUMP TESTING SUMMARY

Table 1 provides a listing of Class 2 and 3 pumps which are included in the SONGS-2 ISI program. Test parameters for which measurements will be observed and recorded are listed for each pump. An engineering procedure will implement these requirements.

There are no Class 1 pumps which are required to be tested as part of the Code requirements since the Reactor Coolant Pumps normally operate during plant operation and their performance is continuously monitored.

TABLE 1
ASME - CLASS 1, 2 AND 3 PUMPS (UNIT 2)

REVISION 1 | DATE 2/3/83 |

PUMP NUMBER	PUMP NAME	CL	P&ID AND COORDINATES	TEST PARAMETERS								
				SPEED	INLET PRESS	DIFF PRESS	FLOW RATE	VIBRATION	BEARING TEMP. (NOTE 4)	LUBE LEVEL	TEST FREQUENCY	TEST REMARKS
P012	Containment Spray Pump	2	40114 C-5	NA	YES	YES	NO	YES	YES	YES	QUARTERLY	NOTE 1
P013	Containment Spray Pump	2	40114 E-5	NA	YES	YES	NO	YES	YES	YES	QUARTERLY	NOTE 1
P015	Low Pressure Safety Injection Pump	2	40112 G-5	NA	YES	YES	NO	YES	YES	YES	QUARTERLY	NOTE 1
P016	Low Pressure Safety Injection Pump	2	40112 F-5	NA	YES	YES	NO	YES	YES	YES	QUARTERLY	NOTE 1
P017	High Pressure Safety	2	40112 E-5	NA	YES	YES	YES	YES	YES	YES	QUARTERLY	
P018	High Pressure Safety Injection Pump	2	40112 D-5	NA	YES	YES	YES	YES	YES	YES	QUARTERLY	
P019	High Pressure Safety Injection Pump	2	40112 B-5	NA	YES	YES	YES	YES	YES	YES	QUARTERLY	
P020	Spray Chemical Addition Pump	2	40114 E-7	NA	YES	YES	YES	YES	YES	YES	QUARTERLY	
P021	Spray Chemical Addition Pump	2	40114 F-7	NA	YES	YES	YES	YES	YES	YES	QUARTERLY	
P024	Component Cooling Water Pump	3	40127 G-4	NA	YES	YES	YES	YES	YES	YES	QUARTERLY	
P025	Component Cooling Water Pump	3	40127 E-4	NA	YES	YES	YES	YES	YES	YES	QUARTERLY	
P026	Component Cooling Water Pump	3	40127 D-4	NA	YES	YES	YES	YES	YES	YES	QUARTERLY	
P093	Diesel Fuel Transfer Pump	3	40116 B-2	NA	YES	YES	NO	YES	NO	NO	QUARTERLY	NOTES 1, 2 & 5
P094	Diesel Fuel Transfer Pump	3	40116 B-3	NA	YES	YES	NO	YES	NO	NO	QUARTERLY	NOTES 1, 2 & 5

TABLE 1
ASME - CLASS 1, 2 AND 3 PUMPS (UNIT 2)

REVISION 1 | DATE 2/3/83 |

PUMP NUMBER	PUMP NAME	CL	P&ID AND COORDINATES	TEST PARAMETERS								
				SPEED	INLET PRESS	DIFF PRESS	FLOW RATE	VIBRATION	BEARING TEMP. (NOTE 4)	LUBE LEVEL	TEST FREQUENCY	TEST REMARKS
P095	Diesel Fuel Transfer Pump	3	40116 B-5	NA	YES	YES	NO	YES	NO	NO	QUARTERLY	NOTES 1, 2 & 5
P096	Diesel Fuel Transfer Pump	3	40116 B-6	NA	YES	YES	NO	YES	NO	NO	QUARTERLY	NOTES 1, 2 & 5
P012	Saltwater Cooling Pump	3	40126 G-7	NA	YES	YES	YES	YES	YES	NO	QUARTERLY	NOTE 3 & 5
P013	Saltwater Cooling Pump	3	40126 F-7	NA	YES	YES	YES	YES	YES	NO	QUARTERLY	NOTE 3 & 5
P014	Saltwater Cooling Pump	3	40126 B-7	NA	YES	YES	YES	YES	YES	NO	QUARTERLY	NOTE 3 & 5
P307	Saltwater Cooling Pump	3	40126 D-7	NA	YES	YES	YES	YES	YES	NO	QUARTERLY	NOTE 3 & 5
P140	Auxiliary Feedwater Pump (Steam)	3	40160 E-6	YES	YES	YES	NO	YES	YES	YES	MONTHLY	NOTE 1
P141	Auxiliary Feedwater Pump (Motor)	3	40160 B-6	NA	YES	YES	NO	YES	YES	YES	MONTHLY	NOTE 1
P160	Auxiliary Building Emergency Chilled Water Pump	3	40180 B-6	NA	YES	YES	YES	YES	YES	YES	QUARTERLY	
P162	Auxiliary Building Emergency Chilled Water Pump	3	40179 B-6	NA	YES	YES	YES	YES	YES	YES	QUARTERLY	
P174	Boric Acid Makeup Pump	3	40125 D-5	NA	YES	YES	YES	YES	YES	YES	QUARTERLY	
P175	Boric Acid Makeup Pump	3	40125 C-5	NA	YES	YES	YES	YES	YES	YES	QUARTERLY	
P190	Charging Pump	2	40125 G-2	NA	YES	YES	YES	YES	YES	YES	QUARTERLY	
P191	Charging Pump	2	40125 E-2	NA	YES	YES	YES	YES	YES	YES	QUARTERLY	
P192	Charging Pump	2	40125 D-2	NA	YES	YES	YES	YES	YES	YES	QUARTERLY	
P504	Auxiliary Feedwater Pump (Motor)	3	40160 G-6	NA	YES	YES	NO	YES	YES	YES	MONTHLY	NOTE 1

TABLE 1

PUMP INSERVICE TESTING PROGRAM

NOTES AND CLARIFYING REMARKS

YES — Indicates quantity can be measured or observed.

NO — Indicates quantity not available for measurement or not needed.

NOTES

Note 1 — The LPSI, Diesel Fuel Transfer, Containment Spray and Auxiliary Feedwater pumps have test paths that are "FIXED RESISTANT LOOPS", therefore, flow rate does not have to be determined since differential pressure can be.

Note 2 — The Diesel Fuel Transfer Pumps are submergence type pumps located inside concrete vaults and are not accessible. Therefore, it is not possible to measure thrust bearing temperature. In addition, vibration pickups are permanently mounted on the driver. Submergence of pump precludes direct monitoring of pump bearing.

Note 3 — The Saltwater Cooling Pumps are of the vertical turbine type with submerged inaccessible pump bearings. To help detect bearing wear, thrust bearing temperature and vibration measurements will be taken. The Saltwater Cooling Pump seals and bearings are cooled and lubricated by the Domestic Water System. Therefore, water flow to the bearings will be indicated.

Note 4 — There is no installed instrumentation to allow measurement of bearing temperature. Therefore, a surface pyrometer is used on the bearing casing to measure this parameter.

Note 5 — Inlet pressure is calculated for this pump.

PUMP RELIEF REQUEST NO. 1

SYSTEM: Safety Related Systems.

COMPONENT: All pumps in the program.

CLASS: Class 2 and 3

FUNCTION: To provide flow to safety systems.

TEST REQUIREMENT: The requirements of IWP-3230 (b), Required Action.

BASIS FOR RELIEF: Relief is requested from the requirements of IWP 3230 (b) regarding declaring the pump inoperative prior to an analysis of test results.

There are many causes, external of a pump, which can cause deviations from a reference value. Some causes are: changes in fluid density, buss voltage variations, vibration increases caused by other machines in the area of the pump, and test instruments drifting out of calibration. Some means should be allowed for conducting an analysis prior to determining a pump's operability. The analysis should demonstrate that the pump can still perform its intended function.

ALTERNATE TESTING: All test data shall be analyzed, and pump operability status declared within 96 hours after completion of a test. If a deviation in the test parameters fall within the "Required Action Range," pump operability and corrective action will be based on an analysis determining the cause of the deviation(s). If the cause is determined to be external of the pump, the condition shall be analyzed and accounted for. Where it is determined that instrument calibration is required, this will be performed and the test rerun. If the retest and/or further analysis indicates the pump cannot perform its intended function, the pump will be declared inoperable.

PUMP RELIEF REQUEST NO. 2

(Deleted)

PUMP RELIEF REQUEST NO. 3

SYSTEM:	Diesel Fuel Transfer; Saltwater Cooling
COMPONENT:	Pumps P093, P094, P095, P096, P112, P113, P114, P307
CLASS:	Class 3
FUNCTION:	To provide makeup fuel to diesel generator day tank; to provide cooling to CCW heat exchanger.
TEST REQUIREMENT:	Measure pump bearing temperature per Sub-Article IWP-3100.
BASIS FOR RELIEF:	Relief is requested from the requirement to measure pump bearing temperature for these submerged pumps. The pump bearings are submerged and not accessible.
ALTERNATE TESTING:	None.
NOTE:	Pump Relief Request No. 2 has been deleted.

PUMP RELIEF REQUEST NO. 4

SYSTEM:	Safety Related Systems
COMPONENT:	All pumps in the program
CLASS:	Class 2 and 3
FUNCTION:	To provide flow to safety systems
TEST REQUIREMENT:	An inservice test shall be run on each pump nominally each month during normal plant operation.
BASIS FOR RELIEF:	Relief is requested from the requirements of Sub-Article IWP-2300(a) regarding monthly testing of each pump. The experience of the industry has shown that the statistical failure rate of these pumps is such that monthly surveillance testing is not justified. The statistics do, however, justify testing on a quarterly basis. Later editions on the Code allow surveillance testing on a quarterly basis.
ALTERNATE TESTING:	Inservice testing shall be accomplished on each pump at least once every 3 months. The exception to this will be the Auxiliary Feedwater pumps which will be tested monthly per Technical Specification requirements.

PUMP RELIEF REQUEST NO. 5

SYSTEM:	Low Pressure Safety Injection, Containment Spray, Diesel Fuel Transfer; Auxiliary Feedwater
COMPONENT:	Pumps P015, P016, P012, P013, P093, P094, P095, 096, P140, P141, P504
CLASS:	Class 2 and 3
FUNCTION:	To provide low pressure borated water to the reactor coolant system; to provide borated water to the containment spray header; to provide makeup fuel to diesel generator day tank; to provide feedwater to steam generator during plant startup and shutdown.
TEST REQUIREMENT:	ASME Section XI requires flow rate to be measured in Table IWP-3100-1 of the code. The pumps referenced in this relief request use a test loop which is a fixed resistance system; therefore, only differential pump head will be measured.
BASIS FOR RELIEF:	Flow instrumentation is not currently installed in the test loops of these systems. Since the piping test loops are fixed resistance piping systems the pumps are being tested under the same conditions during each inservice test. Therefore, the intent of IWP-3000 is being met, test results are comparable to reference tests.
ALTERNATE TESTING:	None

PUMP RELIEF REQUEST NO. 6

System: Containment Spray; Charging; Diesel Fuel Transfer; Auxiliary Feedwater; Component Cooling Water; Saltwater Cooling; Spray Chemical Addition; Boric Acid Makeup

Component: P012, P013, P190, P191, P192, P092, P094, P095, P096, P140, P141, P504, P024, P025, P026, P012, P013, P014, P307, P020, P021, P174, P175

Class: Class 2 and 3

Function: To provide flow to safety systems.

Test Requirement: The full scale range of each instrument shall be three times the reference value or less per IWP-4120.

Basis for Relief: Relief is requested from the full scale range requirements of IWP-4120 for Containment Spray pump suction pressure, Charging pump discharge pressure, suction pressure and flow, Diesel Fuel Transfer pump discharge pressure, Spray Chemical Addition pump suction pressure, Auxiliary Feedwater pump suction pressure, Boric Acid Makeup pump discharge pressure and suction pressure, Component Cooling Water pump suction pressure, and Saltwater Cooling pump discharge pressure.

The combined requirements of IWP-4110 (accuracy within ±2 percent of full scale for pressure and flow) and IWP-4120 (Full scale less than or equal to three times the reference value) are for a measurement accuracy within ± 6 percent of the reference value. The station instruments for discharge pressure in the Diesel Fuel Transfer, Component Cooling Water and Saltwater Cooling system, and for suction pressure in the Containment Spray, Charging and Auxiliary Feedwater systems meet the combined requirement for measurement accuracy within ±6 percent of the respective reference values although they exceed the IWP-4120 range limit alone.

The Station instrument for charging pump discharge pressure meets the IWP-4120 range limit when the plant is operating (system backpressure of 2,250 psia from the Reactor Coolant System), but not when the charging pump is required to be operable for boration following plant shutdown (system backpressure 376 psia or less). In addition, the Station instrument for charging pump flow is sized to measure combined flow from all three pumps without over-ranging (0 - 150 gpm), and thereby slightly exceeds the IWP-4120 range limit. Unnecessary radiation exposure to install local test gauges on these pumps can be avoided by using the existing Station instruments.

The Station instruments for Spray Chemical Addition pump suction pressure, and Boric Acid Makeup pump suction and discharge pressure exceed the IWP-4120 range limit but only slightly exceed the combined IWP-4110 and IWP-4120 accuracy. Since these two systems contain hot, concentrated caustic and hot, concentrated acid, unnecessary personnel hazard to install local test gauges on the pumps can be avoided using the existing Station instruments.

Alternate Testing: Perform IWP tests with Station instruments for the pump parameters discussed above.

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APPENDIX C

VALVE TESTING SUMMARY

Table 1 provides a summary of Class 1, 2 and 3 valves which are included in the SONGS -2 ISI program. Applicable valve categories, valve descriptive information, position indication requirements, and test requirements are listed for each valve. An engineering procedure will implement valve inspection and test requirements.

INSERVICE VALVE TESTING

TABLE INFORMATION

A. Valve Number lists the valve identification number as shown on the P&ID.

B. P&ID and Coordinates references the P&ID on which the valve appears and its coordinates.

C. Class is the ASME classification of the valves.

D. Valve Category indicates the catagory assigned to the valve based on the definitions of IWV-2000. Where a valve is normally exempt from the testing per IWV-1200, and is in the direct flow path of the system, this valve is categorized B passive.

E. Valve size lists the nominal pipe size of the valve in inches.

F. Valve type lists the valve design as indicated by the following abbreviations:

GATE	GA
GLOBE	GL
CHECK	CK
SAFETY	SV
RELIEF	RV
BUTTERFLY	BTF
STOP CHECK	SCK
BALL	BALL
SPLIT DISC CHECK	SDCK

G. Actuator type lists the type of the valve actuator as indicated by the following abbreviations:

MOTOR OPERATOR	MO
AIR OPERATOR	AO
SOLENOID OPERATOR	SO
HYDRAULIC OPERATOR	HY
SELF ACTUATED	SA
MANUAL	M

H. Valve position indicates the normal position of the valve during plant operation; either normally open (O) or normally closed (C).

I. Stroke direction indicates the direction which an active valve must stroke to perform its safety function. Also, the direction in which the valve will be stroked to satisfy the exercising requirements of IWV-3410 or IWV-3520. This may be specified as open (O), closed (C), or both (O&C).

J. Test lists the test or tests that will be performed for each valve to fulfill the requirements of Subsection IWV. The following tests and abbreviations are used:

Seat Leak Test — AT

Valve will be seat leak tested at the appropriate functional differential pressure.

Full Stroke Exercise Test — BT

Valve will be full stroke exercised for operability in the direction necessary to fulfill its safety function.

Partial Exercise Test — BTP

Valve will be part-stroke exercised when full stroke exercising is impractical.

Check Valve Exercise Test — CVT

Check valve will be exercised to the position required to fulfill its function. This functional test will be verified by the operation of the required system.

Check Valve Partial Exercise Test — CVP

Check valve will be part stroke exercised, (i.e., disc moves away from seat) when full stroke exercising is impractical.

Fail Safe Test — FST

All valves with fail safe actuators will be tested to verify proper fail safe operation upon loss of actuator power.

Position Indication Check — PIT

All valves with remote position indicators will be checked to verify that remote valve indications accurately reflect valve position.

Relief Valve Set Point Check — RVT

Relief and safety valve set points will be verified in accordance with IWV-3510.

K. Test Mode indicates the frequency at which the above mentioned tests will be performed. The following abbreviations are used:

Cold Shutdown CS

Valve testing at cold shutdown is valve testing which commences not later than forty-eight (48) hours after cold shutdown and continues until required testing is completed or plant is ready to return to service. Completion of all required valve testing is not a requisite to plant startup. Valve testing which is not completed during a cold shutdown will be performed during subsequent cold shutdowns to meet the Code specified testing requirements. No valve will be tested more often than once every 90 days.

NOTE: For planned cold shutdowns, where testing of all the valves identified in the IST program for testing in the cold shutdown mode will be completed, exceptions to the 48 hours may be taken.

Normal Operation OP

Valve tests with this designation will be performed once every three months.

Reactor Refueling RR

Valve tests with this designation will be conducted at reactor refueling outages only.

L. Max Stroke Time lists the maximum allowed full-stroke time in seconds for valves requiring test.

M. Relief Request references the relief request contained in Appendix E of Reference 2.3 that applies to a specific valve(s). Also, included in Appendix E are generic relief requests that are not specifically referenced in this column of the table, but apply to the valve program in general.

