Enclosure to AEP-NRC-2010-21

Donald C. Cook Nuclear Plant
Units 1 & 2

ISI Program Plan
Fourth Ten-Year Inspection Interval

Donald C. Cook Nuclear Plant
Units 1 & 2

ISI Program Plan
Fourth Ten-Year Inspection Interval

Commercial Service Date:

Unit 1 - August 23, 1975
Unit 2 - July 1, 1978

Donald C. Cook Nuclear Plant
One Cook Place
Bridgman, MI 49106

Indiana Michigan Power Company
PO Box 60
Ft. Wayne, IN 46801

Prepared By:
Alion Science and Technology Corporation
Engineering Programs Division
Warrenville, Illinois

REVISION APPROVAL SHEET

TITLE: ISI Program Plan
Fourth Ten-Year Inservice Inspection Interval
Donald C. Cook Nuclear Plant, Units 1 & 2

DOCUMENT NUMBER: DCC01.G03 REVISION: 0

PROGRAM ACCEPTANCE

PREPARED: Paul R. Donavin / 10-23-2009
Paul R. Donavin
ISI Program Owner

REVIEWED: / 10-23-2009
Jeffrey R. Fary
Pressure Testing Program Owner

REVIEWED: James M. Fitchuk / 10-23-09
James M. Fitchuk
Containment/Snubber Program Owner

REVIEWED: Reuel K Schenck / 10-23-2009
Reuel K. Schenck
Authorized Nuclear Inservice Inspector (ANII)

APPROVED: Carl R Lane / 11/2/09
Carl R. Lane
Engineering Programs Manager

Each time this document is revised, the Revision Approval Sheet will be signed and the following Revision Control Sheet should be completed to provide a record of the revision history. The signatures above apply only to the changes made in the revision noted. Signatures for superseded revisions are retrievable through Donald C. Cook Nuclear Plant archives.

REVISION CONTROL SHEET

Major changes should be outlined within the table below. Minor editorial and formatting revisions are not required to be logged.

REVISION	DATE	REVISION SUMMARY
0	09/30/09	Initial issuance. (This ISI Program Plan was developed by Alion Science and Technology Corporation as part of the Fourth Interval ISI Program Update.) Prepared: D. Windhorst Reviewed: S. Coleman Approved: D. Lamond

Notes:

1. This ISI Program Plan is controlled by the Donald C. Cook Nuclear Plant Engineering Programs Inservice Inspection Group.
2. Revision 0 of this document was issued as the Fourth Interval ISI Program Plan and was submitted to the NRC for review, including approval of the initial Fourth Inservice Inspection Interval Relief Requests. Future revisions of this document made within the Fourth Inservice Inspection Interval will be maintained and controlled at the Donald C. Cook Nuclear Plant; however, they are not required to be and will not be submitted to the NRC for approval. The exception to this is that new or revised Relief Requests shall be submitted to the NRC for safety evaluation and approval.

TABLE OF CONTENTS

1.0 INTRODUCTION AND PLAN DESCRIPTION 1
1.1 Summary 1
1.2 Basis of the ISI Program Plan 3
1.3 System Classifications 7
1.4 Augmented Inservice Inspection Limitations on Section XI 12
1.5 Code of Federal Regulations 10CFR50.55a Requirements 19
1.6 Interpretations 25
1.7 Inservice Inspection Technical Positions 25

2.0 INSERVICE INSPECTION PROGRAM DRAWINGS 29
2.1 Piping Classifications 29
2.2 Operational Flow Diagrams 29
2.3 Inservice Inspection Isometrics 29

3.0 INSERVICE INSPECTION SUMMARY TABLES 35
3.1 ASME Section XI Inservice Inspections 35

4.0 ALTERNATIVE REQUIREMENTS TO ASME SECTION XI 76
4.1 Adoption of Code Cases 76
4.2 Use of Subsequent Editions of ASME Section XI 85
4.3 Inservice Inspection Relief Requests 85

5.0 RELIEF REQUESTS 86

6.0 SYSTEM PRESSURE TESTING 107
6.1 Introduction 107
6.2 Requirements 107
6.3 ASME Section XI Code 109
6.4 Implementation 110
6.5 Repair / Replacement Pressure Testing 110

7.0 SNUBBER EXAMINATION AND TESTING
7.1 Introduction 111
7.2 Requirements 111
7.3 Implementation 111
7.4 Code Relief Requests 112

LIST OF TABLES

TABLE 1-1, UNITS 1 & 2 FOURTH ISI INTERVAL/PERIOD/OUTAGE MATRIX.....6

TABLE 1-2, ISI CLASS DETERMINATION.....9

TABLE 1-3, CODE OF FEDERAL REGULATIONS 10CFR50.55a LIMITATIONS ...20

TABLE 1-4, ISI PROGRAM TECHNICAL POSITION INDEX.....26

TABLE 2-1, INSERVICE INSPECTION OPERATIONAL FLOW DIAGRAMS, UNIT 1.....30

TABLE 2-2, INSERVICE INSPECTION OPERATIONAL FLOW DIAGRAMS, UNIT 2.....32

TABLE 2-3, INSERVICE INSPECTION OPERATIONAL FLOW DIAGRAMS, UNITS 1 & 2 (COMMON).....34

TABLE 3-1, ASME SECTION XI INSERVICE INSPECTION SUMMARY TABLE UNIT 1.....36

TABLE 3-2, ASME SECTION XI INSERVICE INSPECTION SUMMARY TABLE UNIT 2.....56

TABLE 4-1, CODE CASES SUBMITTED FOR USE THROUGH RELIEF REQUESTS.....83

TABLE 5-1, ISI PROGRAM RELIEF REQUEST INDEX.....87

SECTION 1.0

INTRODUCTION AND PLAN DESCRIPTION

1.1 Summary

1.1.1 This Inservice Inspection (ISI) Program Plan outlines the requirements for the inspection of ISI Class 1, 2, and 3 pressure retaining components and their supports at the Donald C. Cook Nuclear Plant (CNP) Units 1 and 2.

1.1.2 This ISI Program Plan is effective for the Fourth ISI Interval from March 1, 2010 until February 29, 2020 for Units 1 and 2.

1.1.3 This document includes an Introduction and Plan Description, List of Operations Flow Diagrams, Summary Tables, Alternative Requirements, Relief Requests, and Pressure Testing Summary.

1.1.4 Details of the program are contained in documents available at CNP. These documents include operations flow diagrams, piping isometric drawings, a database listing of each item in the ISI Program, and procedures that implement various portions of the ISI Program.

1.1.5 This ISI Program Plan also supports the following CNP License Renewal Aging Management Programs:

- "Inservice Inspection - ASME Section XI, Subsections IWB, IWC, and IWD Program" [References: AEP:NRC:3034, Attachment 2, Appendix A, Section A.2.1.17 and Appendix B, Section B.1.14, dated October 31, 2003 (ML033070177 & ML033070182)].

- "Inservice Inspection - ASME Section XI, Subsection IWF Program" [References: AEP:NRC:3034, Attachment 2, Appendix A, Section A.2.1.19 and Appendix B, Section B.1.16, dated October 31, 2003 (ML033070177 & ML033070182)].

- "Inservice Inspection - ASME Section XI, Augmented Inspections Program" [References: a) AEP:NRC:3034, Attachment 2, Appendix A, Section A.2.1.21 and Appendix B, Section B.1.18, dated October 31, 2003 (ML033070177 & ML033070182), b) Commitment 8251].

- "Pressurizer Examinations Program" [References: a) AEP:NRC:3034, Attachment 2, Appendix A, Section A.2.1.27 and Appendix B, Section B.1.24, dated October 31, 2003 (ML033070177 & ML033070182), b) Commitment 8256].

- "Reactor Vessel Internals, Plates, Forgings, Welds and Bolting Program" [References: a) AEP:NRC:3034, Attachment 2, Appendix A, Section A.2.1.30

and Appendix B, Section B.1.27, dated October 31, 2003 (ML033070177 & ML033070182), b) Commitment 8260].

- "Reactor Vessel Internals Cast Austenitic Stainless Steel Program" [References: a) AEP:NRC:3034, Attachment 2, Appendix A, Section A.2.1.31 and Appendix B, Section B.1.28, dated October 31, 2003 (ML033070177 & ML033070182), b) Commitment 8259].

- "Cast Austenitic Stainless Steel Evaluation Program" [References: a) AEP:NRC:3034, Attachment 2, Appendix A, Section A.2.1.7 and Appendix B, Section B.1.7, dated October 31, 2003 (ML033070177 & ML033070182), b) Commitment 8247].

- "Small Bore Piping Program" [References: a) AEP:NRC:3034, Attachment 2, Appendix A, Section A.2.1.33 and Appendix B, Section B.1.30, dated October 31, 2003 (ML033070177 & ML033070182), b) Commitment 8262].

- "Alloy 600 Aging Management Program" [References: a) AEP:NRC:3034, Attachment 2, Appendix A, Section A.2.1.1 and Appendix B, Section B.1.1, dated October 31, 2003 (ML033070177 & ML033070182), b) Commitment 8244].

License Renewal background documentation and Nuclear Regulatory Commission (NRC) correspondence is to be considered when changing this ISI Program Plan.

1.1.6 Implementation of Risk Informed Inservice Inspection

The Risk Informed Inservice Inspection (RI-ISI) program changes comply with Code Case N-716. Tables are included in Section 3 of this ISI Program Plan, which itemize the Category R-A RI-ISI components that replace Examination Categories B-F, B-J, C-F-1, and C-F-2. Further details of the RI-ISI Program are contained in the Risk Informed ISI Program Analysis for the Fourth Ten-Year Inspection Interval (DCC01.G06). This document is simply a living program update to the original RI-ISI Program submittal AEP:NRC:6055-09, which was implemented during the Third Period of the Third Interval.

1.2 Basis of the ISI Program Plan

1.2.1 The ISI Program Plan was developed according to the requirements of 10CFR50.55a in effect on 03/01/09. The latest issuance of 10CFR50.55a on this date was the revision published in the Federal Register effective 10/10/08.

1.2.2 The ISI Program Plan was developed in accordance with the requirements of the 2004 Edition, No Addenda of the American Society of Mechanical Engineers (ASME), Boiler and Pressure Vessel (BPV) Code, Section XI, Subsections IWA, IWB, IWC, IWD, IWE, IWF, and IWL for Inspection Program B. The 2004 Edition, No Addenda of ASME Section XI will not be implemented for the following:

1.2.2.1 For ultrasonic examination qualification requirements of Section XI, Appendix VIII, the 2001 Edition, No Addenda shall be used per 10CFR50.55a(b)(2)(xxiv).

1.2.2.2 For piping weld examination requirements, RI-ISI (Code Case N-716) will be implemented per Relief Request ISIR-4-01 for component selection, examination techniques, successive examinations, and additional examinations.

1.2.3 The snubber inservice testing and visual examination requirements of Article IWF-5000.

1.2.3.1 ASME Section XI Paragraphs IWF-5200(a) and (b) and IWF-5300(a) and (b) require VT-3 Visual Examination and Inservice Tests of snubbers to be performed in accordance with the Operation and Maintenance of Nuclear Power Plants Standard (ASME OM Code). As allowed by 10CFR50.55a(b)(3)(v), DCC will use Subsection ISTD, "Inservice Testing of Dynamic Restraints (Snubbers) In Light Water Reactor Power Plants," ASME OM Code, 2004 Edition, No Addenda, to meet the requirements in ASME Section XI Paragraphs IWF-5200(a) and (b) and IWF-5300(a) and (b). Per 10CFR50.55a(b)(3)(v), visual examinations shall be performed using the VT-3 visual examination method described in Paragraph IWA-2213.

The extent, frequency, and acceptance standards for snubber assembly functional testing and visual inspection are according to ASME OM Code, 2004 Edition, No Addenda.

1.2.4 The following are not included or addressed in the ISI Program Plan:

1.2.4.1 The inspection of containment structures and liners per Subsections IWE and IWL.

The rules of Subsections IWE and IWL, as invoked by 10CFR50.55a, are contained in the Containment ISI Program Plan (DCC01.G04). Note that the CISI Plan is for the Second Ten-Year Containment Inspection Interval.

1.2.4.2 The Steam Generator tubing requirements of Table IWB-2500-1, Examination Category B-Q.

As allowed by ASME Section XI, Paragraph IWB-2413, the extent, frequency and acceptance standards for Steam Generator tubing inspection and testing is according to CNP Technical Specifications Section 5.5.7.

1.2.5 Alternative requirements to ASME Section XI are detailed in Section 4.0 of this ISI Program Plan.

1.2.6 With the exception of examinations that may be deferred to the end of the inspection interval as allowed by Table IWB-2500-1, inservice inspections shall be performed according to the requirements for Inspection Program B as outlined in Paragraphs IWA-2432, IWB-2412, IWC-2412, IWD-2412, and IWF-2410 of ASME Section XI. Deviations to inspection schedules may occur provided compliance with all applicable ASME Section XI requirements is maintained.

1.2.7 Successive inspections shall be according to Paragraphs IWB-2420, IWC-2420, IWD-2420, and IWF-2420.

1.2.8 The construction permits for CNP Units 1 and 2 were issued on March 25, 1969. Unit 1 began commercial operation on August 23, 1975, and Unit 2 began commercial operation on July 1, 1978.

1.2.9 On December 18, 1984, the NRC approved a request by CNP to align the interval start and end dates for Units 1 and 2.

1.2.10 The previous Third ISI Interval for CNP Units 1 and 2 started on July 1, 1996 and was originally scheduled to end on June 30, 2006. However, the inspection interval end date was revised in accordance with ASME Section XI, Paragraphs IWA-2430(d) and IWA-2430(e) to a new end date of February 28, 2010.

The inspection interval was extended in accordance with the provisions of IWA-2430(e), to reflect the extended shutdown from September 1997 through December 2000 for Unit 1 and September 1997 through June 2000 for Unit 2. Paragraph IWA-2430(e) allows the extension of an inspection interval in which an extended shutdown greater than 6 months occurs.

The provision of IWA-2430(d), which allows for as much as a one year extension in an interval, was also utilized. The inspection interval was extended an additional 5 months for Unit 1 and 11 months for Unit 2 to coincide with planned outages. The paragraph IWA-2430(d) provision may not be used in successive intervals such that the cumulative extension taken under IWA-2430(d) exceeds

one year unless the original schedule is restored by reducing the duration of a period/interval by an equivalent amount.

As of 2008, the total extension for the Third ISI Interval for Units 1 and 2 was 44 months. This established the end date of the Third ISI Interval as February 28, 2010 and the start of the Fourth ISI Interval as March 1, 2010.

Subsequent to this date, Unit 1 began another unplanned extended shutdown in September 2008 and was still shutdown as of October 30, 2009 (the date this ISI Program Plan was approved). To enable the completion of the Unit 1 Third ISI Interval examinations, paragraph IWA-2430(e) was again utilized to extend the end date of the Third Interval (for Unit 1 only) from February 28, 2010 to March 31, 2011. Any relief requests approved for the Third Interval are valid for the entire interval including the extended period. This modification of the Unit 1 Third Interval end date did not change the start date of the Unit 1 Fourth Interval, thus creating an overlap of the intervals. Examinations can be performed for either interval during the period of overlap, provided that no single examination may be credited towards both intervals.

1.2.11 The Fourth ISI Interval for CNP Units 1 and 2 starts on March 1, 2010 and is scheduled to end on February 29, 2020. Based on previous extensions taken, the IWA-2430(d) provision is available for the Fourth ISI Interval up to 7 months for Unit 1 and 1 month for Unit 2. The Fourth ISI Interval schedule is shown in Table 1-1:

TABLE 1-1

UNITS 1 & 2 FOURTH ISI INTERVAL/PERIOD/OUTAGE MATRIX
(FOR ISI CLASS 1, 2, AND 3 COMPONENT EXAMINATIONS)

Unit 1		Period	Interval	Period	Unit 2	
Outage Number	**Projected Outage Start Date or Outage Duration**	**Start Date to End Date**	**Start Date to End Date**	**Start Date to End Date**	**Projected Outage Start Date or Outage Duration**	**Outage Number**
4-1-1	Scheduled	1st		1st	Scheduled	4-1-1
C23	Spring 2010	03/01/10 to 02/28/13		03/01/10 to 02/28/13	Fall 2010	C19
4-1-2	Scheduled		4th (Unit 1)		Scheduled	4-1-2
C24	Fall 2011		03/01/10 to 02/29/20		Spring 2012	C20
4-2-1	Scheduled	2nd		2nd	Scheduled	4-2-1
C25	Spring 2013	03/01/13 to 02/28/17	4th (Unit 2)	03/01/13 to 02/28/17	Fall 2013	C21
4-2-2	Scheduled		03/01/10 to 02/29/20		Scheduled	4-2-2
C26	Fall 2014				Spring 2015	C22
4-2-3	Scheduled				Scheduled	4-2-3
C27	Spring 2016				Fall 2016	C23
4-3-1	Scheduled	3rd		3rd	Scheduled	4-3-1
C28	Fall 2017	03/01/17 to 02/29/20		03/01/17 to 02/29/20	Spring 2018	C24
4-3-2	Scheduled				Scheduled	4-3-2
C29	Spring 2019				Fall 2019	C25

1.3 System Classifications

1.3.1 The plant was designed and constructed by the American Electric Power Service Corporation (AEPSC) which performed the function of Architect-Engineer and Constructor for Indiana Michigan Power Company (I&M). Westinghouse Electric Corporation designed and supplied the Nuclear Steam Supply Systems including the initial fuel assemblies for both Units 1 and 2 of CNP.