N. Remarks lists clarification remarks.

O. Operational modes as defined by the technical specifications are as follows:

Mode	Reactivity Condition, Keff	% of Rated Thermal Power*	Average Coolant Temperature
1 - Power Operation	$\geq$ 0.99	> 5%	$\geq$ 350°F
2 - Startup	$\geq$ 0.99	$\leq$ 5%	$\geq$ 350°F
3 - Hot Standby	< 0.99	0	$\geq$ 350°F
4 - Hot Shutdown	< 0.99	0	350°F>$T_{ave.}$>200°F
5 - Cold Shutdown	< 0.99	0	$\leq$ 200°F
6 - Refueling **	$\leq$ 0.95	0	$\leq$ 140°F

* Exluding Decay Heat

** Fuel in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed.

INSERVICE TESTING PROGRAM
ASME-CLASS 1, 2 & 3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 AND 3

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS

EXPLANATION OF ABBREVIATIONS

GA		GATE
GL		GLOBE
CK		CHECK
SCK		STOP CHECK
SDCK		SPLIT DISC CHECK
SV		SAFETY
RV		RELIEF
BTF		BUTTERFLY
BALL		BALL
	SO	SOLENOID
	AO	AIR OPERATED
	SA	SELF ACTUATED

INSERVICE TESTING PROGRAM
ASME-CLASS 1, 2 & 3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 AND 3

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS

EXPLANATION OF ABBREVIATIONS (Continued)

HY	HYDRAULIC
MO	MOTOR OPERATED
M	MANUAL
AT	SEAT LEAK TEST
BT	FULL STOKE EXERCISE TEST
BTP	PARTIAL STROKE EXERCISE TEST
CVT	CHECK VALVE EXERCISE TEST
CVP	PARTIAL CHECK VALVE EXERCISE TEST
RVT	SAFETY OR RELIEF VALVE TEST
PIT	POSITION INDICATION CHECK
FST	FAIL SAFE TEST

INSERVICE TESTING PROGRAM
ASME-CLASS 1, 2 & 3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 AND 3

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS

EXPLANATION OF ABBREVIATIONS (Continued)

CS	COLD SHUTDOWN
RR	REACTOR REFUELING
OP	NORMAL OPERATION
VRR	VALVE RELIEF REQUEST

INSERVICE TESTING PROGRAM
ASME-CLASS 1, 2 & 3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 AND 3

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS

EXPLANATION OF NOTES

NOTES:

1. This valve will be disassembled and hand stroked during refueling outages.
2. This valve is a pressure relief valve and will be tested at the frequency stated in IWV-3511.
3. The maximum stroke time associated with this valve is a protected value and cannot be changed without a revision to the final safety analysis or the technical specifications.
4. The maximum stroke time associated with this valve is an assigned value in pursuant to IWV-3413. This stroke time is not a protected value and may be changed with approval of the station technical manager.
5. This valve cannot be partially stroke exercised during plant operation.
6. All motor operated valves fail as is and therefore do not require a fail safe test per IWV-3415.
7. This valve is exercised during normal operation and therefore does not require a separate test.
8. This valve is tested when the containment spray system is tested per Technical Specification.
9. This valve is a type "A" passive valve and will only receive a seat leakage test.
10. The seat leakage test for this valve will be performed in accordance with 10 CFR 50 Appedix J requirements.
11. This valve is within a non-safety related system, however, it is used for containment isolation and therefore will receive a seat leakage test in accordance with 10CFR50 Appendix J requirements.
12. This valve shall be full stroke exercised and timed in both the open and closed directions.
13. This valve shall be timed in only one direction. This direction will be dictated by its safety-related position or the direction the ESFAS actuates this valve.
14. This valve shall be full stroked open every three months during operation. A reverse flow check during reactor refueling outages will be made by unbolting the valve bonnet and visually verifying that the disc is in the closed position.
15. This valve is a pressure relief valve and will be tested at the frequency stated in the Technical Specifications.

UNIT 2

SYSTEM VALVE LIST

INSERVICE TESTING PROGRAM
ASME-CLASS 1, 2 & 3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT 2

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS
REACTOR COOLANT SYSTEM		P & ID # 40111											
PSV-200	H-6	1	C	6"	SV	SA	C	O	RVT	--			Note 2
PSV-201	H-6	1	C	6"	SV	SA	C	O	RVT	--			Note 2
3-152-A-551	C-5	1	AC	3"	CK	SA	C	O	CVT AT	CS RR		*	

INSERVICE TESTING PROGRAM
ASME-CLASS 1, 2 & 3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT 2

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS
SAFETY INJECTION	P & ID # 40112												
FV-0306	F-2	2	B	12"	BALL	M	O	O	BT	CS		*	
HV-8152	F-3	2	B	12"	GA	MO	C	O&C	BT PIT	CS RR	180	*	Notes 4, 6 & 12
HV-8153	F-3	2	B	12"	GA	MO	C	O&C	BT PIT	CS RR	180	*	Notes 4, 6 & 12
HV-9302	B-6	2	B	24"	BTF	MO	C	O	BT PIT	OP RR	40		Notes 3 & 6
HV-9303	B-6	2	B	24"	BTF	MO	C	O	BT PIT	OP RR	40		Notes 3 & 6
2-034-C-329	E-4	2	C	2"	SCK	SA	C	O	CVT	OP			
2-035-C-329	E-4	2	C	2"	SCK	SA	C	O	CVT	OP			
2-036-C-329	E-3	2	C	2"	SCK	SA	C	O	CVT	OP			
2-037-C-329	G-4	2	C	2"	SCK	SA	C	O	CVT	OP			
2-063-C-329	F-4	2	C	2"	SCK	SA	C	O	CVT	OP			
2-104-C-329	F-3	2	C	2"	SCK	SA	C	O	CVT	OP			
3-155-C-551	D-1	2	C	3"	CK	SA	C	O	CVT	CS		*	Note 5
4-012-C-358	E-3	2	C	4"	SCK	SA	C	O	CVT	CS		*	Note 5
4-015-C-358	B-3	2	C	4"	SCK	SA	C	O	CVT	CS		*	Note 5

* SEE ATTACHMENT 8.3

INSERVICE TESTING PROGRAM
ASME-CLASS 1, 2 & 3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT 2

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS
SAFETY INJECTION	P & ID # 40112	(Continued)											
4-016-C-358	D-3	2	C	4"	SCK	SA	C	O	CVT	CS		*	Note 5
4-017-C-553	B-3	2	C	4"	CK	SA	C	O	CVT	CS		*	Note 5
10-006-C-675	E-6	2	C	10"	CK	SA	C	O	CVP CVT	OP RR		VRR-8	
10-008-C-675	B-7	2	C	10"	CK	SA	C	O	CVP CVT	OP RR		VRR-8	
10-024-C-406	G-3	2	C	10"	SCK	SA	C	O	CVT	CS		*	Note 5
10-025-C-406	F-3	2	C	10"	SCK	SA	C	O	CVT	CS		*	Note 5
14-015-C-173	G-6	2	B	14"	GA	M	C	O	BT PIT	CS RR		*	
14-018-C-173	F-6	2	B	14"	GA	M	C	O	BT PIT	CS RR		*	
16-022-C-173	G-6	2	B	16"	GA	M	O	C	BT PIT	CS RR		*	
16-023-C-173	F-6	2	B	16"	GA	M	O	C	BT PIT	CS RR		*	

INSERVICE TESTING PROGRAM
ASME-CLASS 1, 2 & 3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT 2

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS
SAFETY INJECTION	P & ID # 40112 (Continued)												
16-077-C-645	F-7	2	C	16"	CK	SA	C	O&C	CVT CVP	RR OP		VRR-12	
16-084-C-645	G-6	2	C	16"	CK	SA	C	O&C	CVT CVP	RR OP		VRR-12	
16-199-C-645	G-7	2	C	16"	CK	SA	C	O&C	CVT CVP	RR OP		VRR-12	
16-201-C-645	F-7	2	C	16"	CK	SA	C	O&C	CVT CVP	RR OP		VRR-12	
24-001-C-724	D-8	2	C	24"	SDCK	SA	C	O&C	CVT CVP	RR OP		VRR-2	Note 1
24-002-C-724	D-8	2	C	24"	SDCK	SA	C	O&C	CVT CVP	RR OP		VRR-2	Note 1
24-003-C-724	B-7	2	C	24"	SDCK	SA	C	O	CVT	RR		VRR-3	Notes 1 & 5
24-004-C-724	B-7	2	C	24"	SDCK	SA	C	O	CVT	RR		VRR-3	Notes 1 & 5
SAFETY INJECTION	P & ID # 40113												
HV-9322	H-7	2	B	8"	GL	MO	C	O	BT PIT	OP RR	30		Notes 3 & 6
HV-9323	G-7	2	B	2"	GL	MO	C	O	BT PIT	OP RR	15		Notes 3 & 6
HV-9324	F-7	2	B	2"	GL	MO	C	O	BT PIT	OP RR	15		Notes 3 & 6
HV-9325	F-7	2	B	8"	GL	MO	C	O	BT PIT	OP RR	30		Notes 3 & 6
HV-9326	E-7	2	B	2"	GL	MO	C	O	BT PIT	OP RR	15		Notes 3 & 6
HV-9327	E-7	2	B	2"	GL	MO	C	O	BT PIT	OP RR	15		Notes 3 & 6
HV-9328	D-7	2	B	8"	GL	MO	C	O	BT PIT	OP RR	30		Notes 3 & 6
HV-9329	C-7	2	B	2"	GL	MO	C	O	BT PIT	OP RR	15		Notes 3 & 6

INSERVICE TESTING PROGRAM
ASME-CLASS 1, 2 & 3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT 2

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS
SAFETY INJECTION	P & ID # 40113	(Continued)											
HV-9330	C-7	2	B	2"	GL	MO	C	O	BT PIT	OP RR	15		Notes 3 & 6
HV-9331	B-7	2	B	8"	GL	MO	C	O	BT PIT	OP RR	30		Notes 3 & 6
HV-9332	B-7	2	B	2"	GL	MO	C	O	BT PIT	OP RR	15		Notes 3 & 6
HV-9333	A-7	2	B	2"	GL	MO	C	O	BT PIT	OP RR	15		Notes 3 & 6
HV-9334	E-6	2	A	2"	GL	MO	C	C	AT PIT BT	RR RR OP	40		Notes 3, 10, & 11
HV-9336	E-6	2	B	16"	GA	MO	O&C	O&C	BT PIT	OP RR	160		Notes 4, & 6
HV-9337	E-4	1	A	16"	GA	MO	O&C	O&C	BT PIT AT	CS RR RR	160	*	Notes 4, 5 & 6
HV-9339	E-3	1	A	16"	GA	MO	O&C	O&C	BT PIT AT	CS RR RR	160	*	Notes 4, 5 & 6
HV-9340	F-5	1	B	12"	GA	MO	O	O	BT PIT	CS RR	60	*	Notes 4, 5 & 6
HV-9345	G-5	2	B	1"	GL	SO	C	O	FST BT PIT	CS CS RR	1	*	Notes 4 & 5
HV-9350	F-2	1	B	12"	GA	MO	O	O	BT PIT	CS RR	60	*	Notes 4, 5 & 6
HV-9355	G-1	2	B	1"	GL	SO	C	O	FST BT PIT	CS CS RR	1	*	Notes 4 & 5

INSERVICE TESTING PROGRAM
ASME-CLASS 1, 2 & 3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT 2

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS
SAFETY INJECTION	P & ID # 40113	(Continued)											
HV-9360	B-5	1	B	12"	GA	MO	O	O	BT PIT	CS RR	60	*	Notes 4, 5 & 6
HV-9365	D-5	2	B	1"	GL	SO	C	O	FST BT PIT	CS CS RR	1	*	Notes 4, & 5
HV-9370	B-2	1	B	12"	GA	MO	O	O	BT PIT	CS RR	60	*	Notes 4, 5 & 6
HV-9375	C-1	1	B	1"	GL	SO	C	O	FST BT PIT	CS CS RR	1	*	Notes 4, & 5
HV-9377	D-4	1	A	10"	GA	MO	O&C	O&C	AT BT PIT	RR CS RR	360	*	Notes 4, 5, & 6
HV-9378	D-3	1	A	10"	GA	MO	O&C	O&C	BT PIT AT	CS RR RR	360	*	Notes 4, 5 & 6
HV-9379	D-6	2	B	12"	GA	MO	O&C	O&C	BT PIT	OP RR	20		Notes 4, & 6
PSV-9349	E-5	2	C	8"	RV	SA	C	O	RVT	--			Note 15
2-099-C-334	E-7	2	A	2"	GL	M	C	C	AT	RR			Notes 9, 10 & 11
3-018-A-551	G-6	1	AC	3"	CK	SA	C	O	CVT AT	CS RR		*	Note 5
3-019-A-551	E-6	1	AC	3"	CK	SA	C	O	CVT AT	CS RR		*	Note 5
3-020-A-551	C-6	1	AC	3"	CK	SA	C	O	CVT AT	CS RR		*	Note 5
3-021-A-551	A-6	1	AC	3"	CK	SA	C	O	CVT AT	CS RR		*	Note 5

INSERVICE TESTING PROGRAM
ASME-CLASS 1, 2 & 3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT 2

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS
SAFETY INJECTION	P & ID # 40113	(Continued)											
3-156-A-551	D-3	1	AC	3"	CK	SA	C	O	CVT AT	CS RR		*	Note 5
8-072-A-552	G-6	1	AC	8"	CK	SA	C	O	CVT AT	CS RR		*	Note 5
8-073-A-552	F-6	1	AC	8"	CK	SA	C	O	CVT AT	CS RR		*	Note 5
8-074-A-552	D-6	1	AC	8"	CK	SA	C	O	CVT AT	CS RR		*	Note 5
8-075-A-552	B-6	1	AC	8"	CK	SA	C	O	CVT AT	CS RR		*	Note 5
12-027-A-551	F-4	1	AC	12"	CK	SA	C	O	CVT AT	CS RR		*	Note 5
12-029-A-551	F-1	1	AC	12"	CK	SA	C	O	CVT AT	CS RR		*	Note 5
12-031-A-551	A-4	1	AC	12"	CK	SA	C	O	CVT AT	CS RR		*	Note 5
12-033-A-551	B-2	1	AC	12"	CK	SA	C	O	CVT AT	CS RR		*	Note 5
12-040-A-551	F-5	1	AC	12"	CK	SA	C	O	CVT CVP AT	RR CS RR		VRR-II	Note 1, 5
12-041-A-551	F-2	1	AC	12"	CK	SA	C	O	CVT CVP AT	RR CS RR		VRR-II	Note 1, 5
12-042-A-551	B-5	1	AC	12"	CK	SA	C	O	CVT CVP AT	RR CS RR		VRR-II	Note 1, 5
12-043-A-551	B-2	1	AC	12"	CK	SA	C	O	CVT CVP AT	RR CS RR		VRR-II	Note 1, 5

INSERVICE TESTING PROGRAM
ASME-CLASS 1, 2 & 3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT 2

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS
CONTAINMENT SPRAY	P & ID # 40114												
FV-0318	E-6	2	B	2"	GL	E/H	C	O	BT PIT	OP RR	10		Notes 4 & 6
FV-0328	F-6	2	B	2"	GL	E/H	C	O	BT PIT	OP RR	10		Notes 4 & 6
HV8150	D-2	2	B	12"	GA	MO	C	O&C	BT PIT	CS RR	180	*	Notes 4, 6 & 12
HV8151	D-2	2	B	12"	GA	MO	C	O&C	BT PIT	CS RR	180	*	Notes 4, 6 & 12
HV-9306	F-4	2	B	4"	GA	MO	O	C	BT PIT	OP RR	40		Notes 3 & 6
HV-9307	E-4	2	B	4"	GA	MO	O	C	BT PIT	OP RR	40		Notes 3 & 6
HV-9347	F-5	2	B	4"	GA	MO	O	C	BT PIT	OP RR	40		Notes 3 & 6
HV-9348	E-5	2	B	4"	GA	MO	O	C	BT PIT	OP RR	40		Notes 3 & 6
HV-9367	C-2	2	A	8"	GA	MO	C	O	AT BT PIT	RR OP RR	10		Notes 3, 6 & 10
HV-9368	E-2	2	A	8"	GA	MO	C	O	AT BT PIT	RR OP RR	10		Notes 3, 6 & 10
HV-9398	F-6	2	B	2"	GL	SO	C	O	FST BT PIT	CS CS RR	5	*	Note 4
HV-9399	E-6	2	B	2"	GL	SO	C	O	FST BT PIT	CS CS RR	5	*	Note 4
HV-9420	B-7	2	A	3"	GL	MO	C	O	AT BT PIT	RR CS RR	20	*	Notes 4, 6 & 10
HV-9434	C-7	2	A	3"	GL	MO	C	O	AT BT PIT	RR CS RR	20	*	Notes 4, 6 & 10

INSERVICE TESTING PROGRAM
ASME-CLASS 1, 2 & 3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT 2

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS
CONTAINMENT SPRAY	P & ID # 40114 (Continued)												
2-010-C-329	D-5	2	C	2"	SCK	SA	C	O	CVT	OP			
2-011-C-329	D-5	2	C	2"	SCK	SA	C	O	CVT	OP			
2-051-C-611	F-7	2	C	2"	CK	SA	C	O	CVT	OP			
2-053-C-611	E-7	2	C	2"	CK	SA	C	O	CVT	OP			
2-054-C-611	F-7	2	C	2"	CK	SA	C	O	CVT	OP			
2-069-C-611	G-7	2	C	2"	CK	SA	C	O	CVT	OP			
2-159-C-611	4-7	2	C	2"	CK	SA	C	O	CVT	RR		VRR-17	Notes 1 & 5
3-157-A-550	C-7	1	AC	3"	CK	SA	C	O	AT CVT	RR CS		*	Notes 5 & 10
3-158-A-550	B-7	1	AC	3"	CK	SA	C	O	AT CVT	RR CS		*	Notes 5 & 10
8-004-C-406	C-1	2	AC	8"	SCK	SA	C	O	AT CVT	RR RR		VRR-13	Notes 1 5, 8 & 10
8-006-C-406	E-1	2	AC	8"	SCK	SA	C	O	AT CVT	RR RR		VRR-13	Notes 1 5, 8 & 10
8-012-C-406	C-5	2	C	8"	SCK	SA	C	O&C	CVT	CS		*	Note 5
8-014-C-406	E-5	2	C	8"	SCK	SA	C	O&C	CVT	CS		*	Note 5
16-087-C-675	E-7	2	C	16"	CK	SA	C	O	CVT	CS		*	Note 5
16-088-C-675	E-7	2	C	16"	CK	SA	C	O	CVT	CS		*	Note 5

INSERVICE TESTING PROGRAM
ASME-CLASS 1, 2 & 3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT 2

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS
DIESEL GENERATOR FUEL STORAGE P & ID # 40116													
2-039-D-627	C-6	3	C	2"	CK	SA	C	O	CVT	OP			
2-048-D-627	C-6	3	C	2"	CK	SA	C	O	CVT	OP			
2-054-D-627	C-3	3	C	2"	CK	SA	C	O	CVT	OP			
2-063-D-627	C-4	3	C	2"	CK	SA	C	O	CVT	OP			
SUMPS & DRAINS P & ID # 40117													
HV-5803	B-2	2	A	3"	GA	MO	O	C	AT BT PIT	RR OP RR	40		Notes 3, 5, 6, 10, & 11
HV-5804	B-2	2	A	3"	GA	AO	O	C	AT BT PIT FST	RR OP RR RR	40		Notes 3, 5, 10 & 11
FUEL POOL COOLING P & ID # 40122													
10-100-C-212	E-3	2	A	10"	GA	M	C	C	AT	RR			Notes 9, 10 & 11
10-101-C-212	E-4	2	A	10"	GA	M	C	C	AT	RR			Notes 9, 10 & 11
CHEMICAL & VOLUME CONTROL P & ID # 40123													
HV-9200	B-5	2	A	2"	GL	AO	O	O&C	AT BT FST PIT	RR CS CS RR	40	*	Notes 4, 5 & 10
HV-9201	C-7	1	B	2"	GA	MO	C	O&C	BT PIT	CS RR	40	*	Notes 4, 5, 6 & 12
HV-9202	B-7	1	B	2"	GA	MO	O	O&C	PIT BT	RR OP	40		Note 4, 6 & 12
HV-9203	B-7	1	B	2"	GA	MO	O	O&C	PIT BT	RR OP	40		Note 4, 6 & 12

INSERVICE TESTING PROGRAM
ASME-CLASS 1, 2 & 3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT 2

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS
CHEMICAL & VOLUME CONTROL P & ID # 40123 (Continued)													
HV-9204	D-7	1	B	2"	GA	AO	O	C	FST BT PIT	CS CS RR	30	*	Notes 4 & 5
HV-9205	E-6	2	A	2"	GL	AO	O	C	AT FST BT PIT	RR CS CS RR	40	*	Notes 3, 5 & 10
TV-0221	D-7	1	B	2"	GL	AO	O	C	FST BT PIT	CS CS RR	5	*	Notes 4 & 5
TV-9267	D-6	2	A	2"	GA	MO	O	C	AT BT PIT	RR CS RR	40	*	Notes 3, 5, 6 & 10
2-019-A-554	C-7	1	C	2"	CK	SA	C	O	CVT	CS		*	Note 5
2-020-A-554	C-7	1	C	2"	CK	SA	C	O	CVT	OP			
2-021-A-554	B-7	1	C	2"	CK	SA	C	O	CVT	OP			
2-122-A-554	B-6	2	AC	2"	CK	SA	C	O&C	AT CVT	RR OP		VRR-14	Note 10
2-129-A-554	A-6	1	AC	2"	CK	SA	C	O	CVT AT	CS RR		*	Note 10
2-130-C-334	A-5	2	A	2"	GL	M	C	O&C	BT AT PIT	CS RR RR		*	Note 10

INSERVICE TESTING PROGRAM
ASME-CLASS 1, 2 & 3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT 2

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS
CHEMICAL & VOLUME CONTROL P & ID # 40124													
HV-9217	G-5	2	A	3/4"	GL	MO	O	C	AT BT PIT	RR CS RR	40	*	Notes 3 5, 6 & 10
HV-9218	G-5	2	A	3/4"	GL	MO	O	C	AT FST BT PIT	RR CS CS RR	40	*	Notes 3, 5, & 10
LV-0227B	D-7	2	B	4"	GA	MO	O	C	BT PIT	CS RR	20	*	Notes 4, 5 & 6
LV-0227C	C-5	2	B	4"	GA	MO	C	O	BT PIT	CS RR	20	*	Notes 4, 5 & 6
2-017-C-554	D-2	2	C	2"	CK	SA	C	O	CVT	OP			
2-067-C-554	G-2	2	C	2"	CK	SA	C	O	CVT	OP			
2-069-C-554	E-2	2	C	2"	CK	SA	C	O	CVT	OP			
3-082-C-675	G-3	2	C	3"	CK	SA	C	O	CVT	CS		*	Note 5
3-083-C-675	F-3	2	C	3"	CK	SA	C	O	CVT	CS		*	Note 5
4-015-C-675	D-6	2	C	4"	CK	SA	O	C	CVT	CS		*	
6-052-C-675	D-3	2	C	6"	CK	SA	C	O	CVT	CS		*	Note 5
CHEMICAL & VOLUME CONTROL P & ID # 40125													
FV-9253	F-2	3	B	3"	GL	AO	C	C	FST PIT BT	OP RR OP	5		Note 4
HV-9231	E-8	3	B	2"	GL	AO	C	C	FST BT PIT	OP OP RR	5		Note 4
HV-9236	F-4	3	B	2"	GL	AO	C	C	FST BT PIT	OP OP RR	5		Note 4

INSERVICE TESTING PROGRAM
ASME-CLASS 1, 2 & 3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT 2

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS
CHEMICAL & VOLUME CONTROL P & ID # 40125 (Continued)													
HV-9235	D-6	3	B	3"	GA	MO	C	O	BT PIT	CS RR	20	*	Notes 4, 5 & 6
HV-9240	D-5	3	B	3"	GA	MO	C	O	BT PIT	CS RR	20	*	Notes 4, 5 & 6
HV-9247	E-3	3	B	3"	GA	MO	C	O	BT PIT	CS RR	20	*	Notes 4, 5 & 6
3-033-D-675	C-4	3	C	3"	CK	SA	C	O	CVT	CS		*	
3-035-D-675	D-4	3	C	3"	CK	SA	C	O	CVT	CS		*	
3-046-Y-675	F-3	-	C	3"	CK	SA	C	C	CVT	OP			
COMPONENT COOLING WATER P & ID # 40126													
HV-6200	G-6	3	B	30"	BTF	AO	O&C	O	FST BT PIT	OP OP RR	20		Note 4
HV-6201	F-6	3	B	30"	BTF	AO	O&C	O	FST BT PIT	OP OP RR	20		Note 4
HV-6202	D-6	3	B	30"	BTF	AO	O&C	O	FST BT PIT	OP OP RR	20		Note 4
HV-6203	C-6	3	B	30"	BTF	AO	O&C	O	FST BT PIT	OP OP RR	20		Note 4
HV-6211	E-4	2	A	10"	BTF	MO	O	C	AT BT PIT	RR CS RR	40	*	Notes 3, 5, 6, & 10
HV-6212	E-3	3	B	28"	BTF	AO	O	C	FST BT PIT	CS CS RR	20	*	Note 3

INSERVICE TESTING PROGRAM
ASME-CLASS 1, 2 & 3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT 2

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS
COMPONENT COOLING WATER P & ID # 40126 (Continued)													
HV-6213	E-3	3	B	28"	BTF	AO	O	C	FST BT PIT	CS CS RR	20	*	Note 3
HV-6223	E-4	2	A	10"	BTF	MO	O	C	AT BT PIT	RR CS RR	40	*	Notes 3, 5, 6 & 10
HV-6495	D-2	3	B	30"	BTF	MO	C	O	BT PIT	OP RR	60		Notes 4 & 6
HV-6497	F-2	3	B	30"	BTF	MO	C	O	BT PIT	OP RR	60		Notes 4 & 6
1-013-D-691	G-6	3	C	1"	CK	SA	C	O	CVT	OP			
1-016-D-691	G-6	3	C	1"	CK	SA	C	O	CVT	OP			
1-021-D-691	D-6	3	C	1"	CK	SA	C	O	CVT	OP			
1-024-D-691	C-7	3	C	1"	CK	SA	C	O	CVT	OP			
30-009-D-722	G-7	3	C	30"	SDCK	SA	O&C	O&C	CVT	OP			
30-010-D-722	F-7	3	C	30"	SDCK	SA	O&C	O&C	CVT	OP			
30-011-D-722	D-7	3	C	30"	SDCK	SA	O&C	O&C	CVT	OP			
30-012-D-722	C-7	3	C	30"	SDCK	SA	O&C	O&C	CVT	OP			
COMPONENT COOLING WATER P & ID # 40127													
HCV-6537	F-6	3	B	10"	BTF	AO	O	C	FST BT	OP OP	10		Note 4
HCV-6538	D-6	3	B	10"	BTF	AO	O	C	FST BT	OP OP	10		Note 4
HCV-6539	C-6	3	B	10"	BTF	AO	O	C	FST BT	OP OP	10		Note 4
HV-6216	E-2	2	A	10"	BTF	MO	O	C	AT BT PIT	RR CS RR	40	*	Notes 3, 5, 6 & 10

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UNIT 2

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS
COMPONENT COOLING WATER P & ID # 40127 (Continued)													
HV-6218	E-2	3	B	28"	BTF	AO	O	C	FST BT PIT	CS CS RR	20	*	Notes 3 & 5
HV-6219	D-2	3	B	28"	BTF	AO	O	C	FST BT PIT	CS CS RR	20	*	Notes 3 & 5
HV-6236	F-2	2	A	10"	BTF	MO	O	O	AT BT PIT	RR CS RR	40	*	Notes 3, 5, 6 & 10
HV-6500	B-6	3	B	18"	BTF	AO	C	O	FST BT PIT	CS CS RR	10	*	Note 3, 5
HV-6501	G-6	3	B	18"	BTF	AO	C	O	FST BT PIT	CS CS RR	10	*	Note 3, 5
28-101-D-725	G-4	3	C	28"	SDCK	SA	O&C	O&C	CVT CVP	CS OP		*	
28-102-D-725	D-4	3	C	28"	SDCK	SA	O&C	O&C	CVT CVP	CS OP		*	
28-103-D-725	E-4	3	C	28"	SDCK	SA	O&C	O&C	CVT CVP	CS OP		*	
NUCLEAR SAMPLING P & ID 40128													
HV-0514	C-8	2	A	3/4"	GL	MO	O	C	AT BT PIT	RR OP RR	40		Notes 3, 6, 10 & 11
HV-0515	C-7	2	A	3/4"	GL	AO	C	C	AT FST PIT BT	RR OP RR OP	40		Notes 3 10 & 11
HV-0516	C-8	2	A	3/4"	GL	MO	O	C	AT BT PIT	RR OP RR	40		Notes 3, 6, 10 & 11

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UNIT 2

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS
COOLANT RADWASTE P & ID 40131													
HV-7512	G-5	2	A	3"	GL	MO	C	C	AT PIT BT	RR RR OP	40		Notes 3, 6 10 & 11
HV-7513	G-5	2	A	3"	GL	AO	C	C	AT PIT BT FST	RR RR OP OP	40		Notes 3 10 & 11
COOLANT AND BORIC ACID RECYCLE P & ID 40133													
2-321-C-376	B-7	2	A	2"	GL	M	C	C	AT	RR			Notes 9 10 & 11
2-573-C-611	B-8	2	AC	2"	CK	SA	C	C	AT	RR			Notes 9 10 & 11
NUCLEAR PLANT SAMPLING P & ID 40134													
HV-0508	F-7	2	A	3/4"	GL	MO	C	C	AT PIT BT	RR RR OP	40		Notes 3, 6 & 10
HV-0509	F-6	2	A	3/4"	GL	AO	C	C	AT PIT BT FST	RR RR OP OP	40		Notes 3 & 10
HV-0510	E-7	2	A	3/4"	GL	MO	C	C	AT PIT BT	RR RR OP	40		Notes 3 6 & 10
HV-0511	E-6	2	A	3/4"	GI	AO	C	C	AT PIT BT FST	RR RR OP OP	40		Notes 3 & 10
HV-0512	D-7	2	A	3/4"	GI	MO	C	C	AT PIT BT	RR RR OP	40		Notes 3, 6 & 10
HV-0513	D-7	2	A	3/4"	GL	AO	C	C	AT FST PIT BT	RR OP RR OP	40		Notes 3 & 10

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UNIT 2

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS
NUCLEAR PLANT SAMPLING P & ID 40134 (Continued)													
HV-0517	G-7	2	A	3/4"	GL	MO	C	C	AT BT PIT	RR OP RR	40		Notes 3, 6 & 10
WASTE GAS P & ID # 40135													
HV-7258	H-8	2	A	3"	GA	MO	O	C	AT BT PIT	RR OP RR	40		Notes 3, 6 & 10
HV-7259	H-8	2	A	3"	GA	AO	O	C	AT FST BT PIT	RR OP OP RR	40		Notes 3 & 10
NUCLEAR SERVICE WATER P & ID # 40140													
HV-7911	E-5	2	A	3"	GA	AO	O	C	AT BT FST PIT	RR OP OP RR	40		Notes 3, 10 & 11
3-236-C-675	E-4	2	AC	3"	CK	SA	C	C	AT	RR			Notes 3, 9, 10 & 11
MAIN STEAM P & ID # 40141													
HV-4053	C-6	2	B	6"	GL	AO	O	C	PIT FST BT	RR OP OP	20		Note 3
HV-4054	E-6	2	B	6"	GL	AO	O	C	PIT FST BT	RR OP OP	20		Note 3
HV-4057	B-6	2	B	3/4"	GL	AO	O	C	FST BT PIT	OP OP RR	20		Note 3
HV-4058	E-6	2	B	3/4"	GL	AO	O	C	FST BT PIT	OP OP RR	20		Note 3

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UNIT 2

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS
MAIN STEAM	P & ID # 40141	(Continued)											
HV-8204	E-2	2	B	40"	GA	HY	O	C	FST BTP BT PIT	CS OP CS RR	5	*	Note 3
HV-8205	F-4	2	B	40"	GA	HY	O	C	FST BTP BT PIT	CS OP CS RR	5	*	Note 3
HV-8248	G-3	2	B	1"	GA	SO	O	C	BT PIT FST	OP RR OP	20		Note 3
HV-8249	F-2	2	B	1"	GA	SO	O	C	BT PIT FST	OP RR OP	20		Note 3
HV-8419	H-6	2	B	8"	RV	AO	C	C	BT PIT FST	CS RR CS	20	*	Notes 3 & 5
HV-8421	F-5	2	B	8"	RV	AO	C	C	BT PIT FST	CS RR CS	20	*	Notes 3 & 5
PSV-8401	G-5	2	C	6"	SV	SA	C	O	RVT	-			Note 2
PSV-8402	G-5	2	C	6"	SV	SA	C	O	RVT	-			Note 2
PSV-8403	G-4	2	C	6"	SV	SA	C	O	RVT	-			Note 2
PSV-8404	G-4	2	C	6"	SV	SA	C	O	RVT	-			Note 2
PSV-8405	G-4	2	C	6"	SV	SA	C	O	RVT	-			Note 2
PSV-8406	G-4	2	C	6"	SV	SA	C	O	RVT	-			Note 2
PSV-8407	G-4	2	C	6"	SV	SA	C	O	RVT	-			Note 2
PSV-8408	G-3	2	C	6"	SV	SA	C	O	RVT	-			Note 2

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UNIT 2

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS
MAIN STEAM	P & ID # 40141	(Continued)											
PSV-8409	G-3	2	C	6"	SV	SA	C	C	RVT	-			Note 2
PSV-8410	E-4	2	C	6"	SV	SA	C	O	RVT	-			Note 2
PSV-8411	E-4	2	C	6"	SV	SA	C	O	RVT	-			Note 2
PSV-8412	E-3	2	C	6"	SV	SA	C	O	RVT	-			Note 2
PSV-8413	E-3	2	C	6"	SV	SA	C	O	RVT	-			Note 2
PSV-8414	E-3	2	C	6"	SV	SA	C	O	RVT	-			Note 2
PSV-8415	E-3	2	C	6"	SV	SA	C	O	RVT	-			Note 2
PSV-8416	E-3	2	C	6"	SV	SA	C	O	RVT	-			Note 2
PSV-8417	E-2	2	C	6"	SV	SA	C	O	RVT	-			Note 2
PSV-8418	E-2	2	C	6"	SV	SA	C	O	RVT	-			Note 2
4-003-D-620	F-3	3	C	4"	CK	SA	C	O C	CVT CVT	OP RR		VRR-18	Notes 1 & 14
4-005-D-620	F-2	3	C	4"	CK	SA	C	O C	CVT CVT	OP RR		VRR-18	Notes 1 & 14
6-124-C-599	D-7	2	C	6"	CK	SA	C	O	CVT	CS		*	Note 5
6-448-C-599	F-7	2	C	6"	CK	SA	C	O	CVT	CS		*	Note 5
20-036-C-609	D-7	2	C	20"	CK	SA	O	C	CVT	RR		VRR-20	Note 1
20-129-C-609	F-7	2	C	20"	CK	SA	O	C	CVT	RR		VRR-20	Note 1
HIGH PRESSURE FEEDWATER	P & ID # 40156												
HV-1105	C-2	-	B	6"	GA	AO	C	C	FST BT PIT	CS CS RR	10	*	Note 3
HV-1106	F-2	-	B	6"	GA	AO	C	C	FST BT PIT	CS CS RR	10	*	Note 3

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UNIT 2

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS
HIGH PRESSURE FEEDWATER P & ID # 40156 (Continued)													
HV-4047	F-2	-	B	20"	GA	E/H	O	C	BT PIT	CS RR	10	*	Notes 3 & 5
HV-4048	F-1	2	B	20"	GA	AO	O	C	FST BT PIT	CS CS RR	10	*	Notes 3 & 5
HV-4051	C-2	-	B	20"	GA	E/H	O	C	BT PIT	CS RR	10	*	Notes 3 & 5
HV-4052	C-1	2	B	20"	GA	AO	O	C	FST BT PIT	CS CS RR	10	*	Notes 3 & 5
AUXILIARY FEEDWATER P & ID # 40160													
HV-4705	F-4	3	B	6"	GA	MO	C	O C	BT BT PIT	OP OP RR	30 40		Notes 3, 6 & 12
HV-4706	D-4	3	B	6"	GA	MO	C	O C	BT BT PIT	OP OP RR	30 40		Notes 3, 6 & 12
HV-4712	G-4	3	B	4"	GL	MO	C	O C	BT BT PIT	OP OP RR	30 40		Notes 3, 6 & 12
HV-4713	C-4	3	B	4"	GL	MO	C	O C	BT BT PIT	OP OP RR	30 40		Notes 3, 6 & 12
HV-4714	F-3	2	B	6"	GA	E/H	C	O C	BT BT PIT FST	OP OP RR OP	30 40		Notes 3 & 12

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UNIT 2

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS
AUXILIARY FEEDWATER P & ID # 40160 (Continued)													
HV-4715	B-3	2	B	6"	GA	MO	C	O C	BT BT PIT	OP OP RR	30 40		Notes 3, 6 & 12
HV-4716	E-6	3	B	4"	GA	MO	C	O	BT PIT	OP RR	20		Notes 3 & 6
HV-4730	G-3	2	B	6"	GA	MO	C	O C	BT BT PIT	OP OP RR	30 40		Notes 3, 6 & 12
HV-4731	B-3	2	B	6"	GA	E/H	C	O C	BT BT PIT FST	OP OP RR OP	30 40		Notes 3 & 12
6-121-D-598	D-4	3	C	6"	CK	SA	C	O	CVT	CS		*	Note 5
6-126-D-598	C-5	3	C	6"	CK	SA	C	O	CVT	CS		*	Note 5
6-532-D-598	G-5	3	C	6"	CK	SA	C	O	CVT	CS		*	Note 5
6-547-D-598	F-4	3	C	6"	CK	SA	C	O	CVT	CS		*	Note 5
AUXILIARY BOILER P & ID # 40169													
2-037-C-387	E-6	2	A	2"	GA	M	C	C	AT	RR			Notes 9, 10 & 11
2-038-C-387	E-6	2	A	2"	GA	M	C	C	AT	RR			Notes 9, 10 & 11