The construction permits for CNP Units 1 and 2 were issued on March 25, 1969. At that time, ASME Section III only contained requirements for nuclear vessels. Therefore, piping, pumps, and valves were designed and installed according to the rules of USAS B31.1-1967 Edition (Power Piping). During this time, USAS B31.7, "Nuclear Power Piping" was issued for trial use. The State of Michigan took the position that CNP should be designed and fabricated to USAS B31.7. Westinghouse and AEPSC elected not to use USAS B31.7 because the requirements contained in the design analysis chapter differed significantly from previous piping analysis practice.

Agreement was reached between the State of Michigan Department of Labor, Westinghouse and AEPSC that the piping would be designed and built to USAS B31.1.0 requirements, with the additional quality controls imposed by Westinghouse and AEPSC which met or exceeded those of USAS B31.7.

1.3.2 CNP was designed and constructed to meet the intent of the Proposed General Design Criteria (PGDCs), published July 11, 1967. The Final Safety Analysis Report had been filed with the Commission when revisions of the General Design Criteria were published in February 1971 and July 7, 1971. In 1973, the AEC reviewed the plant design against the most recent General Design Criteria and concluded that the design meets those criteria. The application of the AEC proposed General Design Criteria to CNP was discussed in the original FSAR Appendix H. Appendix H was removed from the FSAR when the UFSAR was developed. GDCs found in the current 10CFR50 Appendix A differ both in numbering and content from the PGDCs adopted for CNP and these should not be interchanged.

1.3.3 System classes for the ISI program were originally based on the requirements of 10CFR50.2, 10CFR50.55a, Regulatory Guide 1.26, and ANSI N18.2-1973. Components within the reactor coolant pressure boundary, as defined in 10CFR50.2 are designated ISI Class 1. Other safety related components are designated ISI Class 2 or 3 in accordance with the guidelines of Regulatory Guide 1.26, Revision 3. Per paragraph A and B of Regulatory Guide 1.26, this classification system applies to those safety related components that do not meet the guidelines of Quality Group A (Class 1). These classifications were developed for the purpose of assigning the appropriate ISI Classification requirements for water, steam, and radioactive waste containing components that were constructed to codes other than ASME Section III.

1.3.4 AEPSC developed a unique classification for piping, components, and structures based on the seismic qualification requirement. Generally, Seismic Class I was used for safety-related items, but there are exceptions. Additionally, Quality Levels were assigned where Level 5 represented the highest level of quality and Quality Level 1 the least. ASME also developed a classification that established the highest class as Quality Group A. Table 1-2, identifies the equivalent CNP ISI Class for the different classification designations.

TABLE 1-2

ISI CLASS DETERMINATION

	ISI Class 1**	ISI Class 2**	ISI Class 3**
CNP Quality Level	5	4	3/2/1*
CNP Seismic Class	I	I	I/II*
10CFR50.2	Reactor Coolant Pressure Boundary	N/A	N/A
REG Guide 1.26	Quality Group A	Quality Group B	Quality Group C
NUREG 0800	ASME Class 1	ASME Class 2	ASME Class 3
ASME III (1967 Edition)	Class A	N/A	N/A
ASME III (1971 and later Editions and Addenda)	Class 1	Class 2	Class 3

* Some portions of system piping (such as Auxiliary Feed Water on OP-2-5106A) were constructed to Seismic Class II and CNP Quality Level 1 or 2, but designated ISI Class for test, inspection, and repair/replacement.

** CNP Quality Levels do not always equate to the current ISI Class due to upgrades or downgrades of the particular piping involved. Always refer to the ISI Class flags depicted on the Flow Diagrams.

1.3.5 According to 10CFR50.55a(g)(4), the specific components required to be included in an ISI Program per ASME Section XI are those components and supports which are classified as ISI Class 1, 2, and 3. 10CFR50.55a(a)(3) allows alternatives to paragraphs (b) and (g) when authorized by the Director of the Office of Nuclear Reactor Regulation.

The NRC may also require a licensee to follow an Augmented Inservice Inspection Program for systems and components for which they deem an added assurance of structural reliability is necessary, per 10CFR50.55a(g)(6)(ii).

1.3.6 ASME Section XI boundaries for ISI Class 1 systems are typically established per 10CFR50.2. This document defines the Reactor Coolant Pressure Boundary to include:

* the outermost containment isolation valve in system piping which penetrates the primary reactor containment, and

* the second of two valves normally closed during normal reactor operation in system piping which does not penetrate primary reactor containment, and

* the reactor coolant system safety and relief valves

Exception may be taken to these boundary criteria for ISI Class 1 components per 10CFR50.55a(c)(2), provided:

- In the event of postulated failure of the component during normal reactor operation, the reactor can be shut down and cooled down in an orderly manner assuming makeup is provided by the reactor coolant makeup system or,

- The component is or can be isolated from the reactor coolant system by two valves in series (both closed, both open, or one closed and the other open). Each open valve must be capable of automatic actuation and, assuming the other valve is open, its closure time must be such that, in the event of postulated failure of the component during normal reactor operation, each valve remains operable and the reactor can be shut down and cooled down in an orderly manner, assuming makeup is provided by the reactor coolant makeup system only.

1.3.7 ASME Section XI boundaries for ISI Class 2 and 3 systems are typically established per Regulatory Guide 1.26, footnote 4, which stipulates that boundaries include those portions of the system required to accomplish the specified safety function and the connecting piping up to and including the first valve that is either normally closed or capable of automatic closure when the safety function is required. In the event that a system performs more than one function, each of which is a different class, the higher class applies to those components require to perform the higher safety function.

1.3.8 When a valve is the interface between ISI Class systems or non-classed systems, the valve seat shall be considered the extent of the higher-class boundary; thus the valve body and joint (welded, threaded, bolted, etc.) on the lower-classed side are not subject to the ISI requirements applicable to the higher-classed portion.

1.3.9 Items subject to ISI are shown on the Operational Flow Diagrams listed in Section 2.2 of this ISI Program Plan. Flags and arrows are used to identify the extent and direction of the boundary class. The flags are typically placed at the outermost component (such as the outlet flange of a valve), but 1.3.8 above applies regardless of flag location unless otherwise noted within this document.

1.3.10 Items classified as exempt from examination are defined by ASME Section XI Paragraphs IWB-1220, IWC-1220, IWD-1220, and IWF-1230.

1.3.11 Per ASME Section XI, Paragraph IWB-1220(a), piping may be exempted from volumetric and surface examinations of ASME Section XI provided it is connected to the reactor coolant pressure boundary and of such a size and shape that upon a postulated failure, the resulting flow of reactor coolant, under normal operating conditions, is within the make-up capability of the plant. As documented in the Updated Final Safety Analysis Report, orifices (1/4" reactor head vent path, 3/8" pressurizer steam space vent path) are installed upstream of the solenoid operated isolation valves to limit the maximum postulated flow in the case of a pipe break down stream of the orifices to less than the capacity of one centrifugal charging pump. This size is already exempted per the NPS 1 and smaller line exemption of Paragraph IWB-1220(b).

1.3.12 An RI-ISI Program is implemented for nonexempt ISI Class 1 and 2 piping. Safety significance and component categorization are per Code Case N-716 as detailed in the Risk Informed ISI Program Analysis (DCC01.G06).

1.4 Augmented Inservice Inspection Requirements

Augmented Inservice Inspection Programs are examinations required by enforcement authorities or owner elected that are not required by ASME Section XI. The NRC may require augmented examinations through such mechanisms as Bulletins, Notices, Regulatory Guides, Orders or license amendments, or conditions specified in SERs. Augmented examinations applicable to the CNP ISI Program are:

1.4.1 Two Break Exclusion Zones have been established for CNP Units 1 and 2 between the containment penetration and the first outboard isolation valve in the 2" Steam Generator Blowdown and the 2" Chemical and Volume Control System Letdown lines outside containment. [Reference UFSAR Section 14.4.2.2.2 and NRC Safety Evaluation Report N2000143, "Issuance of Amendments 249 and 230 (TAC NOS. MA8893 and MA8894)]. These welds may require additional examinations to meet the intent of the Standard Review Plan NUREG 0800, Branch Technical Position EMEB Section B.1.b. Additional inspection requirements (if required) will be specified prior to the end of the current inspection interval. This is being tracked via Condition Report 00-03971.