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UNIT 2

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS
HV & AC (NORMAL) P & ID # 40170													
HV-7800	E-4	2	A	3/4"	GA	SO	O	C	AT BT PIT FST	RR OP RR OP	1	VRR-15	Notes 3 & 10
HV-7801	E-4	2	A	3/4"	GA	SO	O	C	AT BT PIT FST	RR OP RR OP	1	VRR-15	Notes 3 & 10
HV-7802	D-4	2	A	3/4"	GA	SO	O	C	AT BT PIT FST	RR OP RR OP	1	VRR-15	Notes 3 & 10
HV-7803	D-3	2	A	3/4"	GA	SO	O	C	AT BT PIT FST	RR OP RR OP	1	VRR-15	Notes 3 & 10
HV-7805	C-4	2	A	3/4"	GA	SO	O	C	AT BT PIT FST	RR OP RR OP	1	VRR-15	Notes 3 & 10
HV-7806	C-4	2	A	3/4"	GA	SO	O	C	AT BT PIT FST	RR OP RR OP	1	VRR-15	Notes 3 & 10
HV-7810	D-3	2	A	3/4"	GA	SO	O	C	AT BT PIT FST	RR OP RR OP	1	VRR-15	Notes 3 & 10
HV-7811	C-3	2	A	3/4"	GA	SO	O	C	AT BT PIT FST	RR OP RR OP	1	VRR-15	Notes 3 & 10

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UNIT 2

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS
HV & AC (NORMAL) P & ID # 40170 (Continued)													
HV-7816	E-4	2	A	3/4"	GA	SO	O	C	AT BT PIT FST	RR OP RR OP	1		Notes 3 & 10
HV-9900	F-4	2	A	8"	BTF	MO	O	C	AT BT PIT	RR OP RR	40		Notes 3, 6, 10 & 11
HV-9920	F-3	2	A	8"	BTF	AO	O	C	AT BT FST PIT	RR OP OP RR	40		Notes 3, 10 & 11
HV-9921	E-3	2	A	8"	BTF	AO	O	C	AT BT FST PIT	RR OP OP RR	40		Notes 3, 10 & 11
HV-9971	E-4	2	A	8"	BTF	MO	O	C	AT BT PIT	RR OP RR	40		Notes 3, 6, 10 & 11
HV & AC (NORMAL P & ID # 40171													
HV-9821	F-7	2	A	8"	BTF	AO	O	C	AT BT FST PIT	OP OP OP RR	5		Notes 3 & 10
HV-9823	E-5	2	A	8"	BTF	AO	O	C	AT BT FST PIT	OP OP OP RR	5		Notes 3 & 10
HV-9824	E-4	2	A	8"	BTF	AO	O	C	AT BT FST PIT	OP OP OP RR	5		Notes 3 & 10

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UNIT 2

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS
HV & AC (NORMAL) P & ID # 40171 (Continued)													
HV-9825	G-6	2	A	8"	BTF	AO	O	C	AT BT FST PIT	OP OP OP RR	5		Notes 3 & 10
HV-9948	E-6	2	A	42"	BTF	AO	C	C	AT BT FST	OP CS CS	12	VRR-19	Notes 3 & 10
HV-9949	E-5	2	A	42"	BTF	MO	C	C	AT BT	OP CS	12	VRR-19	Notes 3 6 & 10
HV-9950	E-4	2	A	42"	BTF	MO	C	C	AT BT	OP CS	12	VRR-19	Notes 3 6 & 10
HV-9951	G-6	2	A	42"	BTF	AO	C	C	AT BT FST	OP CS CS	12	VRR-19	Notes 3 & 10
3/4-038-C-358	C-2	2	A	3/4"	GL	M	C	C	AT	RR			Notes 9 & 10
3/4-039-C-396	C-2	2	A	3/4"	GL	M	C	C	AT	RR			Notes 9 & 10
HV & AC (EMERGENCY) P & ID # 40172													
HV-0500	F-4	2	A	1"	GA	SO	C	C	AT	RR			Notes 9, 10 & 11
HV-0501	G-2	2	A	1"	GA	SO	C	C	AT	RR			Notes 9, 10 & 11
HV-0502	F-3	2	A	1"	GA	SO	C	C	AT	RR			Notes 9, 10 & 11
HV-0503	G-3	2	A	1"	GA	SO	C	C	AT	RR			Notes 9, 10 & 11
HV-6366	B-7	2	A	10"	GA	MO	O	O&C	AT BT PIT	RR OP RR	12		Notes 3, 6 & 10, 13
HV-6367	B-7	2	A	10"	GA	MO	C	O&C	AT BT PIT	RR OP RR	12		Notes 3, 6 & 10, 13

INSERVICE TESTING PROGRAM
ASME-CLASS 1, 2 & 3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT 2

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS
HV & AC (EMERGENCY) P & ID # 40172 (Continued)													
HV-6368	C-7	2	A	10"	GA	MO	O	O&C	AT BT PIT	RR OP RR	12		Notes 3, 6, 10 & 13
HV-6369	C-7	2	A	10"	GA	MO	C	O&C	AT BT PIT	RR OP RR	12		Notes 3, 6, 10 & 13
HV-6370	B-2	2	A	10"	GA	MO	O	O&C	AT BT PIT	RR OP RR	12		Notes 3, 6, 10, & 13
HV-6371	B-2	2	A	10"	GA	MO	C	O&C	AT BT PIT	RR OP RR	12		Notes 3, 6, 10, & 13
HV-6372	C-2	2	A	10"	GA	MO	O	O&C	AT BT PIT	RR OP RR	12		Notes 3, 6, 10, & 13
HV-6373	C-2	2	A	10"	GA	MO	C	O&C	AT BT PIT	RR OP RR	12		Notes 3, 6, 10, & 13
HV-9917	D-3	2	A	6"	BTF	MO	C	C	AT	RR			Notes 6, 10 & 11
HCV-9918	D-3	2	A	6"	BTF	M	C	C	AT	RR			Notes 10 & 11
HV-9945	D-7	2	A	6"	BTF	M	C	C	AT	RR			Notes 10 & 11
HCV-9946	D-6	2	A	6"	BTF	MO	C	C	AT	RR			Notes 6, 10 & 11
FIRE PROTECTION P & ID # 40184													
HV-5686	F-3	2	A	4"	GA	MO	C	C	AT BT	RR CS	40	*	Notes 3, 10 & 11
4-061-C-681	F-4	2	AC	4"	CK	SA	C	C	AT	RR			Notes 9, 10 & 11

INSERVICE TESTING PROGRAM
ASME-CLASS 1, 2 & 3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT 2

VALVE NUMBER	COORD.	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTR. TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STOKE TIME (Sec.)	RELIEF REQUEST	REMARKS
COMPRESSED AIR SYSTEM P & ID # 40191													
HV-5388	E-1	2	A	1-1/2"	GL	AO	O	C	BT FST AT	CS CS RR	40	*	Notes 3 & 10
1-1/2-016-C-617	E-1	2	AC	1-1/2"	CK	SA	C	C	AT	RR			Notes 9 & 10
2"-017-C-627	E-1	2	AC	2"	CK	SA	C	C	AT	RR			Notes 9 & 10
2-055-C-387	E-1	2	A	2"	GL	M	C	C	AT	RR			Notes 9 & 10
AUXILIARY GAS SYSTEM P & ID # 40192													
HV-5434	E-7	2	A	2"	GL	AO	C	C	AT BT FST PIT	RR OP OP RR	40		Notes 3 & 10
HV-5437	D-5	2	A	3/4"	GL	AO	O	C	PIT BT FST AT	RR OP OP RR	40		Notes 3 & 10
3/4-002-C-611	D-5	2	AC	3/4"	CK	SA	C	C	AT	RR			Notes 9 & 10
2-108-C-627	E-7	2	AC	2"	CK	SA	C	C	AT	RR			Notes 9 & 10

COLD SHUTDOWN VALVE TESTING
JUSTIFICATION TABLE

VALVE NUMBER	COORD.	CLASS	VALVE CAT.	JUSTIFICATION FOR COLD SHUTDOWN TESTING FREQUENCY OF VALVES
	REACTOR COOLANT P&ID #40111			
3-152-A-551	C-5	1	AC	This valve cannot be full stroke exercised during power operation because the high pressure safety injection pumps cannot overcome reactor coolant system pressure. In addition, this valve cannot be part stroke exercised because the header isolation valve is required to be closed during power operation by Technincal Specifications (Reference 3/4.5.2). The disc in this valve will actuate to its full open position while passing approximately 170 gpm. This can be performed while plant is in cold shutdown and sufficient volume available in the pressurizer.
	SAFETY INJECTION P&ID #40112			
FV0306	F-2	2	B	Full stroke testing of this valve during operation would isolate both trains of low pressure safety injection. Technical Specification 3/4.5.2 requires at least one low pressure safety injection pump to be operable. Full stroke exercising of this valve would cause both pumps to be inoperable. Valve will be full stroke exercised during cold shutdown.
HV8152	F-3	2	B	Full stroke exercising of this valve during operation would violate Technical Specifications 3/4.5.2 which requires this valve to be locked closed to preclude run-out damage to the low pressure safety injection pumps. Valve will be full stroke exercised during cold shutdown.
HV8153	F-3	2	B	Same as HV8152
3-155-C-551	D-1	2	C	This check valve cannot be full stroke exercised during power operation because the high pressure safety injection pumps cannot overcome reactor coolant system pressure. In addition, this valve cannot be part stroke exercised because the header isolation valve is required to be closed during power operation by Technincal Specifications (Reference 3/4.5.2). The disc in this valve will actuate to its full position while passing approximately 170 gpm. This can be performed while plant is in cold shutdown and sufficient volume available in the pressurizer.
4-012-C-358	E-3	2	C	This valve cannot be full stroke exercised during power operation because the high pressure safety injection pump cannot overcome reactor coolant system pressure. The disc in this check valve will move to its full open position while passing approximately 200 gpm. This can be performed while plant is in cold shutdown and sufficient volume available in the pressurizer.

COLD SHUTDOWN VALVE TESTING
JUSTIFICATION TABLE

VALVE NUMBER	COORD.	CLASS	VALVE CAT.	JUSTIFICATION FOR COLD SHUTDOWN TESTING FREQUENCY OF VALVES
	SAFETY INJECTION P&ID #40112 (Continued)			
4-015-C-358	B-3	2	C	Same as 4-012-C-358.
4-016-C-358	D-3	2	C	Same as 4-012-C-358.
4-017-C-358	B-3	2	C	This valve cannot be full stroke exercised during power operation because the high pressure safety injection pump cannot overcome reactor coolant system pressure. The disc in the valve will actuate to the full open position while passing approximately 250 gpm. This can be performed while plant is in cold shutdown and sufficient volume available in the pressurizer.
10-024-C-406	G-3	2	C	LPSI pump discharge check valve. LPSI pumps, cannot overcome RCS pressure. Aligning the system discharge to the RWST would defeat both trains of LPSI. This valve will be full stroke exercised during cold shutdown.
10-025-C-406	F-3	2	C	Same as 10-024-C-406
14-015-C-173	G-6	2	B	During power operation this valve is locked closed and while plant is on shutdown cooling (SDC) it is locked open. This valve is passive during power operation and will be tested during cold shutdown. In addition, this valve will be deleted from the program (as a passive valve) after modification to the SDC system required by BTP-5-1, scheduled for the first refueling outage.
14-018-C-173	F-6	2	B	Same as 14-015-C-173
16-022-C-173	G-6	2	B	During power operation this valve is locked open to allow flow from the refueling water tank (RWT) to the suction of the LPSI pumps. Also, this valve is closed to provide double valve isolation between the shutdown cooling (SDC) system and the RWT, while the plant is on SDC. This valve will be exercised during cold shutdown. In addition, this valve will be removed from the program (as a passive valve) after completion of modifications to the SDC system required by BTP-5-1 scheduled for the first refueling outage.
16-023-C-173	F-6	2	B	Same as 16-022-C-173
	SAFETY INJECTION P&ID #40113			
HV9337	E-4	1	A	This valve is required, by Technical Specification 3/4.5.2, to be interlocked to prevent opening at reactor coolant system above 376 psia. This valve will be full stroke exercised during cold shutdown.
HV9339	E-3	1	A	Same as HV9337

COLD SHUTDOWN VALVE TESTING
JUSTIFICATION TABLE

VALVE NUMBER	COORD.	CLASS	VALVE CAT.	JUSTIFICATION FOR COLD SHUTDOWN TESTING FREQUENCY OF VALVES
	SAFETY INJECTION P&ID #40113 (Continued)			
HV9340	F-5	1	B	This valve is a safety injection tank (Accumulator) discharge valve. This valve is required to be open during power operation by Technical Specification. Power is removed during power operation. This valve will be full stroke exercised during cold shutdown.
HV9345	G-5	2	B	This valve is a safety injection tank (SIT) pressure isolation valve. During power operation, Technical Specifications require power to be locked out to this valve, so an inadvertent depressurization of the SIT will not occur. This valve will be full stroke exercised during cold shutdown.
HV9350	F-2	1	B	Same as HV9340
HV9355	G-1	2	B	Same as HV9345
HV9360	B-5	1	B	Same as HV9340
HV9365	D-5	2	B	Same as HV9345
HV9370	B-2	1	B	Same as HV9340
HV9375	C-1	1	B	Same as HV9345
HV9377	D-4	1	A	Same as HV9337
HV9378	D-3	1	A	Same as HV9337
3-018-A-551	G-6	1	AC	This valve cannot be exercised during power operation without violating the seat leakage integrity of a reactor coolant pressure isolation valve required by (associated cold leg injection loop check valve) Technical Specification 3.4.5.2. The tilting disc in this check valve will actuate to its full open position while passing approximately 170 gpm passing through it. This shall be performed while reactor is in cold shutdown and sufficient volume is available in pressurizer.

COLD SHUTDOWN VALVE TESTING
JUSTIFICATION TABLE

VALVE NUMBER	COORD.	CLASS	VALVE CAT.	JUSTIFICATION FOR COLD SHUTDOWN TESTING FREQUENCY OF VALVES
	SAFETY INJECTION P&ID #40113 (Continued)			
3-019-A-551	E-6	1	AC	Same as 3-018-A-551.
3-020-A-551	C-6	1	AC	Same as 3-018-A-551.
3-021-A-551	A-6	1	AC	Same as 3-018-A-551.
3-156-A-551	D-3	1	AC	This check valve cannot be full stroke exercised during power operation because high pressure safety injection pumps cannot overcome reactor coolant system pressure. In addition, this valve cannot be part stroke exercised because the header isolation valve is required to be closed during power operation by Technical Specifications (Reference 3/4.5.2). The disc in this valve will actuate to its full open position while passing approximatly 170 gpm. This can be accomplished while reactor is in cold shutdown sufficient volume is available in the pressurizer.
8-072-A-552	G-6	1	AC	There is no full flow path available to exercise this valve during power operation. LPSI pumps cannot overcome RCS pressure during power operation. This valve will be full stroke exercised during cold shutdown.
8-073-A-552	F-6	1	AC	Same as 8-072-A-552
8-074-A-552	D-6	1	AC	Same as 8-072-A-552
8-075-A-552	B-6	1	AC	Same as 8-072-A-552
12-027-A-551	F-4	1	AC	During power operation there is no full flow path available to stroke test this valve. LPSI or HPSI pumps cannot overcome the RCS pressure. The tilting disc in this check valve will move to its full open position with approximately 2000 gpm, this can be accomplished while the plant is on shutdown cooling.
12-029-A-551	F1	1	AC	Same as 12-027-A-551
12-031-A-551	A-4	1	AC	Same as 12-027-A-551
12-033-A-551	B-2	1	AC	Same as 12-027-A-551

COLD SHUTDOWN VALVE TESTING
JUSTIFICATION TABLE

VALVE NUMBER	COORD.	CLASS	VALVE CAT.	JUSTIFICATION FOR COLD SHUTDOWN TESTING FREQUENCY OF VALVES
	CONTAINMENT SPRAY P&ID #40114			
HV8150	C-5	2	B	This valve is required to be closed with power removed during power operation by Technical Specification. Opening this valve could defeat both trains of LPSI. This valve will be full stroke exercised during cold shutdown.
HV8151	E-5	2	B	Same as HV8150
HV-9398	F-6	2	B	ISI Surveillance testing of this valve requires a system modification that requires approximately 72 hours to complete. To perform this modification one train of chemical addition must be declared inoperable which places the unit in a limiting condition for operation (Ref. T.S. 3.6.2.2). This valve shall be full stroke exercised during cold shutdown until a design change can be completed that will increase the capability of the valve to be ISI tested.
HV-9399	E-6	2	B	Same as HV-9398
HV9420	B-7	2	A	This valve is required to be closed with power removed during power operation by Technical Specifications. Opening this valve would defeat high pressure cold leg safety injection. Valve will be full stroke exercised during cold shutdown.
HV9434	C-7	2	A	Same as HV9420
3-157-A-550	C-7	1	AC	This check valve cannot be full stroke exercised during power operation because high pressure safety injection pumps cannot overcome reactor coolant system pressure. In addition, this valve cannot be part stroke exercised because the header isolation valve is required to be closed during power operation by Technical Specifications (Reference 3/4.5.2). The tilting disc in this valve will actuate to its full open position while passing approximately 170 gpm. This can be accomplished while reactor is in cold shutdown and sufficient volume available in the pressurizer.
3-158-A-550	B-7	1	AC	Same as 3-157-A-550
8-012-C-406	C-5	2	C	During power operation, full stroke exercising of this check valve would require disabling both trains of LPSI. This valve will be full stroke exercised at a cold shutdown interval during the process of going to cold shutdown (Mode 4).
8-014-C-406	E-5	2	C	Same as 8-012-C-406

COLD SHUTDOWN VALVE TESTING
JUSTIFICATION TABLE

VALVE NUMBER	COORD.	CLASS	VALVE CAT.	JUSTIFICATION FOR COLD SHUTDOWN TESTING FREQUENCY OF VALVES
	CONTAINMENT SPRAY P&ID #40114 (Continued)			
16-087-C-675	E-7	2	C	Same as 8-012-C-406
16-088-C-675	E-7	2	C	Same as 8-012-C-406
	CHEMICAL & VOLUME CONTROL P&ID #40123			
HV9200	B-5	2	A	Exercising this valve during power operation would isolate normal charging to reactor coolant system. This would violate Technical Specifications (3.1.2.2) which requires two flow paths for boration during power operation. Closing this valve would isolate the boration flow path. This valve will be full stroke exercised during cold shutdown.
HV9201	C-7	1	B	This valve cannot be full stroke exercised during power operation since this would result in placing unnecessary thermal stress transients on pressurizer spray nozzle. This valve will be full stroke exercised during cold shutdown.
HV9204	D-7	1	B	Exercising this valve during power operation would result in unnecessary thermal stress transients on the regenerative heat exchanger, and reactor coolant system charging nozzles. This valve will be full stroke exercised during cold shutdown.
HV 9205	E-6	2	A	Same as HV9204
TV0221	D-7	1	B	Same as HV9204
TV9267	D-6	2	A	Same as HV9204
2-019-A-554	C-7	1	C	Same as HV9201
2-129-C-554	A-6	1	AC	Same as HV9201
2-130-C-334	A-5	2	A	Same as HV9201

COLD SHUTDOWN VALVE TESTING
JUSTIFICATION TABLE

VALVE NUMBER	COORD.	CLASS	VALVE CAT.	JUSTIFICATION FOR COLD SHUTDOWN TESTING FREQUENCY OF VALVES
	CHEMICAL & VOLUME CONTROL P&ID #40124			
HV9217	G-5	2	A	Exercising this valve could result in reactor coolant pump seal failure which could result in plant shutdown. This valve will be full stroke exercised during cold shutdown.
HV9218	G-5	2	A	Same as HV9217
LV0227B	D-7	2	B	Closing this valve would require aligning charging pump suction to another source and would inject highly concentrated boric acid into the reactor coolant system, causing a plant shutdown. This valve will be full stroked during cold shutdown.
LV0227C	C-5	2	B	Opening this valve would result in injecting highly concentrated boric acid into the reactor coolant system causing plant shutdown. This valve will be full stroke exercised during cold shutdown.
3-082-C-675	G-3	2	C	Same as LV0227C
3-083-C-675	F-3	2	C	Same as LV0227C
4-015-C-675	D-6	2	C	Closure of check valve cannot be performed during power operation as this would require aligning charging pumps to another source which would inject highly concentrated boric acid to the reactor coolant system resulting in a plant shutdown. This valve will be exercised closed during cold shutdown.
6-052-C-675	D-3	2	C	Same as LV0227C
	CHEMICAL & VOLUME CONTROL P&ID #40125			
HV9235	D-6	3	B	Opening this valve during power operation could result in over boration of the RCS, which could result in plant shutdown. This valve will be full stroke exercised during cold shutdown.
HV9240	D-5	3	B	Same as HV9235

COLD SHUTDOWN VALVE TESTING
JUSTIFICATION TABLE

VALVE NUMBER	COORD.	CLASS	VALVE CAT.	JUSTIFICATION FOR COLD SHUTDOWN TESTING FREQUENCY OF VALVES
	CHEMICAL & VOLUME CONTROL P&ID #40125 (Continued)			
HV9247	E-3	3	B	Same as HV9235
3-033-D-675	C-4	3	C	This valve cannot be full stroke exercised during power operation since this would result in over boration of the RCS which would result in plant shutdown. This valve will be partial stroke exercised quarterly during power operation and full stroke exercised during cold shutdown.
3-035-D-675	D-4	3	C	Same as 3-033-D-675
	COMPONENT COOLING WATER P&ID #40126			
HV6211	E-4	2	A	Exercising this valve during operation would secure or direct cooling water flow from RCP seals, which could result in seal damage and plant shutdown. This valve will be full stroke exercised during cold shutdown.
HV6212	E-3	3	B	Same as HV6211
HV6213	E-3	3	B	Same as HV6211
HV6223	E-4	2	A	Same as HV6211
	COMPONENT COOLING WATER P&ID #40127			
HV6216	E-2	2	A	Same as HV6211
HV6218	E-2	3	B	Same as HV6211
HV6219	D-2	3	B	Same as HV6211
HV6236	F-2	2	A	Same as HV6211
HV6500	B-6	3	B	Same as HV6211
HV6501	G-6	3	B	Same as HV6211

COLD SHUTDOWN VALVE TESTING
JUSTIFICATION TABLE

VALVE NUMBER	COORD.	CLASS	VALVE CAT.	JUSTIFICATION FOR COLD SHUTDOWN TESTING FREQUENCY OF VALVES
	COMPONENT COOLING WATER P&ID #40127 (Continued)			
28-101-D-725	G-4	3	C	Full stroke exercising of this valve during power operation would require diverting component cooling water from the reactor coolant pump seals which could result in seal damage and plant shutdown. This valve will be part stroke exercised quarterly and full stroke exercised during cold shutdown.
28-102-D-725	D-4	3	C	Same as 28-101-D-725
28-103-D-725	E-4	3	C	Same as 28-101-D-725
	MAIN STEAM P&ID #40141			
HV8204	E-2	2	B	Main steam isolation valve. Closing this valve during power operation would result in plant shutdown. This valve will be partial stroke exercised quarterly and full stroke exercised during cold shutdown.
HV8205	F-4	2	B	Same as HV8204
HV8419	H-6	2	B	Atmospheric dump valve. Exercising this valve during power operation could result in a low steam generator pressure indication which would shut the main steam isolation valve and result in a plant shutdown. This valve will be full stroke exercised during cold shutdown.
HV8421	F-5	2	B	Same as HV8419
6-124-C-599	D-7	2	C	Exercising this valve during power operation would result in placing unnecessary thermal stresses on the feedwater piping which could result in premature failure of this piping. This valve will be full stroke exercised during cold shutdown.
6-448-C-599	F-7	2	C	Same as 6-124-C-599
	HIGH PRESSURE FEEDWATER P&ID #40156			
HV-1105	C-2	-	B	This valve cannot be full stroke excercised during power operation as this would challenge steam generator level control which could result in plant shutdown. This valve will be full stroke excercised during cold shutdown.
HV-1106	C-2	-	B	Same as HV1105

COLD SHUTDOWN VALVE TESTING
JUSTIFICATION TABLE

VALVE NUMBER	COORD.	CLASS	VALVE CAT.	JUSTIFICATION FOR COLD SHUTDOWN TESTING FREQUENCY OF VALVES
	HIGH PRESSURE FEEDWATER P&ID #40156 (Continued)			
HV4047	F-2	-	B	Full stroke exercising this valve during power operation would result in loss of feedwater flow to the steam generator which could result in a plant shutdown. This valve will be full stroke exercised during cold shutdown.
HV4048	F-1	2	B	Same as HV4047
HV4051	C-2	-	B	Same as HV4047
HV4052	C-1	2	B	Same as HV4047
	AUXILIARY FEEDWATER P&ID #40160			
6-121-D-598	D-4	3	C	Same as 6-124-C-599 (P&ID #40141)
6-126-D-598	C-5	3	C	Same as 6-124-C-599 (P&ID #40141)
6-532-D-598	G-5	3	C	Same as 6-124-C-599 (P&ID #40141)
6-547-D-598	F-4	3	C	Same as 6-124-C-599 (P&ID #40141)
	FIRE PROECTION P&ID #40184			
HV5686	F-3	2	A	This valve cannot be full stroke exercised during power operation since this will activate the Fire Protection System in Unit 2 containment. This valve will be full stroke tested during cold shutdown.
	COMPRESSED AIR SYSTEM P&ID #40191			
HV5388	E-1	2	A	Full stroke exercising this valve would isolate instrument air to containment. This could result in a plant shutdown. This valve will be full stroke exercised during cold shutdown.

APPENDIX D

AUGMENTED ISI BOUNDARY DRAWINGS

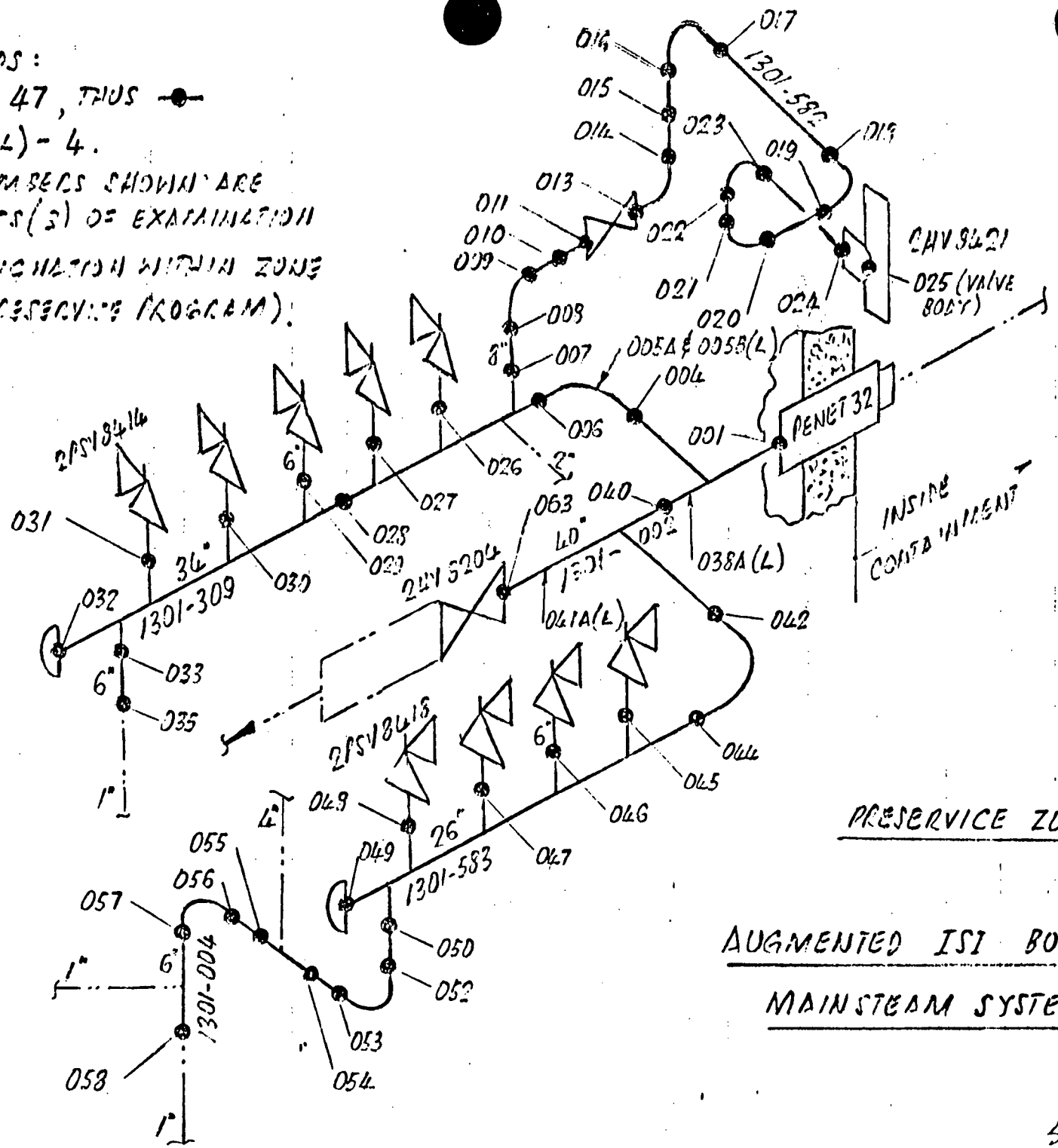
Identified by the attached sketches (10) are circumferential and longitudinal welds of the following systems and lines subject to augmented inservice inspection;

- Main Steam System — Sketches 1 thru 4
- Continuous Blowdown Line — Sketches 5 & 6
- Main Feedwater System — Sketches 7 & 8
- Auxiliary Feedwater System — Sketches 9 & 10

Welds shown will be examined during each inspection interval by the methods and to the extent specified in the 1977 Edition of the Code including all Addenda through Summer 1979 for Class 2 components. These welds are included in the applicable items to be examined during the inspection periods identified for components of the systems, listed above, in Appendix A.

TOTAL WELDS:
- CIRC - 47, THUS —●—
- LONG (L) - 4.

WELD NUMBERS SHOWN ARE LAST DIGITS (3) OF EXAMINATION AREA DESIGNATION WITHIN ZONE (FROM PRESERVICE PROGRAM).



PRESERVICE ZONE 52

AUGMENTED ISI BOUNDARY

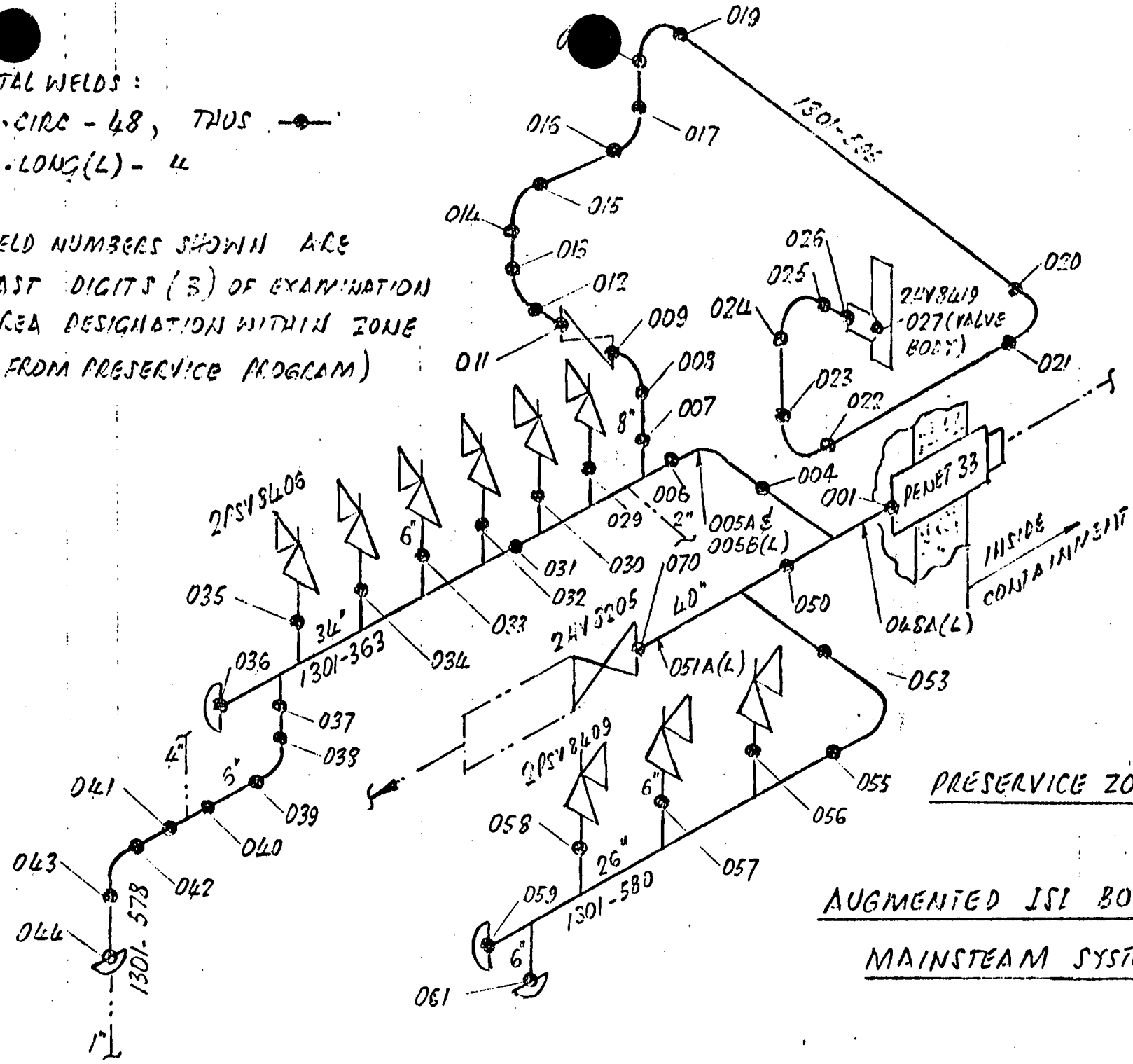
MAINSTEAM SYSTEM - SG #1

SKETCH 1

TOTAL WELDS :

- CIRC - 48, THUS —●—
- LONG (L) - 4

WELD NUMBERS SHOWN ARE LAST DIGITS (3) OF EXAMINATION AREA DESIGNATION WITHIN ZONE (FROM PRESERVICE PROGRAM)