1.4.2 At each refueling outage, a visual inspection (VT-2 in accordance with IWA-2212 of Section XI of the ASME Code) of the visible, without removal of insulation, portion of all pressurizer heater sleeves and adjacent and nearby insulation for evidence of primary coolant leakage. (Ref. WCAP-16913-P, Rev. 1)

1.4.3 Surface and Volumetric examinations of Reactor Coolant Pump Flywheels shall be according to Regulatory Guide 1.14, as modified by WCAP-14535, as stated in CNP Technical Specification 5.5.5.

1.4.4 The Reactor Pressure Vessel Pedestal Coolers are non class, but are pressure tested to ISI Class 3 requirements for frequency and method (System Leakage Test). Reference 1-LDCP-5459 and 2-LDCP-5619, "Class Boundary Determination of the Reactor Vessel Support Pedestal Coolers within the Inservice Inspection (ISI) Program".

1.4.5 Previously, in response to NRC Bulletin 2002-01, "Reactor Pressure Vessel Head Degradation and Reactor Coolant Pressure Boundary Integrity" and NRC Order EA-03-009, "Issuance Of Order Establishing Interim Inspection Requirements For Reactor Pressure Vessel Heads At Pressurized Water Reactors", a bare metal visual examination under the insulation on the Reactor Pressure Vessel Closure Head was required each refueling outage. Additionally, all Closure Head penetrations required either an ultrasonic examination of the penetration base material, or a surface examination of all wetted surfaces. This requirement was amended by the publication of a new 10CFR50.55a effective 10/10/2008 as stated in 10CFR50.55a(b), with the limitations in paragraphs (g)(6)(ii)(D) and (g)(6)(ii)(E) for the incorporation of ASME Section XI Code Cases N-729-1 and N-722, respectively.

The Code Case N-729-1 augmented inservice inspection program was to be implemented by December 31, 2008, and at such time, the NRC Order EA-03-009 no longer applied. For details and implementation requirements, see 10CFR50.55a(g)(6)(ii)(D)(1) through (6). This program is applicable to the Fourth Inspection interval.

Under the Code Case N-722 augmented program, inspections to be conducted every refueling outage and inspections conducted every other refueling outage, the initial inspections were to be performed at the next refueling outage after January 1, 2009. For inspections to be conducted once per interval, the inspections were to begin in the interval in effect on January 1, 2009, and prorated over the remaining periods and refueling outages in this interval. For details and implementation requirements, see 10CFR50.55a(g)(6)(ii)(E)(1) through (4). This program is applicable to the Fourth Inspection interval.

1.4.6 Certain portions of Main Steam and Feedwater piping outside containment are designated L-31X on OP Flow Diagrams. This indicates that these portions of the system are inspected to the requirements of ISI Class 2. However, the repair/replacement rules of ASME Section XI do not apply. This is intended to satisfy the augmented requirements imposed by the Michigan Department of Labor, Michigan Boiler Act.

1.4.7 Inservice Inspection – ASME Section XI, Augmented Inspection:

Commitment 8251 tracks the Augmented ASME Section XI inspection requirements for portions of the containment spray system, specifically the spray additive tanks (SATs) and the associated portions of the containment spray system that are wetted by sodium hydroxide as well as the discharge header in the containment that may contain untreated water. To manage cracking and loss of material of the stainless steel spray additive tanks and the above listed piping, LRA Table 3.2.2-1 and LRA Section B.1.18 identify an Augmented ISI Program that specifies volumetric inspection for portions of the containment spray system subject to a sodium hydroxide environment. Augmented inspections are specified for components that are outside the jurisdiction of ASME Section XI inspection requirements. Augmented inspections use the same non-destructive examination methods used for ASME Section XI inspections on ISI Class 1, 2, or 3 components. The augmented inspections of the spray additive tanks and piping will use ultrasonic techniques, where feasible. For components with less than a minimum thickness where volumetric examination is not feasible, cases exist for which ASME Section XI allows for surface examinations. Some of the containment spray piping is in the category where volumetric inspection will not be feasible. In these cases, guidance in ASME Section XI for ISI Class 2 piping will be followed for the examination method. The inspection will be implemented prior to the period of extended operation (2014 for Unit 1 and 2017 for Unit 2). The frequency of inspections will be once every 10 years, consistent with ASME Section XI, Subsection IWC, requirements for comparable ISI Class

2 components. Acceptance criteria will be in accordance with the ISI Class 2 acceptance criteria of Article IWC-3000.

1.4.8 Pressurizer Examinations

Commitment 8256 tracks the pressurizer inspection requirements, as delineated in Appendix B, Section 1.24 of the License Renewal Application. The Pressurizer Examination Program mandates a one-time VT-3 visual examination of the pressurizer spray head, spray head locking bar, and coupling (either CNP unit). This inspection needs to occur before 2014, but should not be scheduled too early in the current operating term which could raise questions regarding aging effects beyond 2014. Additionally, ASME Section XI volumetric examinations of the surge nozzle and shell-to-lower head weld to detect cracking of the pressurizer cladding due to thermal fatigue are performed. In accordance with ASME Section XI, Examination Category B-B, volumetric examination of essentially 100 percent of the circumferential shell-to-head weld is performed each inspection interval. The weld that connects the surge nozzle to the lower head receives volumetric examination each inspection interval in accordance with ASME Section XI, Examination Category B-D to monitor for cracking of the cladding. These examinations need to continue through the period of extended operation to manage any cracking of cladding that may extend into the base metal at the locations most susceptible to thermal fatigue. The inspection will be implemented prior to the period of extended operation (2014 for Unit 1 and 2017 for Unit 2).

1.4.9 Reactor Vessel Internals, Plates, Forgings, Welds and Bolting Program

Commitment 8260 tracks the implementation of the Reactor Vessel Internals, Plates, Forgings, Welds, and Bolting Program as described in Appendix B, Section 1.27 of the License Renewal Application for the following components:

- Core barrel, flange, outlet nozzle, and fasteners
- Core former plates, baffle plates, baffle bolts, former bolts, and lower plates
- Lower support columns
- Diffuser plate
- Secondary core support assembly
- Thermal shield
- Upper support plate (Unit 1)
- Deep beam sections
- Upper support columns
- Support column bolts
- Upper core plate and plate alignment pins
- Lower support radial keys
- Holddown spring
- Guide tube assemblies
- Upper system thermocouples

- Lower system flux thimbles
- Clevis insert block and fasteners
- Control rod guide tube pin
- Fuel assembly guide tube pin

A visual inspection will be performed on plates, forgings, and welds to detect cracking caused by irradiation assisted stress corrosion cracking enhanced by reduction of fracture toughness by irradiation embrittlement and distortion due to void swelling. Other demonstrated acceptable inspection methods will be utilized for bolted joints (core barrel bolts and thermal shield bolts), if deemed necessary. For baffle bolts, a volumetric inspection of critical locations will be performed to assess cracking.

This program will manage the aging effects of loss of bolted closure integrity due to stress relaxation (loss of preload). This program will supplement the normal ISI inspections conducted in accordance with the interval and acceptance requirements of ASME Section XI (B-N-3).

Commitment 8260 requires I&M to submit the Reactor Vessel Internals Plates, Forgings, Welds, and Bolting Program for NRC Staff review and approval three years prior to the period of extended operation. The inspection will be implemented prior to the period of extended operation (2014 for Unit 1 and 2017 for Unit 2).

1.4.10 Reactor Vessel Internals Cast Austenitic Stainless Steel (CASS) Program

Commitment 8259 tracks the implementation of the Reactor Vessel Internals CASS Program as described in Appendix B, Section 1.28 of the License Renewal Application for the following components:

- Lower support plate
- Lower core plate support column cap
- Upper core support column mixing device
- Upper core support column orifice base
- Upper support plate (Unit 2)

For items fabricated from CASS, an analytical evaluation will determine the critical flaw size based on service loading conditions and service-degraded material properties. Supplemental examinations based on these evaluation results will be conducted on limiting components. Additionally, visual inspections will be performed to detect dimensional changes due to void swelling on the CASS components.

The inspection will be implemented prior to the period of extended operation (2014 for Unit 1 and 2017 for Unit 2).

1.4.11 Cast Austenitic Stainless Steel (CASS) Evaluation Program

Commitment 8247 tracks the implementation of the Cast Austenitic Stainless Steel (CASS) Evaluation Program as described in Appendix B, Section 1.7 of the License Renewal Application for the RCS hot legs, cold legs, and crossover legs piping and elbows.