PRESERVICE ZONE 53

AUGMENTED ISI BOUNDARY

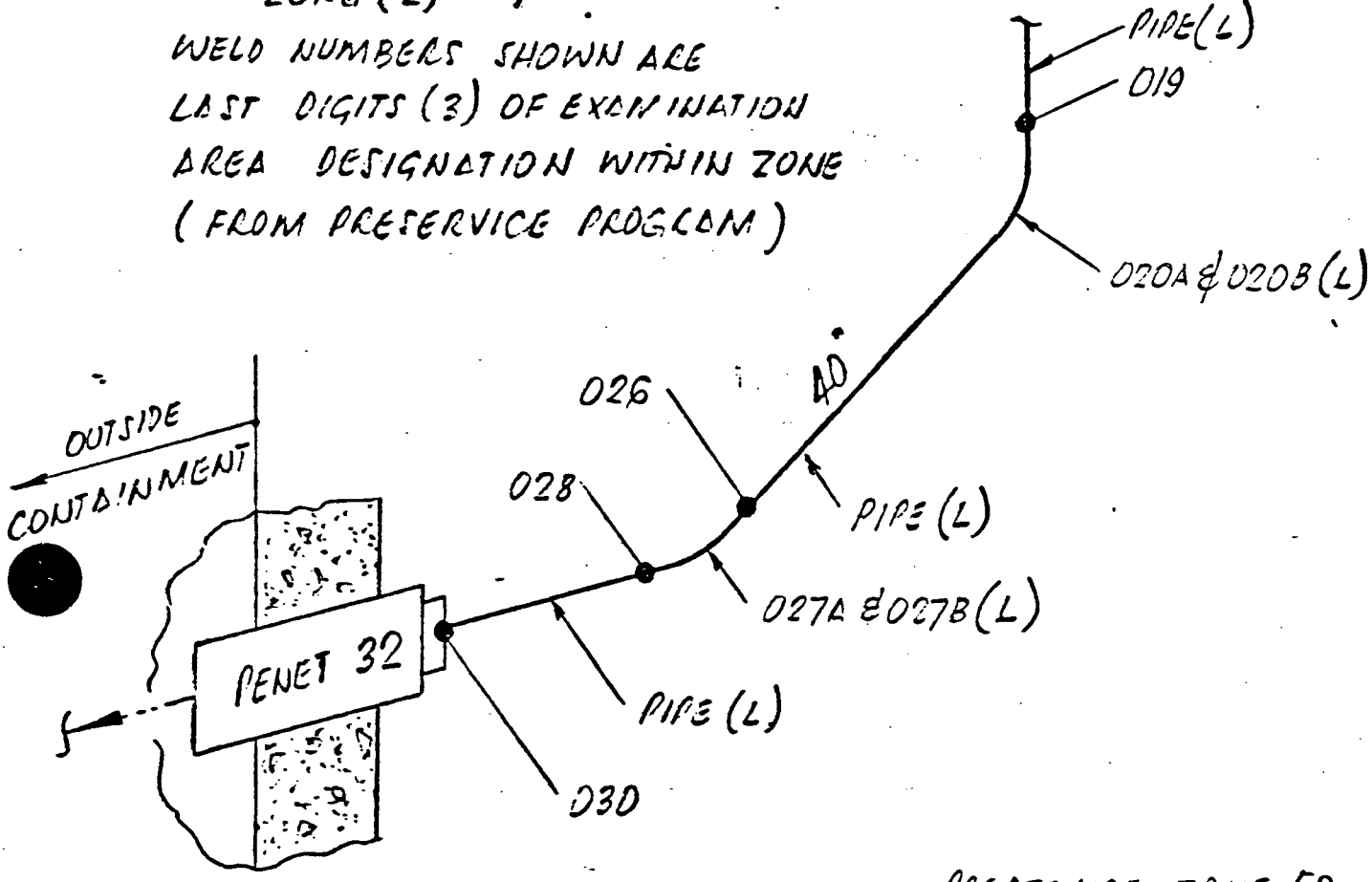
MAINSTEAM SYSTEM - SG #2

SKETCH 2

TOTAL WELDS:

- CIRC - 4, THUS —●—
- LONG (L) - 7

WELD NUMBERS SHOWN ARE LAST DIGITS (3) OF EXAMINATION AREA DESIGNATION WITHIN ZONE (FROM PRESERVICE PROGRAM)



PRESERVICE ZONE 50

AUGMENTED ISI BOUNDARY

MAINSTEAM SYSTEM - SG #1

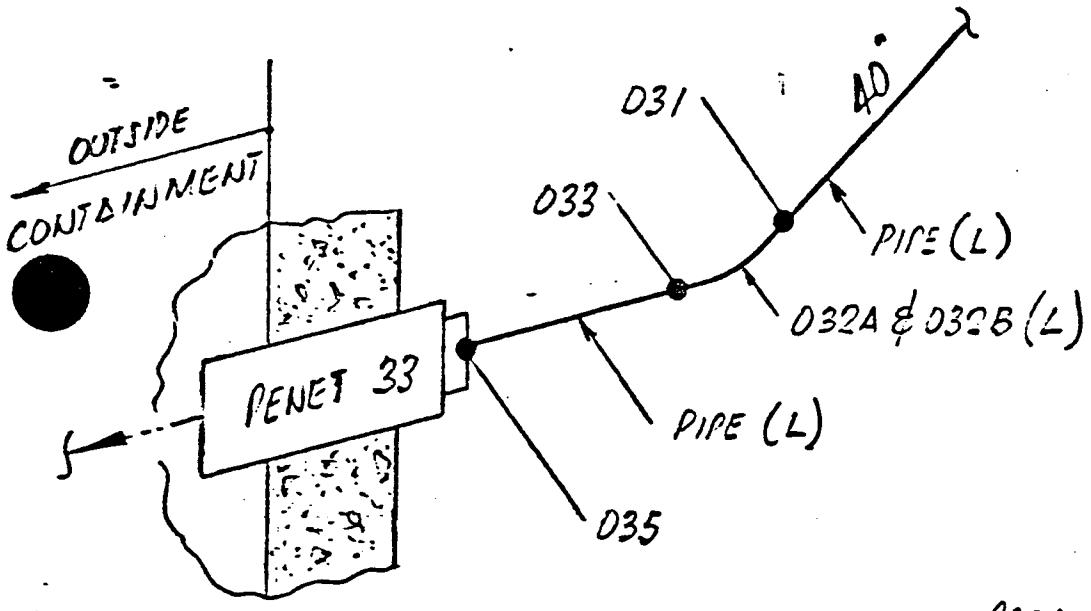
LINE 1301-002

SKETCH 2

TOTAL WELDS:

- CIRC - 3, THUS —●—
- LONG (L) - 4

WELD NUMBERS SHOWN ARE LAST DIGITS (3) OF EXAMINATION AREA DESIGNATION WITHIN ZONE (FROM PRESERVICE PROGRAM)



PRESERVICE ZONE 51

AUGMENTED ISI BOUNDARY

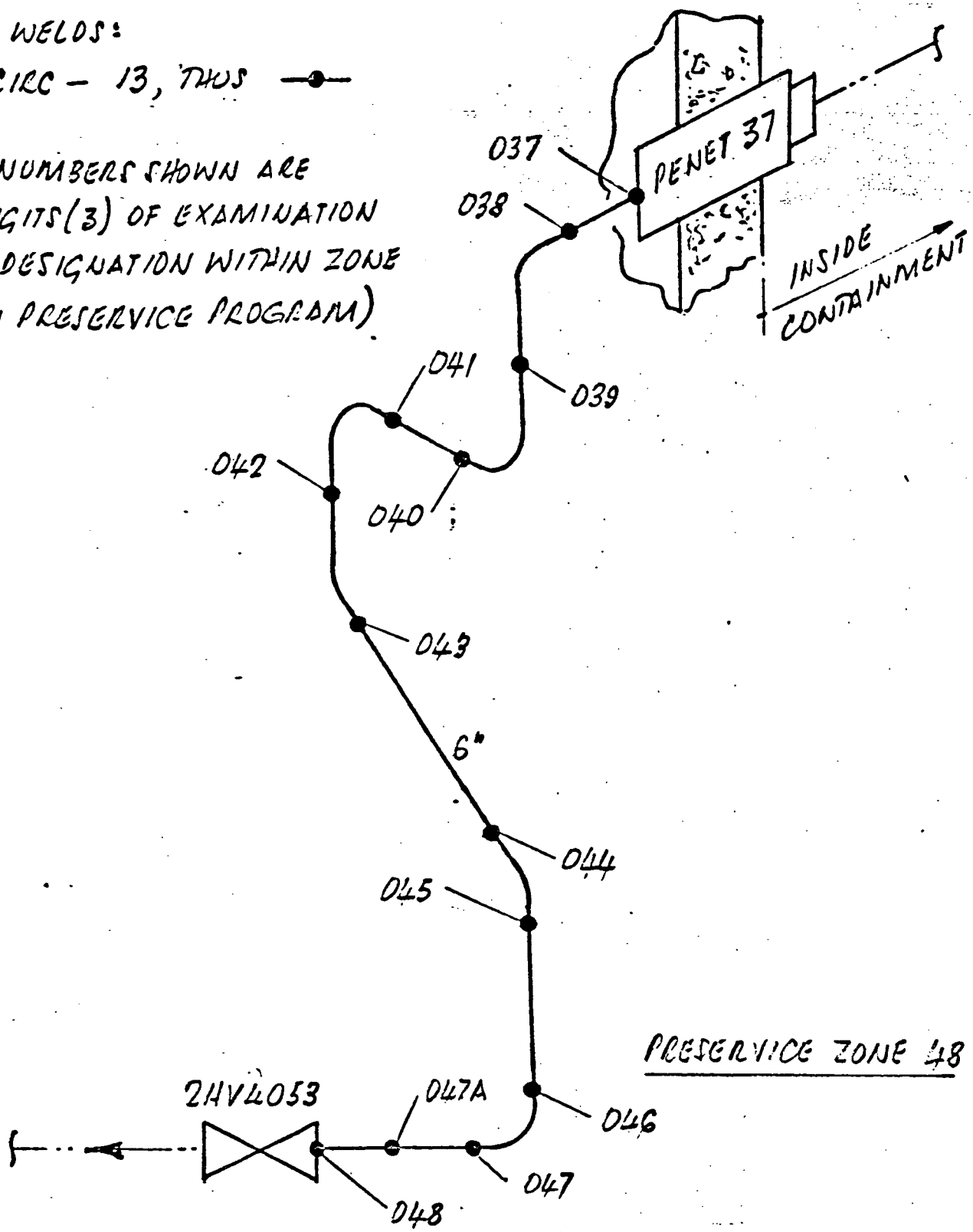
MAINSTEAM SYSTEM - SG #2

LINE 1301-001

TOTAL WELDS:

-CIRC - 13, THUS —●—

WELD NUMBERS SHOWN ARE LAST DIGITS (3) OF EXAMINATION AREA DESIGNATION WITHIN ZONE (FROM PRESERVICE PROGRAM)



PRESERVICE ZONE 48

AUGMENTED ISI BOUNDARY

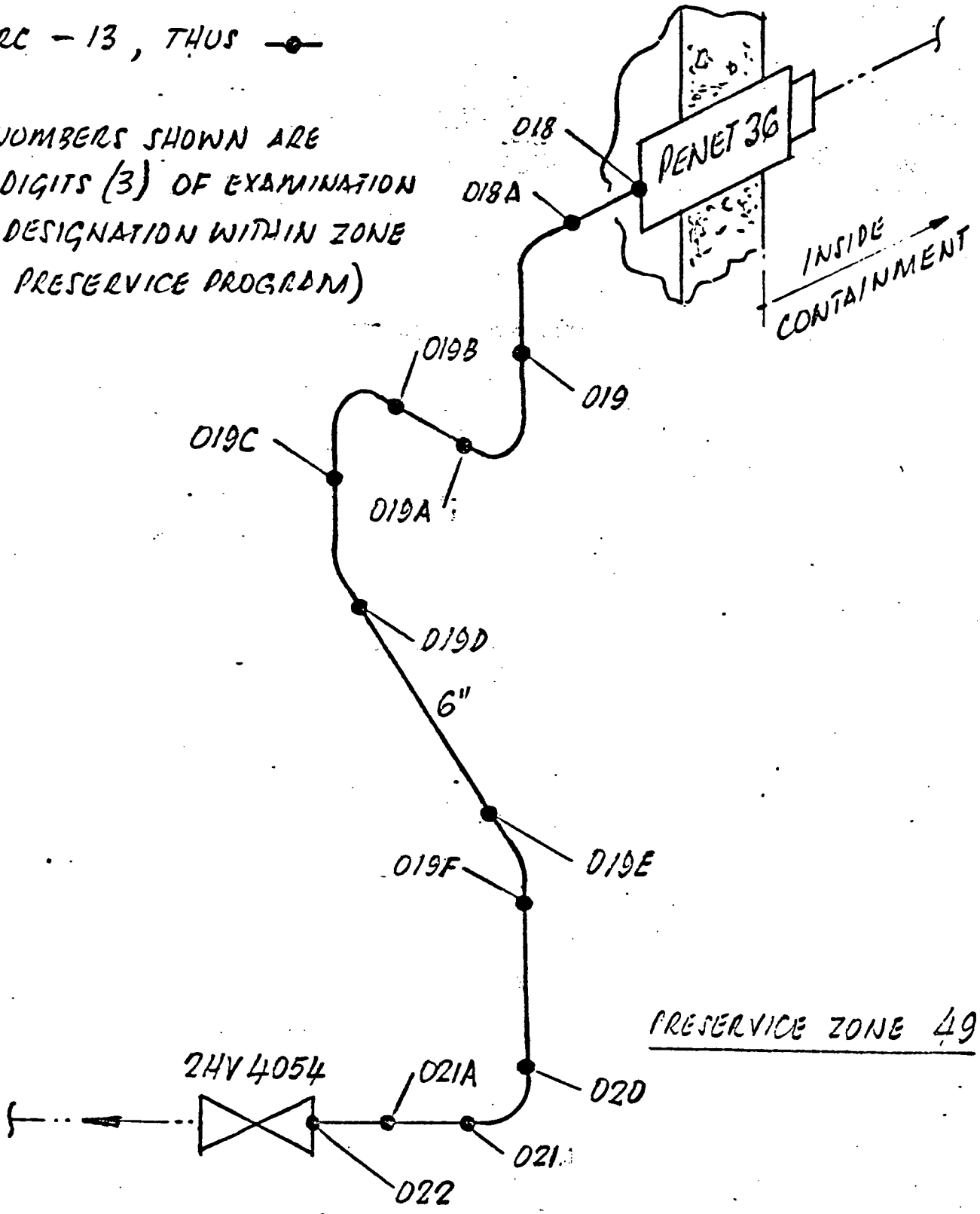
CONTINUOUS BLOWDOWN LINE - SG #1

LINE 1301-016

TOTAL WELDS:

-CIRC - 13, THUS —●—

WELD NUMBERS SHOWN ARE LAST DIGITS (3) OF EXAMINATION AREA DESIGNATION WITHIN ZONE (FROM PRESERVICE PROGRAM)



AUGMENTED ISI BOUNDARY

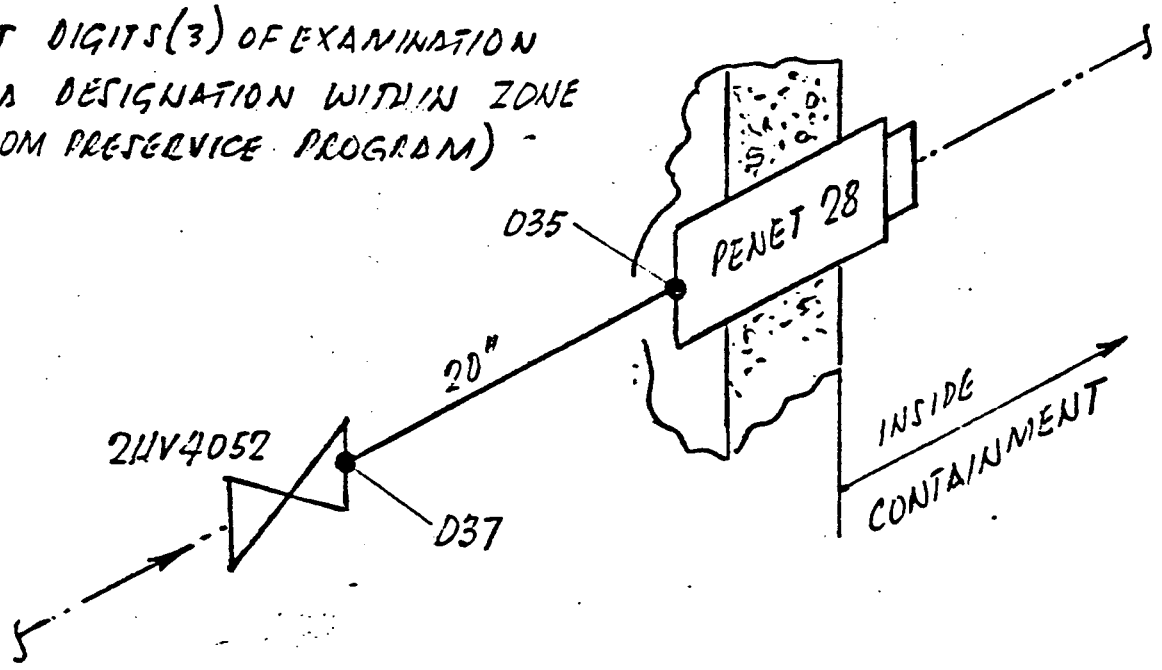
CONTINUOUS BLOWDOWN LINE- SG #2

LINE 1301-015

TOTAL WELDS :

· CIRC — 2 , THUS —●—

WELD NUMBERS SHOWN ARE LAST DIGITS (3) OF EXAMINATION AREA DESIGNATION WITHIN ZONE (FROM PRESERVICE PROGRAM)



PRESERVICE ZONE 44

AUGMENTED ISI BOUNDARY

MAIN FEEDWATER SYSTEM — SG #1

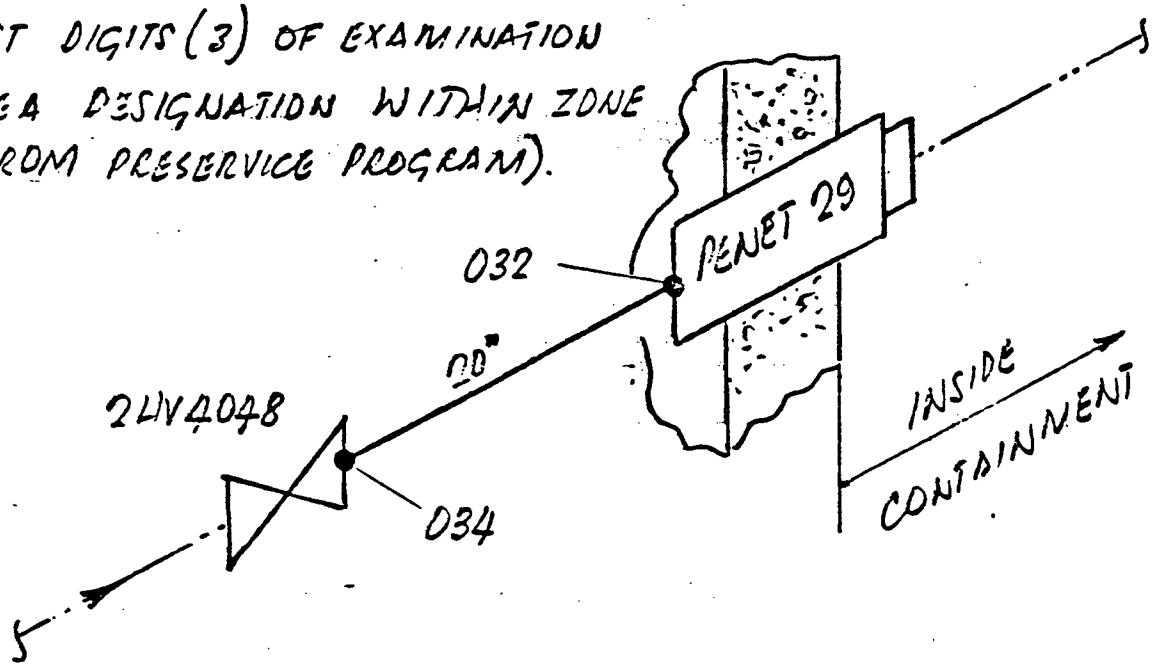
LINE # 1305-190

SKETCH 7

TOTAL WELDS:

- CIRC. — 2, THUS. —●—

WELD NUMBERS SHOWN ARE LAST DIGITS (3) OF EXAMINATION AREA DESIGNATION WITHIN ZONE (FROM PRESERVICE PROGRAM).