Examination methods that meet the criteria of the ASME Section XI, Appendix VIII, will be used for volumetric inspections of the base metal, with the scope of the inspection covering the portions determined to be limiting from the standpoint of applied stress, operating time, and environmental considerations.

Alternatively, a component-specific flaw tolerance evaluation, using specific geometry and stress information, can be used to demonstrate that the thermally-embrittled material has adequate toughness. The flaw tolerance evaluation would utilize elements from Code Case N-481 as discussed below:

1. Perform VT-2 visual examinations of the exterior surface of the susceptible piping segments during periodic pressure tests in accordance with ASME Section XI, Table IWB-2500-1, Examination Category B-P.

2. Perform VT-1 visual examinations of the external surfaces of the welded joints which connect the susceptible piping segments to adjacent segments, unless those welds and the adjacent base metal are already included in the locations for Unit 2 inspected under Examination Category B-J. These additional examinations will be carried out prior to entering the period of extended operation.

3. The flaw tolerance evaluation will be performed utilizing component-specific geometry, material information, and stress information. Thermal aging embrittlement that might degrade the properties of the component shall be accounted for in the evaluation. In addition, the evaluation shall select locations and orientations for a postulated one-quarter thickness reference flaw with an aspect ratio of 6:1. The stability of this flaw under governing stress conditions shall be established.

If the flaw tolerance option is chosen, the additional inspections will be performed in the fifth and sixth intervals. VT-2 visual examination may be performed each refueling outage and VT-1 visual examination each interval. A report of the flaw tolerance evaluation must be submitted to the NRC prior to entering the period of extended operation.

The inspection will be implemented prior to the period of extended operation (2014 for Unit 1 and 2017 for Unit 2).

1.4.12 Small Bore Piping Program

Commitment 8262 tracks the implementation of the Small Bore Piping Program as described in Appendix B, Section 1.30 of the License Renewal Application.

The sample inspection locations will be determined utilizing a RI-ISI approach based on generally accepted practices. This consists of a degradation mechanism evaluation to assess the failure potential of the piping system under consideration and a consequence evaluation to assess the impact on plant safety in the event of a piping failure. Once the sample locations are determined, the detection of cracking will be performed using approved and qualified volumetric examination techniques, such as ultrasonic testing or radiography. This inspection is a one time inspection and will occur at or near the end of the initial operating period for CNP Units 1 and 2 (2014 for Unit 1 and 2017 for Unit 2).

Code Case N-716 as implemented requires High Safety Significant (HSS) piping to be examined prior to the end of the interval. Some of this piping is small bore piping. Also, MRP-146 provides examination requirements for IGSCC and thermal fatigue impacted piping, including small bore piping. As long as there is no indication of IGSCC and the thermal fatigue has been evaluated as acceptable, the HSS piping exams will be examined per these requirements and used for the Commitment 8262 exams as well.

1.4.13 Alloy 600 Aging Management Program

Commitment 8244 tracks the implementation of this program. As described in Appendix B, Section 1.1 of the License Renewal Application for the following components:

Reactor Vessel

- Reactor vessel low alloy steel nozzle-to-stainless steel safe end buttering and welds
- Bottom-mounted instrumentation (BMI) nozzles
- Core support pads
- Unit 1 vessel flange leakage tubes

Pressurizer

- Low-alloy spray nozzle-to-stainless steel safe end
- Weld that connects the spray nozzle thermal sleeve to the safe end
- Low-alloy steel surge nozzle-to-stainless steel safe end
- Weld that connects the surge nozzle thermal sleeve to the safe end
- Low-alloy steel safety relief and safety valve nozzles to-stainless steel safe ends

Steam Generators

- Low-alloy steel primary nozzle to stainless steel safe ends.
- Primary tube sheet cladding
- Partition plate
- Unit 1 primary manway insert plates
- Primary nozzle closure rings

The Alloy 600 Aging Management Program will detect cracking from primary water stress corrosion cracking (PWSCC) using the examination and inspection requirements specified in ASME Section XI.

Guidance developed by the EPRI Material Reliability Program (such as MRP-139) and the owners groups will be used to identify susceptibility rankings and program inspection requirements regarding Alloy 82/182 pipe butt welds. This program will be implemented prior to the period of extended operation (2014 for Unit 1 and 2017 for Unit 2).

An Inspection Plan shall be submitted for NRC Staff review and approval three years prior to the period of extended operation, for Unit 1 - Due Date 10/25/2011. (Reference Commitment 8244 and CNP License Renewal Application submittal.)

1.5 Code of Federal Regulations 10CFR50.55a Limitations on Section XI

There are certain Paragraphs in 10CFR50.55a that list the limitations, modifications, and/or clarifications to the implementation requirements of ASME Section XI. These Paragraphs in 10CFR50.55a that are applicable to CNP are listed in Table 1-3.

TABLE 1-3
CODE OF FEDERAL REGULATIONS 10CFR50.55a LIMITATIONS

10CFR50.55a Paragraphs	Limitations, Modifications, and Clarifications
10CFR50.55a(b)(2)(xii)	**(ISI)** *Underwater Welding:* The provisions in IWA-4660, "Underwater Welding," of Section XI, 1997 Addenda through the latest Edition and Addenda incorporated by reference in Paragraph (b)(2) of this section, are not approved for use on irradiated material.
10CFR50.55a(b)(2)(xviii)(A)	**(ISI)** *Certification of NDE personnel:* Level I and II nondestructive examination personnel shall be recertified on a 3-year interval in lieu of the 5-year interval specified in the 1997 Addenda and 1998 Edition of IWA-2314, and IWA-2314(a) and IWA-2314(b) of the 1999 Addenda through the latest Edition and Addenda incorporated by reference in paragraph (b)(2) of this section.
10CFR50.55a(b)(2)(xviii)(B)	**(ISI)** *Certification of NDE personnel:* Paragraph IWA-2316 of the 1998 Edition through the latest Edition and Addenda incorporated by reference in paragraph (b)(2) of this section, may only be used to qualify personnel that observe for leakage during system leakage and hydrostatic tests conducted in accordance with IWA-5211(a) and (b), 1998 Edition through the latest Edition and Addenda incorporated by reference in paragraph (b)(2) of this section.
10CFR50.55a(b)(2)(xviii)(C)	**(ISI)** *Certification of NDE personnel:* When qualifying visual examination personnel for VT-3 visual examinations under paragraph IWA-2317 of the 1998 Edition through the latest Edition and Addenda incorporated by reference in paragraph (b)(2) of this section, the proficiency of the training must be demonstrated by administering an initial qualification examination and administering subsequent examinations on a 3-year interval.

TABLE 1-3
CODE OF FEDERAL REGULATIONS 10CFR50.55a LIMITATIONS

10CFR50.55a Paragraphs	Limitations, Modifications, and Clarifications
10CFR50.55a(b)(2)(xix)	**(ISI)** *Substitution of alternative methods:* The provisions for the substitution of alternative examination methods, a combination of methods, or newly developed techniques in the 1997 Addenda of IWA-2240 must be applied. The provisions in IWA-2240, 1998 Edition through the latest Edition and Addenda incorporated by reference in paragraph (b)(2) of this section, are not approved for use. The provisions in IWA-4520(c), 1997 Addenda through the latest Edition and Addenda incorporated by reference in paragraph (b)(2) of this section, allowing the substitution of alternative examination methods, a combination of methods, or newly developed techniques for the methods specified in the Construction Code are not approved for use.
10CFR50.55a(b)(2)(xx)(B)	**(ISI)** *System leakage tests:* The NDE provision in IWA-4540(a)(2) of the 2002 Addenda of Section XI must be applied when performing system leakage tests after repair and replacement activities performed by welding or brazing on a pressure retaining boundary using the 2003 Addenda through the latest Edition and Addenda incorporated by reference in paragraph (b)(2) of this section.
10CFR50.55a(b)(2)(xxi)(A)	**(ISI)** *Table IWB-2500-1 examination requirements:* The provisions of Table IWB-2500-1, Examination Category B-D, Full Penetration Welded Nozzles in Vessels, Items B3.120 and B3.140 (Inspection Program B) in the 1998 Edition must be applied when using the 1999 Addenda through the latest Edition and Addenda incorporated by reference in Paragraph (b)(2) of this section. A visual examination with magnification that has a resolution sensitivity to detect a 1-mil width wire or crack, utilizing the allowable flaw length criteria in Table IWB-3512-1, 1997 Addenda through the latest Edition and Addenda incorporated by reference in Paragraph (b)(2) of this section, with a limiting assumption on the flaw aspect ratio (i.e., a/l=0.5), may be performed instead of an ultrasonic examination.
10CFR50.55a(b)(2)(xxii)	**(ISI)** *Surface Examination:* The use of the provision in IWA-2220, "Surface Examination," of Section XI, 2001 Edition through the latest Edition and Addenda incorporated by reference in paragraph (b)(2) of this section, that allow use of an ultrasonic examination method is prohibited.

TABLE 1-3
CODE OF FEDERAL REGULATIONS 10CFR50.55a LIMITATIONS

10CFR50.55a Paragraphs	Limitations, Modifications, and Clarifications
10CFR50.55a(b)(2)(xxiii)	**(ISI)** *Evaluation of Thermally Cut Surfaces:* The use of the provisions for eliminating mechanical processing of thermally cut surfaces in IWA-4461.4.2 of Section XI, 2001 Edition through the latest Edition and Addenda incorporated by reference in Paragraph (b)(2) of this section are prohibited.
10CFR50.55a(b)(2)(xxiv)	**(PDI)** *Incorporation of the Performance Demonstration Initiative and Addition of Ultrasonic Examination Criteria:* The use of Appendix VIII and the supplements to Appendix VIII and Article I-3000 of Section XI of the ASME BPV Code, 2002 Addenda through the latest Edition and Addenda incorporated by reference in Paragraph (b)(2) of this section, is prohibited.
10CFR50.55a(b)(2)(xxv)	**(ISI)** *Mitigation of Defects by Modification:* The use of the provisions in IWA-4340, "Mitigation of Defects by Modification," Section XI, 2001 Edition through the latest Edition and Addenda incorporated by reference in Paragraph (b)(2) of this section are prohibited.
10CFR50.55a(b)(2)(xxvi)	**(SPT)** *Pressure Testing Class 1, 2, and 3 Mechanical Joints:* The repair and replacement activity provisions in IWA-4540(c) of the 1998 Edition of Section XI for pressure testing Class 1, 2, and 3 mechanical joints must be applied when using the 2001 Edition through the latest Edition and Addenda incorporated by reference in Paragraph (b)(2) of this section.
10CFR50.55a(b)(2)(xxvii)	**(ISI)** *Removal of Insulation:* When performing visual examinations in accordance with IWA-5242 of Section XI, 2003 Addenda through the latest Edition and Addenda incorporated by reference in paragraph (b)(2) of the section, insulation must be removed from 17-4 PH or 410 stainless steel studs or bolts aged at a temperature below 1100 °F or having a Rockwell Method C hardness value above 30, and from A-286 stainless steel studs or bolts preloaded to 100,000 pounds per square inch or higher.

TABLE 1-3
CODE OF FEDERAL REGULATIONS 10CFR50.55a LIMITATIONS

10CFR50.55a Paragraphs	Limitations, Modifications, and Clarifications
10CFR50.55a(b)(3)(v)	**(ISI)** *Subsection ISTD:* Article IWF-5000, "Inservice Inspection Requirements for Snubbers," of the ASME BPV Code, Section XI, provides inservice inspection requirements for examinations and tests of snubbers at nuclear power plants. Licensees may use Subsection ISTD, "Inservice Testing of Dynamic Restraints (Snubbers) in Light-Water Reactor Power Plants," ASME OM Code, 1995 Edition through the latest Edition and Addenda incorporated by reference in paragraph (b)(3) of this section, in place of the requirements for snubbers in Section XI, IWF-5200(a) and (b) and IWF-5300(a) and (b), by making appropriate changes to their technical specifications or licensee-controlled documents. Preservice and inservice examinations must be performed using the VT-3 visual examination method described in IWA-2213.
10CFR50.55a(b)(5)	**(ISI)** *Inservice Inspection Code Cases:* Licensees may apply the ASME Boiler and Pressure Vessel Code Cases listed in Regulatory Guide 1.147 without prior NRC approval subject to the following: (i) When a licensee initially applies a listed Code Case, the licensee shall apply the most recent version of that Code Case incorporated by reference in this paragraph. (ii) If a licensee has previously applied a Code Case and a later version of the Code Case is incorporated by reference in this paragraph, the licensee may continue to apply, to the end of the current 120-month interval, the previous version of the Code Case as authorized or may apply the later version of the Code Case, including any NRC-specified conditions placed on its use. (iii) Application of an annulled Code Case is prohibited unless a licensee previously applied the listed Code Case prior to it being listed as annulled in Regulatory Guide 1.147. Any Code Case listed as annulled in any Revision of Regulatory Guide 1.147 which a licensee has applied prior to it being listed as annulled, may continue to be applied by that licensee to the end of the 120-month interval in which the Code Case was implemented.

TABLE 1-3
CODE OF FEDERAL REGULATIONS 10CFR50.55a LIMITATIONS

10CFR50.55a Paragraphs	Limitations, Modifications, and Clarifications
10CFR50.55a(b)(6)	**(ISI)** *Operation and Maintenance of Nuclear Power Plants Code Cases:* Licensees may apply the ASME Operation and Maintenance Nuclear Power Plants Code Cases listed in Regulatory Guide 1.192 without prior NRC approval subject to the following: (i) When a licensee initially applies a listed Code Case, the licensee shall apply the most recent version of that Code Case incorporated by reference in this paragraph. (ii) If a licensee has previously applied a Code Case and a later version of the Code Case is incorporated by reference in this paragraph, the licensee may continue to apply, to the end of the current 120-month interval, the previous version of the Code Case as authorized or may apply the later version of the Code Case, including any NRC-specified conditions placed on its use. (iii) Application of an annulled Code Case is prohibited unless a licensee previously applied the listed Code Case prior to it being listed as annulled in Regulatory Guide 1.192. If a licensee has applied a listed Code Case that is later listed as annulled in Regulatory Guide 1.192, the licensee may continue to apply the Code Case to the end of the current 120-month interval.
10CFR50.55a(g)(6)(ii)(E)	*Reactor coolant pressure boundary visual inspections.* Condition (1) requires that PWR licensees implement N–722 except for those welds that have been mitigated by weld overlay or stress improvements. Condition (2) requires that if leakage occurs from a component, licensees take additional actions to characterize the orientation of the crack that caused the leakage. Condition (3) requires that if the crack that leads to leakage is circumferentially oriented and potentially the result of primary water stress-corrosion cracking, licensees perform non-visual sample inspections of the population of the components. Condition (4) requires that the ultrasonic examinations of the butt welds as required by Condition (2) and (3) follow the appropriate supplement of Appendix VIII of the ASME Code, Section XI.

TABLE 1-3
CODE OF FEDERAL REGULATIONS 10CFR50.55a LIMITATIONS

10CFR50.55a Paragraphs	Limitations, Modifications, and Clarifications
10CFR50.55a(g)(6)(ii)(D)	*Reactor vessel head inspections* Condition (1) requires that PWR licensees implement N-729-1 to replace NRC Order EA-03-009. Condition (2) prohibits use of Note 9 in the Case. Condition (3) modifies the examination method contained in Note 6 of Table 1 in the Case. Condition (4) requires alternative personnel, procedures, and equipment qualifications to those provided in Paragraph -2500 of the Case. Condition (5) requires that flaws attributed to PWSCC be re-inspected each refueling outage. Condition (6) prohibits use of Appendix I in the Case without prior NRC approval.

1.6 Interpretations

ASME Section XI interpretations provide clarification to the intent of ASME Section XI requirements. Although the NRC agrees with most interpretations, some are inconsistent with NRC requirements. Interpretations serve to support the users understanding of ASME Section XI requirements. Many interpretations address specific circumstances. Therefore, the context of the interpretation must be thoroughly understood prior to its application at CNP.

1.7 Inservice Inspection Technical Positions (ISIPs)

When the requirements of ASME Section XI are not easily interpreted, CNP has reviewed general licensing/regulatory requirements and industry practice to determine a practical method of implementing the ASME Section XI requirements. The ISIPs included in this section have been provided to document and clarify CNPs application and implementation of certain ASME Section requirements as they apply to inservice inspection and pressure testing activities.

Table 1-4 includes an index which summarizes the currently approved ISIPs in this ISI Program Plan. These positions are reviewed and approved by the ISI Program Owner. When new ISIPs are developed, they should be included in the next revision of this document. The ANII shall be consulted and allowed the opportunity to review these technical position statements.

TABLE 1-4

ISI PROGRAM TECHNICAL POSITION INDEX

Position Number	Revision Date[1]	Status[2]	(Program) Description of Technical Position
ISIP-4-01	0 06/30/09	Active	**(SPT)** System Leakage Testing of Non-Isolable Buried Components.
ISIP-4-02	0 06/30/09	Active	**(SPT)** Valve Seats as Pressurization Boundaries.