PRESERVICE ZONE 45

AUGMENTED ISI BOUNDARY

MAIN FEEDWATER SYSTEM - SG - #2

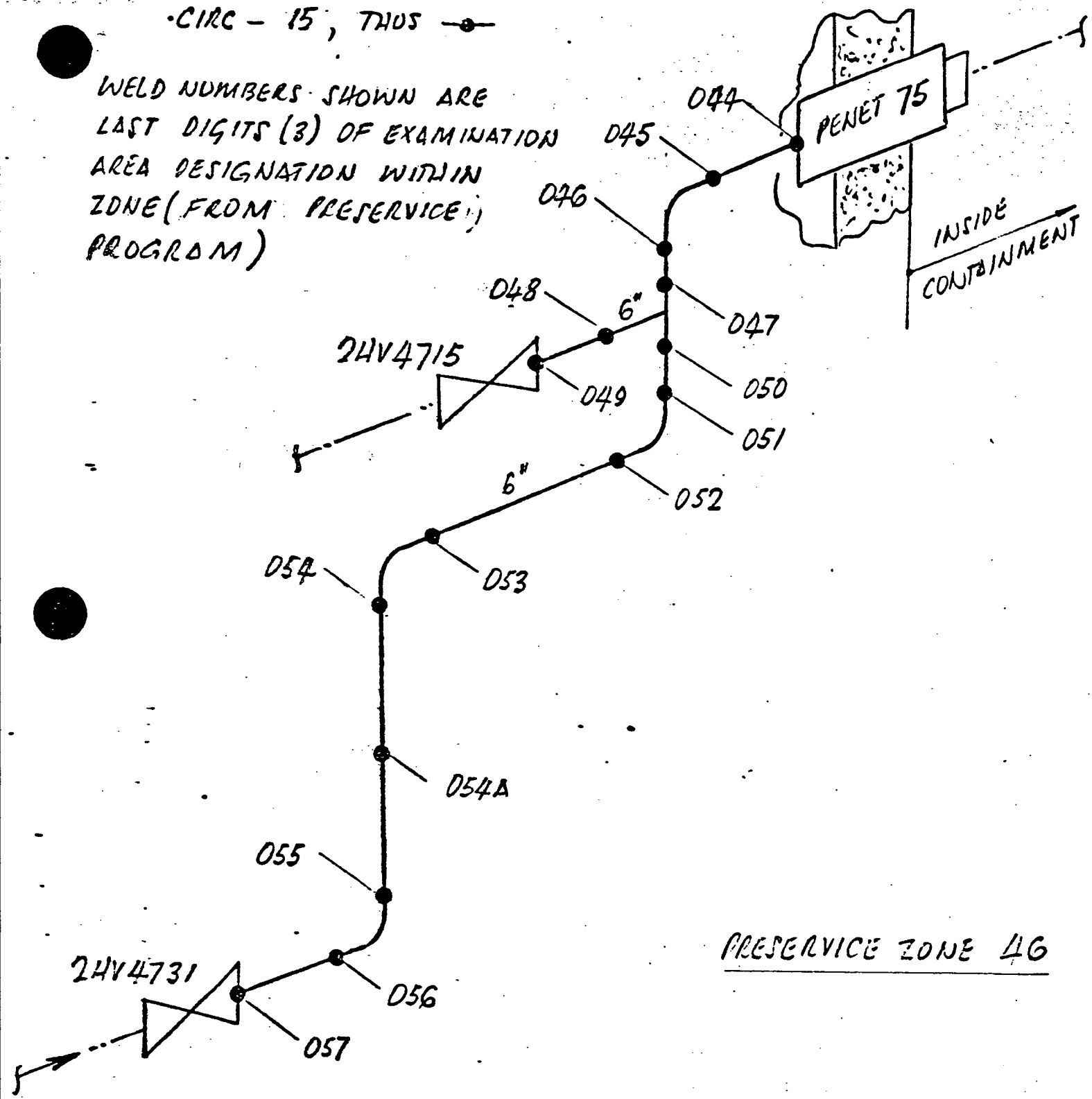
LINE 1305-189

SKETCH 8

TOTAL WELDS:

·CIRC – 15, THUS —●—

WELD NUMBERS SHOWN ARE LAST DIGITS (3) OF EXAMINATION AREA DESIGNATION WITHIN ZONE (FROM PRESERVICE PROGRAM)



PRESERVICE ZONE 46

AUGMENTED ISI BOUNDARY

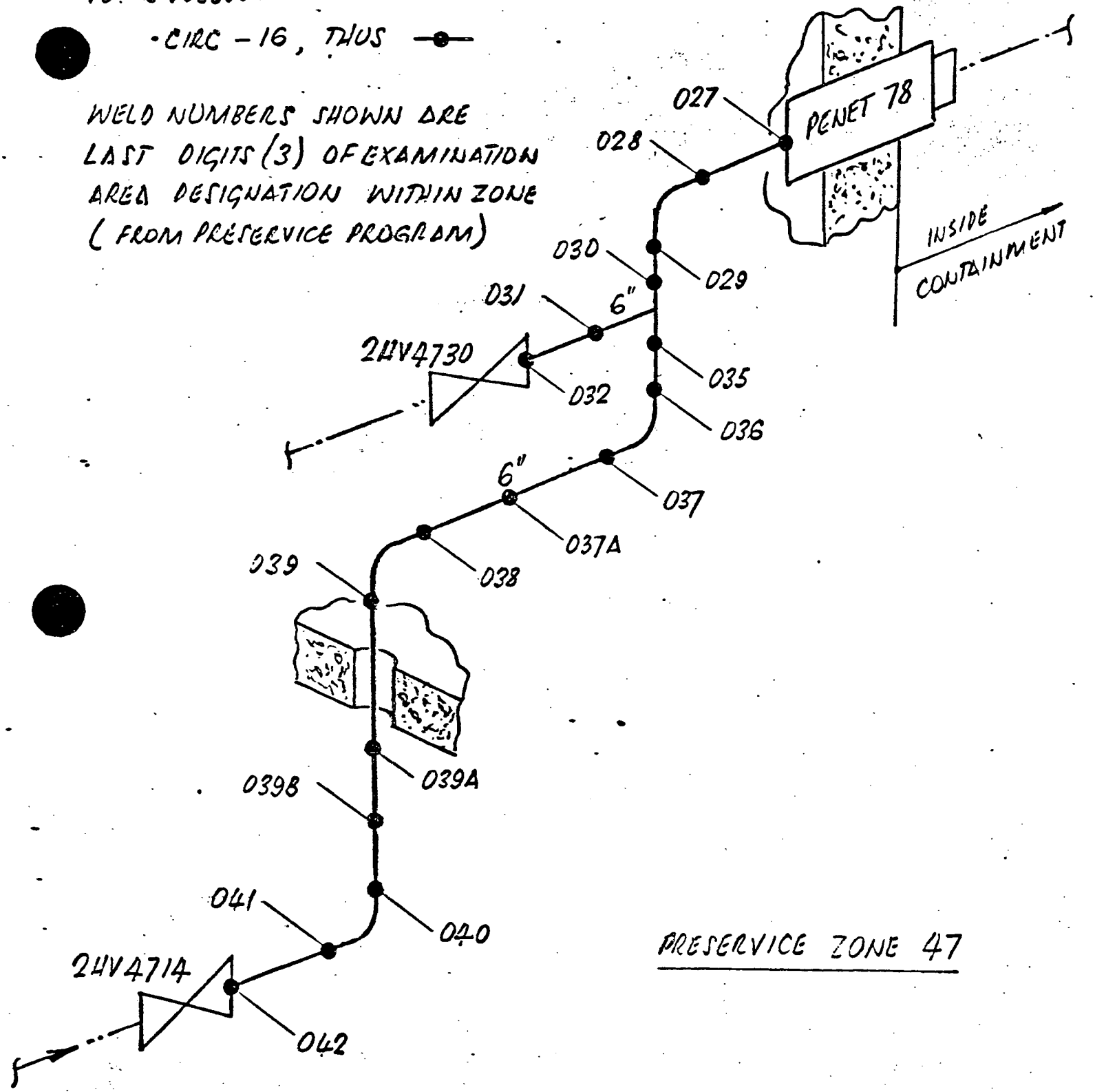
AUXILIARY FEEDWATER SYSTEM - SG #1

LINE 1305-223

TOTAL WELDS:

- CIRC - 16, THUS —●—

WELD NUMBERS SHOWN ARE LAST DIGITS (3) OF EXAMINATION AREA DESIGNATION WITHIN ZONE (FROM PRESERVICE PROGRAM)



PRESERVICE ZONE 47

AUGMENTED ISI BOUNDARY

AUXILIARY FEEDWATER SYSTEM - SG #2

LINE 1305-222

APPENDIX E

RELIEF REQUESTS FOR ISI EXCEPTIONS

The following items identify those areas where strict compliance with the inservice examination requirements of Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda is limited. Specific areas are delineated below. General reasons for limited compliance are lack of access, limitations of component design, geometry, materials of construction, lack of code requirements. Technically sound, reasonable alternatives have been imposed in these areas.

RELIEF REQUEST NO. B-1

SYSTEM:	Reactor Coolant System
COMPONENT:	Steam Generators, Pressurizer
EXAMINATION CATEGORY:	B-D
CLASS:	1
FUNCTION:	To provide a pressure boundary for primary coolant.
EXAMINATION REQUIREMENT:	Volumetrically examine the nozzle-to-shell weld from both sides of the weld.
BASIS FOR RELIEF:	The nozzle design on San Onofre steam generators and pressurizer has limited access on the nozzle forging side for conducting ultrasonic examination. Because of this restricted access, the volumetric examination will be performed from the vessel side only and not from the nozzle side.
ALTERNATE EXAMINATION:	No alternate examination will be performed.

RELIEF REQUEST NO. B-2

(deleted)

RELIEF REQUEST NO. B-3

(deleted)

RELIEF REQUEST NO. B-4

SYSTEM:	Reactor Coolant
COMPONENT:	Reactor Coolant, Safety Injection, Shutdown Cooling Piping
EXAMINATION CATEGORY:	B-J
CLASS:	1
FUNCTION:	To provide a pressure boundary for primary coolant.
EXAMINATION REQUIREMENT:	Piping branch connections exceeding 2" in diameter require a volumetric examination. The technique to be used requires that examinations be performed from both sides of the weld.
BASIS FOR RELIEF:	Restricted access and weld and nozzle design configurations prohibit volumetric examination from the nozzle forging (branch) side of the weld. Therefore, the volumetric examination will be conducted from the reactor coolant piping side only .
ALTERNATE EXAMINATION:	No alternate examination will be performed.

RELIEF REQUEST NO. B-5

SYSTEM:	Reactor Coolant, Safety Injection, Shutdown Cooling
COMPONENT:	Integrally welded attachments for piping, pumps and valves.
EXAMINATION CATEGORY:	B-K-1
CLASS:	1
FUNCTION:	To support piping, pumps and valves in the primary system.
EXAMINATION REQUIREMENT:	Integrally welded attachments receive a volumetric examination.
BASIS FOR RELIEF:	The 1977 Edition through Summer 1978 Addenda and ASME Section III require a surface examination only for these welds. In recognizing that the weld configuration is not conducive to UT and that the later Codes only require a surface examination, a volumetric examination will not be performed.
ALTERNATE EXAMINATION:	A surface examination will be performed in lieu of the volumetric examination.

RELIEF REQUEST NO. B-6

SYSTEM: All ASME Class 1 and 2 piping systems

COMPONENT: Class 1 piping greater than 1" nominal pipe size.
Class 2 piping greater than 4" nominal pipe size.

CLASS: 1 and 2

FUNCTION: To provide a pressure boundary to Class 1 and 2 systems.

EXAMINATION REQUIREMENT: UT examination of Class 1 or Class 2 ferritic steel piping systems shall be conducted in accordance with ASME Section V, Article 5.

BASIS FOR RELIEF: Since the 1977 Edition through Summer 1979 Addenda requirements of Paragraph IWA-2232 only requires recording of reflectors that produce a response greater than 50%, SCE sees no value in recording indications between 20% and 50%.

The present San Onofre Preservice Examination Program for recording of reflectors is verbatim identical to the Code which will be used inservice.

ALTERNATIVE EXAMINATION

None

RELIEF REQUEST NO. B-7

SYSTEM:	All Class 1 and 2 piping systems
COMPONENT/AREA:	Pressure retaining welds in pipes and fittings
EXAMINATION CATEGORY:	B-F, B-J and C-F
CLASS:	1 and 2
FUNCTION:	To provide a pressure boundary to Class 1 and 2 systems
EXAMINATION REQUIREMENT:	Volumetric and surface examination of applicable circumferential and longitudinal pressure retaining piping welds as per ASME Section XI Figure Nos. IWB-2500-8 and IWC-2520-7 (lower sketch) for Class 1 and 2 components, respectively.
BASIS FOR RELIEF:	Relief is requested from the above method of examination, referred to as "1/3 volumetric plus surface" examination, as a result of being unable to achieve comparability inservice with preservice examination results which were obtained using the "full" volumetric method. Further, in high radiation areas which necessitate the use of specialized equipment in order to perform remote examination, elimination of surface examination from the method used will enhance scheduling without impairing the ability to detect degradation of joint structural integrity.
ALTERNATE EXAMINATION:	Applicable circumferential and longitudinal pressure retaining piping welds will receive a "full" volumetric examination in lieu of a "1/3 volumetric plus surface" examination.

RELIEF REQUEST NO. C-1

SYSTEM:	Main Steam
COMPONENT:	Steam Generators
EXAMINATION CATEGORY:	C-B
CLASS:	2
FUNCTION:	To provide heat transfer from primary coolant and to supply steam to main turbine.
EXAMINATION REQUIREMENT:	Volumetrically examine the nozzle-to-shell weld from both sides of the weld.
BASIS FOR RELIEF:	The nozzle design on San Onofre steam generators has limited access on the nozzle forging side for conducting ultrasonic examinations. Because of this restricted access, the volumetric examination will be performed from the vessel side only and not from the nozzle side.
ALTERNATE EXAMINATION:	No alternate examination will be performed.

RELIEF REQUEST NO. C-2

SYSTEM: Emergency Cooling Systems

COMPONENT: Pressure retaining bolting on vessels, pumps and valves.

CLASS: 2

FUNCTION: To act as pressure-retaining elements of Class 2 component boundaries for ECC systems.

EXAMINATION REQUIREMENT: Visual and either surface or volumetric examination of pressure-retaining bolting exceeding 1-inch diameter.

BASIS FOR RELIEF: The 1974 Edition and Addenda through Summer 1975 of ASME Section XI of the Code version will be used to meet the inservice inspection requirements for examination of bolting in systems of the above class and type. This follows the Code version used to meet the preservice inspection requirements. In the reference Code version, Examination Category C-D of Tables IWC-2520 and IWC-2600 identify visual and either surface or volumetric examination as the applicable examination methods for bolting exceeding 1-inch in diameter. Summer 1976 Addenda to Section XI subsequently replaced these requirements by calling for volumetric examination only of bolting exceeding 2 inch diameter. No reference was made to examination of bolting less than 2 inch diameter. Consequently, it is planned to examine bolting consistent with the requirements of Summer 1976 Addenda which corrected an omission in the earlier Code version.

ALTERNATE EXAMINATION: Examination of pressure-retaining bolting exceeding 2 inch diameter by the volumetric method; bolting 2 inch diameter and less will be examined by the visual method.

RELIEF REQUEST NO. C-3

SYSTEM:	All systems
COMPONENT:	Piping
EXAMINATION CATEGORY:	C-F
CLASS:	2
FUNCTION:	To provide a pressure boundary for Class 2 systems, ECCS and non-ECCS.
EXAMINATION REQUIREMENT:	Surface and volumetric examination of longitudinal welds in piping > 1/2 in. nominal wall thickness. Surface examination of longitudinal welds in piping $\leq$ 1/2 in. nominal wall thickness. Weld length examined - 2.5t.
BASIS FOR RELIEF:	The Code version used to meet the preservice requirements for examination of longitudual welds in piping was the 1974 Edition and Addenda through the Summer 1975 Addenda of ASME Section XI. These requirements called for volumetric examination covering 100% of the weld length in pipe fittings only, no requirements were identified for pipe welds. The inspection program planned for inservice will follow the 1977 Edition and Addenda through the Summer 1979 Addenda of ASME Section XI, subject to the limitation imposed by 10CFR50.55a (b) (2) (iv) for ECCS. This limitation requires the extent of examination of appropriate pipe welds in ECCS to be determined in accordance with the 1974 Edition and Addenda through the Summer 1975 Addenda of ASME Section XI. In reverting to the use of the earlier Code version for inservice examination of ECCS, it is presumed that it is not the intent of the Commission to omit requirements for longitudual welds in pipes, as is the case with the 1974 Edition of the Code. Consequently, it is planned to examine the applicable longitudual welds in pipes and fittings of both the ECCS and non-ECCS in accordance with the 1977 Edition and Addenda through the Summer 1979 Addenda. The requirements of this Code version call for examination of longitudual welds over a length of 2.5t at intersecting circumferential welds to be examined.

RELIEF REQUEST NO. C-3 (continued)

ALTERNATE EXAMINATION: Examination of applicable longitudual welds by the methods prescribed will cover a length of 2.5t in pipes and fittings in lieu of a length of 100% in fittings only.

RELIEF REQUEST NO. C-4

SYSTEM:	Shutdown Cooling
COMPONENT:	Shutdown Cooling Heat Exchangers
EXAMINATION CATEGORY:	C-B
CLASS:	2
FUNCTION:	To provide cooldown of containment spray pump discharge by means of component cooling water.
EXAMINATION REQUIREMENT:	Examination of nozzles in vessels by the surface method for 1/2 inch on less nominal wall thickness, and by the surface and volumetric method for over 1/2 inch nominal thickness.
BASIS FOR RELIEF:	Nozzles of the shutdown cooling water heat exchangers are provided with reinforcing saddles fillet welded to the nozzles and to the heat exchanger shells, thus making the nozzle-to-vessel welds inaccessable for examination.
ALTERNATE EXAMINATION:	Surface examination of fillet welds attaching saddle-to-vessel and saddle-to-nozzle will be performed in lieu of examination of nozzle-to-vessel weld made inaccessable by nozzle reinforcing saddle.