Note 1: The revision listed is the latest revision of the subject Technical Position. The date noted is the date of the ISI Program Plan revision when the Technical Position was incorporated into the document.

Note 2: ISI Program Technical Position Status Options: Active - Current Technical Position is being utilized at CNP; Deleted - Technical Position is no longer being utilized at CNP.

TECHNICAL POSITION ISIP-4-01
Revision 0

COMPONENT IDENTIFICATION:

Code Class:	2 and 3
Reference:	IWA-5244(b)(2)
Examination Category:	C-H, D-B
Item Number:	C7.10, D2.10
Description:	System Leakage Testing of Non-Isolable Buried Components
Component Number:	Non-Isolable Buried Pressure Retaining Components

CODE REQUIREMENT:

Paragraph IWA-5244(b)(2) requires non-isolable buried components be tested to confirm that flow during operation is not impaired.

POSITION:

Article IWA-5000 provides no guidance in setting acceptance criteria for what can be considered "adequate flow". In lieu of any formal guidance provided by the Code, CNP has established the following acceptance criteria:

- For opened ended lines on systems that require Inservice Testing (IST) of pumps, adherence to IST acceptance criteria is considered as reasonable proof of adequate flow through the lines.

- For lines in which the open end is accessible to visual examination while the system is in operation, visual evidence of flow discharging the line is considered as reasonable proof of adequate flow through the open ended line.

- For open ended portions of systems where the process fluid is pneumatic, evidence of gaseous discharge shall be considered reasonable proof of adequate flow through the open ended line. Such tests may include passing smoke through the line, hanging balloons or streamers, using a remotely operated blimp, using thermography to detect hot air, etc.

This acceptance criteria will be utilized in order to meet the requirements of Paragraph IWA-5244(b)(2).

CNP's position is that proof of adequate flow is all that is required for testing these open ended lines and that no further visual examination is necessary. This is consistent with the requirements for buried piping, which is not subject to visual examination.

TECHNICAL POSITION ISIP-4-02
Revision 0

COMPONENT IDENTIFICATION:

Code Class:	1, 2, and 3
Reference:	IWA-5221
	IWA-5222
Examination Category:	B-P, C-H, D-B
Item Number:	B15.10, C7.10, D2.10
Description:	Valve Seats as Pressurization Boundaries
Component Number:	All Pressure Testing Boundary Valves

CODE REQUIREMENT:

Paragraph IWA-5221 requires the pressurization boundary for system leakage testing extend to those pressure retaining components under operating pressures during normal system service.

POSITION:

CNP's position is that the pressurization boundary extends up to the valve seat of the valve utilized for isolation. For example, in order to pressure test the ISI Class 1 components, the valve that provides the Class break would be utilized as the isolation point. In this case the true pressurization boundary, and Class break, is actually at the valve seat.

Any requirement to test beyond the valve seat is dependent only on whether or not the piping on the other side of the valve seat is ISI Class 1, 2, or 3.

In order to simplify examination of classed components, CNP will perform a VT-2 visual examination of the entire boundary valve body and bonnet (during pressurization up to the valve seat).

SECTION 2.0

INSERVICE INSPECTION PROGRAM DRAWINGS

2.1 Piping Classifications

Piping classifications are identified in ES-PIPE-1013-QCN, Pipe Material Specification, Nuclear Quality. This Engineering Specification provides the requirements for piping classifications, designation of materials, quality standards and codes, and fabrication for piping systems at CNP.

2.2 Operational Flow Diagrams

Tables 2-1, 2-2, and 2-3 list Operational Flow Diagrams (OP). These drawings depict items subject to inservice inspection at CNP Units 1 and 2. The class boundaries are depicted by flags and arrows, and identify the piping as ISI Class 1, 2, or 3. Non-Classed is represented by the absence of flags and arrows.

2.3 ISI Isometrics

ISI isometrics (ISOs) are developed and maintained by ISI personnel and are currently outside the scope of CNP plant drawing control process. Tables 2-1, 2-2, and 2-3 also list the isometrics for the classed piping shown on the OP drawings. Any revisions require a reviewer that is Position Specific Qualified as an ISI Program Owner.

TABLE 2-1

INSERVICE INSPECTION OPERATIONAL FLOW DIAGRAMS
UNIT 1

DRAWING NUMBER	TITLE	ISI CLASS	ISI ISOMETRIC
OP-1-5105	Main Steam Blow down	2	N/A
OP-1-5105D	Main Steam	2	B-61 thru B-78
OP-1-5105E	Main Steam	3	B-69 thru B-72
OP-1-5106A	Auxiliary Feedwater	2/3	B-57 thru B-60
OP-1-5105D	Feedwater	2	B-49 thru B-60
OP-1-5113	Essential Service Water	3	N/A
OP-1-5113A	Essential Service Water	3	N/A
OP-1-5114A	Non Essential Service Water	2 (CPN)*	N/A
OP-1-5120D	Containment Control Air, Penetration Pipe	2 (CPN)*	N/A
OP-1-5120E	Containment Control Air, Penetration Pipe	2 (CPN)*	N/A
OP-1-5124	Station Drainage, Containment	2 (CPN)*	N/A
OP-1-5128	Reactor Coolant	1	A-7 thru A-18 A-29 thru A-46
OP-1-5128A	Reactor Coolant	1	A-19 thru A-28
OP-1-5129	CVCS-Reactor Letdown and Charging	2/3	B-41 thru B-42, B-89 thru B-99
OP-1-5129A	CVCS-Reactor Letdown and Charging	2/3	B-96 thru B-99
OP-1-5135	Component Cooling Water	3	N/A
OP-1-5135A	Component Cooling Water	3	N/A
OP-1-5135B	Component Cooling Water	3	N/A
OP-1-5135C	Component Cooling Water	3	N/A
OP-1-5135D	Component Cooling Water	2 (CPN)*/3	N/A
OP-1-5135E	Component Cooling Water	2 (CPN)*/3	N/A
OP-1-5135F	Component Cooling Water	3	N/A
OP-1-5135G	Component Cooling Water	3	N/A
OP-1-5141	Nuclear Sampling	2 (CPN)*	N/A
OP-1-5141A	Nuclear Sampling	2 (CPN)*	N/A

* CPN – ISI Class 2 for Containment Penetration Piping only

TABLE 2-1

INSERVICE INSPECTION OPERATIONAL FLOW DIAGRAMS
UNIT 1

DRAWING NUMBER	TITLE	ISI CLASS	ISI ISOMETRIC
OP-1-5141D	Post Accident Sampling Containment Hydrogen	**2 (CPN)***	**N/A**
OP-1-5142	Emergency Core Cooling (SIS)	**2/3**	**B-12 thru B-26, B-77 thru B-88**
OP-1-5143	Emergency Core Cooling (RHR)	**2**	**B-27 thru B-40**
OP-1-5143A	Emergency Core Cooling (SIS), Accumulators	**2**	**B-19 thru B-22**
OP-1-5144	Containment Spray	**2/3**	**B-43 thru B-48**
OP-1-5145	Weld Channel Pressurization	**2 (CPN)***	**N/A**
OP-1-5146A	Ice Condenser Refrigeration	**2 (CPN)***	**N/A**
OP-1-5146B	Ice Condenser Refrigeration	**2 (CPN)***	**N/A**
OP-1-5147A	Containment Vent	**2 (CPN)***	**N/A**
OP-1-5149	Control Room Vent	**3**	**N/A**
OP-1-5151B	Emergency Diesel Generator	**3**	**N/A**
OP-1-5151D	Emergency Diesel Generator	**3**	**N/A**

* CPN – ISI Class 2 for Containment Penetration Piping only

TABLE 2-2

INSERVICE INSPECTION OPERATIONAL FLOW DIAGRAMS UNIT 2

DRAWING NUMBER	TITLE	ISI CLASS	ISI ISOMETRIC
OP-2-5105B	Main Steam Blow down	2	N/A
OP-2-5105D	Feedwater	2	B-52 thru B-63
OP-2-5105D	Main Steam	2/3	B-64 thru B-71
OP-2-5105E	Main Steam	3	B-72 thru B-75
OP-2-5106A	Auxiliary Feedwater	2/3	B-60 thru B-62
OP-2-5113	Essential Service Water	3	N/A
OP-2-5113A	Essential Service Water	3	N/A
OP-2-5114A	Non Essential Service Water, Penetration Pipe	2 (CPN)*	N/A
OP-2-5120D	Containment Control Air, Penetration Pipe	2 (CPN)*	N/A
OP-2-5120E	Containment Control Air, Penetration Pipe	2 (CPN)*	N/A
OP-2-5124	Station Drainage, Containment	2 (CPN)*	N/A
OP-2-5128	Reactor Coolant	1	A-7 thru A-18, A-30 thru A-46
OP-2-5128A	Reactor Coolant	1	A-19 thru A-29
OP-2-5129	CVCS-Reactor Letdown and Charging	2/3	B-43 thru B-45, B-93 thru B-104
OP-2-5129A	CVCS-Reactor Letdown and Charging	2/3	B-100 thru B-102
OP-2-5135	Component Cooling Water	3	N/A
OP-2-5135A	Component Cooling Water	3	N/A
OP-2-5135B	Component Cooling Water	3	N/A
OP-2-5135C	Component Cooling Water	3	N/A
OP-2-5135D	Component Cooling Water	2 (CPN)*	N/A
OP-2-5135E	Component Cooling Water	2 (CPN)*	N/A
OP-2-5135F	Component Cooling Water	3	N/A
OP-2-5135G	Component Cooling Water	3	N/A
OP-2-5141	Nuclear Sampling	2 (CPN)*	N/A
OP-2-5141A	Nuclear Sampling	2 (CPN)*	N/A
OP-2-5141D	Post Accident Sampling Containment Hydrogen	2 (CPN)*	N/A