PUMP RELIEF REQUEST NO. 1

SYSTEM: Safety Related Systems.

COMPONENT: All pumps in the program.

CLASS: Class 2 and 3.

FUNCTION: To provide flow to safety systems.

TEST REQUIREMENT: The requirements of IWP-3230 (b), Required Action.

BASIS for RELIEF: Relief is requested from the requirements of IWP 3230 (b) regarding declaring the pump inoperative prior to an analysis of test results.

There are many causes, external of a pump, which can cause deviations from a reference value. Some causes are: changes in fluid density, buss voltage variations, vibration increases caused by other machines in the area of the pump, and test instruments drifting out of calibration. Some means should be allowed for conducting an analysis prior to determining a pump's operability. The analysis should demonstrate that the condition of a pump does not impair pump operability and that the pump can still perform its intended function.

ALTERNATE TESTING: All test data shall be analyzed, and pump operability status declared within 96 hours after completion of a test. If a deviation in the test parameters fall within the "Required Action Range", pump operability and corrective action will be based on an analysis determining the cause of the deviation(s). If the cause is determined to be external of the pump, the condition shall be analyzed and accounted for. Where it is determined that instrument calibration is required, this will be performed and the test rerun. If the retest and/or further analysis indicates the pump cannot perform its intended function, the pump will be declared inoperable.

PUMP RELIEF REQUEST NO. 3

SYSTEM:	Diesel Fuel Transfer; Salt Water Cooling
COMPONENT:	Pumps P093, P094, P095, P096; P112, P113, P114, P307
CLASS:	Class 3
FUNCTION:	To provide makeup fuel to diesel generator day tank; to provide cooling to CCW heat exchanger.
TEST REQUIREMENT:	Measure pump bearing temperature per Sub-Article IWP-3100.
BASIS FOR RELIEF:	Relief is requested from the requirement to measure pump bearing temperature for these submerged pumps. The pump bearings are submerged and not accessible.
ALTERNATE TESTING:	None.

NOTE: Pump Relief Request No. 2 has been deleted.

PUMP RELIEF REQUEST NO. 4

SYSTEM: Safety Related Systems

COMPONENT: All pumps in the program

CLASS: Class 2 and 3

FUNCTION: To provide flow to safety systems

TEST REQUIREMENT: An inservice test shall be run on each pump nominally each month during normal plant operation.

BASIS FOR RELIEF: Relief is requested from the requirements of Sub-Article IWP-3400(a) regarding monthly testing of each pump. The experience of the industry has shown that the statistical failure rate of these pumps is such that monthly surveillance testing is not justified. The statistics do, however, justify testing on a quarterly basis. Later editions of the Code allow surveillance testing on a quarterly basis.

ALTERNATE TESTING: Inservice testing shall be accomplished on each pump at least once every 3 months. The exception to this will be the Auxiliary Feedwater pumps which will be tested monthly per Technical Specification requirements.

VALVE RELIEF REQUEST NO. 1

SYSTEM:	Reactor Coolant
COMPONENT:	3-152-A-551 (check valve)
CATEGORY:	AC
CLASS:	1

CANCEL: VALVE JUSTIFICATION MOVED TO COLD SHUTDOWN TABLE

VALVE RELIEF REQUEST NO. 2

SYSTEM:	Safety Injection
COMPONENT:	24-001-C-724 (Split Disc Check Valve) 24-002-C-724 (Split Disc Check Valve)
CATEGORY:	C
CLASS:	2
FUNCTION:	These valves open to allow a flow of water from the refueling water tank to the suction piping of the HPSI, LPSI and containment spray pumps.
TEST REQUIREMENT:	Exercise the valves every three months.
BASIS FOR RELIEF:	These valves cannot be full stroke exercised during power operation because the LPSI and HPSI pumps cannot overcome the reactor coolant system pressure. During cold shutdown these valves cannot be full stroke exercised because the LPSI pumps are aligned to take suction from the reactor coolant system bypassing the refueling water tank.
ALTERNATE TESTING:	These valves will be part stroke exercised quarterly and full stroke exercised by unbolting and removing valve to allow hand stroking of each valve during reactor refueling outages.

VALVE RELIEF REQUEST NO. 3

SYSTEM:	Safety Injection
COMPONENT:	24-003-C-724 (Split Disc Check Valve) 24-004-C-724 (Split Disc Check Valve)
CATEGORY:	C
CLASS:	2
FUNCTION:	These valves open to provide recirculation flow from the containment sump to the suction piping of the HPSI, LPSI and containment spray pumps.
TEST REQUIREMENT:	Exercise the valves every three months.
BASIS FOR RELIEF:	During normal plant operation there is no water in the containment sump, hence no water available to flow through these check valves. In addition, these valves may not be part stroke exercised without draining part of the emergency core cooling system piping. These lines must be filled and vented while Modes 1, 2 or 3.
ALTERNATE TESTING:	These valves will be full stroke exercised during reactor refueling outages by unbolting and removing valve to allow hand stroking of each valve.

VALVE RELIEF REQUEST NO. 4

SYSTEM:	Safety Injection
COMPONENT:	3-155-C-551 (Check Valve)
CATEGORY:	C
CLASS:	2

CANCEL: VALVE JUSTIFICATION MOVED TO COLD SHUTDOWN TABLE

VALVE RELIEF REQUEST NO. 5

SYSTEM:	Safety Injection
COMPONENT:	3-156-A-551 (Check Valve)
CATEGORY:	AC
CLASS:	1

CANCEL: VALVE JUSTIFICATION MOVED TO COLD SHUTDOWN TABLE

VALVE RELIEF REQUEST NO. 6

SYSTEM:	Safety Injection
COMPONENT:	3-157-A-550 (Check Valve) 3-158-A-550 (Check Valve)
CATEGORY:	AC
CLASS:	1

CANCEL: VALVE JUSTIFICATION MOVED TO COLD SHUTDOWN TABLE

VALVE RELIEF REQUEST NO. 7

SYSTEM:	Safety Injection
COMPONENT:	4-012-C-358 (Stop Check Valves) 4-015-C-358 (Stop Check Valves) 4-016-C-358 (Stop Check Valves)
CATEGORY:	C
CLASS:	2

CANCEL: VALVE JUSTIFICATION MOVED TO COLD SHUTDOWN TABLE

VALVE RELIEF REQUEST NO. 8

SYSTEM:	Safety Injection
COMPONENT:	10-006-C-675 (Check Valves) 10-008-C-675 (Check Valves)
CATEGORY:	C
CLASS:	2
FUNCTION:	These valves open to allow a flow of water into the suction piping of the high pressure safety injection pumps.
TEST REQUIREMENT:	Exercise the valves every three months.
BASIS FOR RELIEF:	This check valve cannot be full stroke exercised during power operations because the high pressure safety injection pumps cannot overcome reactor coolant system pressure. During cold shutdown full stroke exercising this valve could result in a low temperature overpressurization of the reactor coolant system.
ALTERNATE TESTING:	These valves will be full stroke exercised at each refueling, while using the high pressure safety injection pumps to fill the refueling pool canal, and part stroke exercised quarterly during routine inservice testing of the HPSI pumps.

VALVE RELIEF REQUEST NO. 9

SYSTEM:	Safety Injection
COMPONENT:	4-017-C-553 (Check Valves)
CATEGORY:	C
CLASS:	2

CANCEL: VALVE JUSTIFICATION MOVED TO COLD SHUTDOWN TABLE

VALVE RELIEF REQUEST NO. 10

SYSTEM:	Safety Injection
COMPONENT:	3-018-A-551 (Check Valves) 3-019-A-551 (Check Valves) 3-020-A-551 (Check Valves) 3-021-A-551 (Check Valves)
CATEGORY:	AC
CLASS:	1

CANCEL: VALVE JUSTIFICATION MOVED TO COLD SHUTDOWN TABLE

VALVE RELIEF REQUEST NO. 11

SYSTEM:	Safety Injection
COMPONENT:	12-040-A-551 (Check Valves) 12-041-A-551 (Check Valves) 12-042-A-551 (Check Valves) 12-043-A-551 (Check Valves)
CATEGORY:	AC
CLASS:	1
FUNCTION:	These valves open to allow a flow of water from the safety injection tanks into the safety injection header of each primary loop.
TEST REQUIREMENT:	Exercise the valves every three months.
BASIS FOR RELIEF:	These check valves cannot be stroked during normal operation without violating the Technical Specification requirements for safety injection tank pressure and level bands. In addition, these valves cannot be full stroked except under actual loss of coolant accident conditions, i.e. no full flow path available.
ALTERNATE TESTING:	These valves will be partial stroke exercised during cold shutdown, and disassembled and hand stroke exercised during reactor refueling outage.

VALVE RELIEF REQUEST NO. 12

SYSTEM: Safety Injection

COMPONENT:
16-077-C-645 (Check Valve)
16-084-C-645 (Check Valve)
16-199-C-645 (Check Valve)
16-201-C-645 (Check Valve)

CATEGORY: C

CLASS: 2

FUNCTION: These valves open to allow a flow of water from the refueling water tank into the suction piping of the low pressure safety injection pumps.

TEST REQUIREMENT: Exercise these valves every three months.

BASIS FOR RELIEF: These check valves cannot be full stroke exercised during power operation because the low pressure safety injection pumps cannot overcome reactor coolant system pressure. During cold shutdown and refueling the LPSI pumps are used for the shutdown cooling system which bypasses these check valves by taking suction directly from the RCS.

ALTERNATE TESTING: These valves will be partial stroke exercised during periodic tests of the low pressure safety injection pumps during normal operation. Mini-flow tests will be conducted every three months. These valves will be full stroke exercised every refueling outage by disassembling and hand stroking each valve.

VALVE RELIEF REQUEST NO. 13

SYSTEM:	Safety Injection
COMPONENT:	8-004-C-406 (Stop Check Valve) 8-006-C-406 (Stop Check Valve)
CATEGORY:	AC
CLASS:	2
FUNCTION:	These valves open to allow a flow of water from the containment spray pump discharge into the containment spray ring headers.
TEST REQUIREMENT:	Exercise the valves every three months.
BASIS FOR RELIEF:	These check valves cannot be tested in any plant Mode without resulting in a spray down of the containment.
ALTERNATE TESTING:	These valves will be disassembled and hand stroke exercised during reactor refueling.

VALVE RELIEF REQUEST NO. 14

SYSTEM:	Chemical & Volume Control
COMPONENT:	2-122-A-554
CATEGORY:	AC
CLASS:	2
FUNCTION:	This valve opens to allow normal charging flow to the reactor coolant system. In addition, this valve is a containment isolation valve in the event of a charging line rupture.
TEST REQUIREMENT:	Verify valve opens and closes every three months.
BASIS FOR RELIEF:	Verifying closure of this valve requires a seat leak test (Appendix "J"). Seat leak testing of this valve requires isolating normal charging and draining a portion of the charging line. This would violate Technical Specification 3.1.2.2 which requires two boration flow paths.
ALTERNATE TESTING:	This valve will be verified closed during refueling outages while performing Appendix "J" test. Also, this valve will be exercised open quarterly during routine inservice testing of the charging pumps.

VALVE RELIEF REQUEST NO. 15

SYSTEM:	Normal HV & AC
COMPONENT:	HV-7800 HV-7805 HV-7801 HV-7806 HV-7802 HV-7810 HV-7803 HV-7811
CATEGORY:	A
CLASS:	2
FUNCTION:	Containment air radioactivity monitor isolation valves. These valves close on CIAS.
TEST REQUIREMENT:	Exercise these valves every three months.
BASIS FOR RELIEF:	Actuation of these valves will isolate containment purge isolation signal (CPIS) airborne instrumentation. CPIS terminates purge on high airborne activity.
ALTERNATE TESTING:	These valves will be exercised quarterly, provided containment purge is not in progress; if containment purge is in progress, these valves will be exercised after containment purge is secured.

VALVE RELIEF REQUEST NO. 16

SYSTEM:	All Systems
COMPONENT:	All power operated valves
CATEGORY:	A and B
CLASS:	1, 2 and 3
FUNCTION:	N. A.
TEST REQUIREMENT:	During surveillance testing, if there is an increase in stroke time of 50% or more from the previous test for valves with stroke times less than or equal to 10 seconds is observed, the test frequency shall be increased to once each month until corrective action is taken.
BASIS FOR RELIEF:	It has been observed through surveillance testing and corrective action that the repeatability of valve stroke times for valves with short stroke times is sporadic and independent of degradation.
ALTERNATE TESTING:	Valves with stroke times of 5 seconds or less with an increase in stroke time of 50% or more shall not have the test frequency increased. However, if a valve stroke time does exceed its maximum stroke time value, it shall be declared inoperable.

VALVE RELIEF REQUEST NO. 17

SYSTEM:	Containment Spray
COMPONENT:	2-159-C-611
CATEGORY:	C
CLASS:	2
FUNCTION:	This valve operates as a vacuum breaker for the Spray Chemical Storage Tank. If the nitrogen cover pressure fails and the spray chemical addition pumps start, this valve will open to allow atmospheric pressure into the tank to prevent cavatation of these pumps.
TEST REQUIREMENT:	Exercise valve every three months.
BASIS FOR RELIEF:	The physical configuration of this valve installation does not permit exercising during power operation. Mechanical actuation of this valve during power operation could spray caustic soda resulting in personal injury.
ALTERNATE TESTING:	This valve will be disassembled and hand stroke exercised during refueling outage.

VALVE RELIEF REQUEST NO. 18

SYSTEM:	Main Steam
COMPONENT:	Check Valve 4-003-D-620 Check Valve 4-005-D-620
CATEGORY:	C
CLASS:	3
FUNCTION:	These valves are in the main steam supply to the turbine-driven auxiliary feedwater pump. In the event of a main steam line break, these valves provide reverse flow check to isolate the affected steam generator.
TEST REQUIREMENT:	Exercise these valves every three months.
BASIS FOR RELIEF:	These valves cannot be reverse flow checked during normal operation as there is no positive means of verifying that the valve disc travels to the closed position. The noise level in the immediate area of the valves precludes the use of acoustic sensing devices. In addition, the plant design does not provide for a method of verifying that a pressure differential exists across the valve when it is in the closed position.
ALTERNATE TESTING:	These valves will be reverse flow checked during reactor refueling outages by unbolting the valve bonnet and visually verifying that the disc is in the closed position. These valves will continue to be full stroked open every three months.

VALVE RELIEF REQUEST NO. 19

SYSTEM:	Normal HV and AC
COMPONENT:	HV 9948 HV9950 HV 9949 HV9951
CATEGORY:	A
CLASS:	2
FUNCTION:	Containment Normal Purge
TEST REQUIREMENT:	Exercise these valves every three months.
BASIS FOR RELIEF:	The 42-inch containment normal purge supply and exhaust isolation valves are required by the Technical Specifications to be sealed closed in Modes 1, 2, 3 and 4. In addition, the valves often remain sealed closed in Mode 5. When sealed closed, the valves are passively performing their safety function (i.e., containment isolation); the valves are only required to perform an active safety function (i.e., purge isolation) if the containment normal purge system is placed in service and containment integrity is also required. The containment normal purge valves are specifically required to be operable only during heavy lifts over the Reactor Coolant System (in Mode 5) and during refueling operations (Mode 6).
ALTERNATE TESTING:	The valves will be full-stroke exercised during cold shutdown as required to establish containment integrity, and during refueling as required by the Technical Specifications.

VALVE RELIEF REQUEST NO. 20

SYSTEM:	Main Feedwater
COMPONENT:	20-036-C-609 20-129-C-609
CATEGORY:	C
CLASS:	2
FUNCTION:	These check valves are in the main feedwater supply to the steam generators. During a loss of feedwater accident, these check valves will close isolating the main feedwater piping from auxiliary feedwater flow.
TEST REQUIREMENT:	Exercise these valves every three months.
BASIS FOR RELIEF:	These valves cannot be reversed flow checked during power operation without isolating main feedwater flow to the steam generators. In addition, the plant design does not provide for a method of verifying that a pressure differential exists across the valve when it is in the closed position.
ALTERNATE TESTING:	The valves will be reversed flow checked during reactor refueling outages by unbolting the valve bonnet and visually verifying that the disc is in the closed position.

INSERVICE TESTING PROGRAM
SAN ONOFRE - UNIT 2

Valve Relief Request No. 21

SYSTEM: Main Steam

COMPONENT: HV-8204
HV-8205

CATEGORY: B

CLASS: 2

FUNCTION: Main Steam Isolation Valves.

These valves close on MSIV and CIAS to significantly reduce steam flow from the steam generators.

TEST REQUIREMENT: Part stroke exercise the valves every 3 months.

BASIS FOR REVISION: The part stroke exercise is not practical.

There is no increase in failure rate in any safety system component in an unconservative direction. The degradation resulting from the part stroke testing during operation makes it difficult to maintain the valve open for power operation. The damage and required repairs are an undue burden.

Even had an MSIV failure in an unconservative direction occurred, a single failure has been evaluated and found to be acceptable.

The ASME B&PV Code, Section XI, Paragraph IWV-3412(a) states that the part stroke exercise need not be performed during power operation.

ALTERNATE TESTING: The valve will be full stroke exercised during cold shutdown conditions on a frequency required by ASME, B&PV Code, Section XI, Paragraph IWV-3412(a).

APPENDIX F

PLANT TECHNICAL SPECIFICATONS

TABLE 1

TECHNICAL SPECIFICATIONS RELATED TO THE ISI PROGRAM

4.0.5	ISI program requirements; Bases for 4.0.5
4.4.2	Safety Valves
4.4.4	Steam Generators
4.4.5	Reactor Coolant System Leakage
4.4.8	RCS Overpressure Protection
4.4.9	Structural Integrity
4.5.1	Safety Injection Tanks
4.5.2	ECCS
4.6.1	Containment Integrity
4.6.2	Containment Spray System
4.6.3	Containment Isolation Valves
4.7.1	Main Steam Isolation Valves
4.7.3	Component Cooling Water System
4.7.4	Salt Water Cooling System
4.7.6	Snubbers; Bases for 4.7.6
4.9.4	Containment Penetrations
4.9.8	Shutdown Cooling System
4.9.9	Containment Purge Isolation Valves
6.8	Procedures and Programs
6.9	Reporting Requirements
6.10	Record Retention
6.11	Radiation Protection

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