* CPN – ISI Class 2 for Containment Penetration Piping only

TABLE 2-2

INSERVICE INSPECTION OPERATIONAL FLOW DIAGRAMS
UNIT 2

DRAWING NUMBER	TITLE	ISI CLASS	ISI ISOMETRIC
OP-2-5142	Emergency Core Cooling (SIS)	2/3	B-12 thru B-27, B-80 thru B-92
OP-2-5143	Emergency Core Cooling (RHR)	2	B-28 thru B-42
OP-2-5143A	Emergency Core Cooling (SIS), Accumulators	2	B-15 thru B-18
OP-2-5144	Containment Spray	2/3	
OP-2-5145	Weld Channel Pressurization	2 (CPN)*	N/A
OP-2-5146A	Ice Condenser Refrigeration	2 (CPN)*	N/A
OP-2-5146B	Ice Condenser Refrigeration	2 (CPN)*	N/A
OP-2-5147A	Containment Vent	2 (CPN)*	N/A
OP-2-5149	Control Room Vent.	3	N/A
OP-2-5151B	Emergency Diesel Generator	3	N/A
OP-2-5151D	Emergency Diesel Generator	3	N/A

* CPN – ISI Class 2 for Containment Penetration Piping only.

TABLE 2-3

INSERVICE INSPECTION OPERATIONAL FLOW DIAGRAMS UNITS 1 & 2 (COMMON)

DRAWING NUMBER	TITLE	ISI CLASS	ISI ISOMETRIC
OP-12-5115D	Primary Water	2 (CPN)*	N/A
OP-12-5120B	Compressed Air	2 (CPN)*	N/A
OP-12-5131	CVCS – Boron Makeup	3	N/A
OP-12-5136	Spent Fuel Pit Cooling and Cleanup	3	N/A
OP-12-5137A	WDS Vents and Drains	2 (CPN)*	N/A
OP-12-5141C	Post Accident Liquid and Gas Sampling	2 (CPN)*	N/A
OP-12-5141F	Post Accident Liquid Sampling Instrument Panel	2 (CPN)*	N/A

* CPN – ISI Class 2 for Containment Penetration Piping only

SECTION 3.0

INSERVICE INSPECTION SUMMARY TABLES

This section identifies the items subject to inservice inspection during the Fourth ISI Interval at CNP Units 1 and 2.

3.1 ASME Section XI Inservice Inspections

Inservice Inspection Summary Tables 3-1 and 3-2 for CNP Units 1 and 2 contain the following information:

3.1.1 Examination Category

Lists the examination category contained in ASME Section XI Tables IWB-2500-1, IWC-2500-1, IWD-2500-1, and IWF-2500-1. For RI-ISI components, the category is R-A per Code Case N-716. Only the examination categories applicable to CNP are included.

3.1.2 Item Number and Description of Components Examined

These columns list the item number and description contained in ASME Section XI Tables IWB-2500-1, IWC-2500-1, IWD-2500-1, and IWF-2500-1. For RI-ISI components, the item numbers are per Table 1 of Code Case N-716. Only the examination categories applicable to CNP are included.

3.1.3 Number of Components

This column lists the total population of nonexempt components that fit the criteria for each individual item number. Examination selections are based on proration, grouping, deferability, etc. requirements from the IWx-2500-1 tables and Code Case N-716 Table 1.

3.1.4 Examination Method

This column lists the examination method required by ASME Section XI Tables IWB-2500-1, IWC-2500-1, IWD-2500-1, and IWF-2500-1, as well as Table 1 from Code Case N-716.

3.1.5 Requests/Alternatives

This column lists applicable relief request or proposed alternatives to the ASME Section XI or NRC requirements. If a number appears in this column, Section 5.0 of this document contains the specifics associated with the request.

TABLE 3-1

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE

UNIT 1

TABLE 3-1

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 1

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
B-A Pressure Retaining Welds in Vessels	B1.11	**Shell Welds** Circumferential	3	Volumetric	N/A
	B1.12	Longitudinal	9	Volumetric	N/A
	B1.21	**Lower Head Welds** Circumferential	1	Volumetric	N/A
	B1.22	Meriodonal	5	Volumetric	N/A
	B1.30	**Shell-to-Flange Welds**	1	Volumetric	N/A

TABLE 3-1

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 1

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
B-B* Pressure Retaining Welds in Vessels Other than Reactor Vessels	B2.11	**Pressurizer Shell-To-Head Welds** Circumferential	2	Volumetric	N/A
	B2.12	Longitudinal	2	Volumetric	N/A
	B2.40	**Steam Generator (Primary Side) Head Welds** Tubesheet-To-Head weld	4	Volumetric	N/A

* Unit 1 Pressurizer Cast Head and Unit 1 Steam Generator are single forgings and do not have Item Number B2.20 type welds.

TABLE 3-1

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 1

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
B-D Full Penetration Welds of Nozzles in Vessels	B3.90	**Reactor Vessel Welds** Nozzle-To-Vessel	8	Volumetric	N/A
	B3.100	Nozzle Inside Radius	8	Volumetric	N/A
	B3.120	**Pressurizer Welds** Nozzle Inside Radius	6	Volumetric or Enhanced Visual	N/A
	B3.140	**Steam Generators (Primary Side)** Nozzle Inside Radius	8	Volumetric or Enhanced Visual	N/A

TABLE 3-1

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 1

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
B-G-1 Pressure retaining Bolting Greater than 2 in. in Diameter		**Reactor Vessel**			
	B6.10	Closure Head Nuts	54	Visual, VT-1	N/A
	B6.20	Closure Studs	54	Volumetric	N/A
	B6.40	Threads in Flange	54	Volumetric	N/A
	B6.50	Closure Washers	54	Visual, VT-1	N/A
		Pressurizer			
	B6.60	Bolts and Studs	N/A	Volumetric	N/A
		Steam Generators			
	B6.90	Bolts and Studs	8 sets of 16	Volumetric	N/A
	B6.100	Flange Surface	8 sets of 16	Visual, VT-1	N/A
	B6.110	Nuts and Washers	8 sets of 16	Visual, VT-1	N/A
		Pumps			
	B6.180	Bolts and Studs	4 sets of 24	Volumetric	N/A
	B6.190	Flange Surface	4	Visual, VT-1	N/A
	B6.200	Nuts and Washers	N/A	Visual, VT-1	N/A

TABLE 3-1

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 1

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
B-G-2 Pressure retaining Bolting 2 in. and Less in Diameter		**Pressurizer**			
	B7.20	Bolts/Studs/Nuts	1 set of 16	Visual, VT-1	N/A
	B7.30	**Steam Generators**	N/A	Visual, VT-1	N/A
		Piping			
	B7.50	Bolts/Studs/Nuts	3	Visual, VT-1	N/A
		Pumps			
	B7.60	Bolts/Studs/Nuts	4 sets of 12 (RCP seal bolting)	Visual, VT-1	N/A
		Valves			
	B7.70	Bolts/Studs/Nuts	23	Visual, VT-1	N/A

TABLE 3-1

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 1

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
B-K Welded Attachments for Vessels, Piping, Pumps, and Valves	B10.10	**Vessels**	1	Volumetric or Surface	N-460
	B10.20	**Piping**	38	Volumetric or Surface	N-460
	B10.30	**Pumps**	12	Volumetric or Surface	N-460

TABLE 3-1

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 1

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
B-L-1 Pressure Retaining Welds in Pump Casings	B12.10	**Pump Casing Welds**	4	Visual, VT-3	
B-L-2 Pump Casings	B12.20	**Pump Casings**	4	Visual, VT-3	N/A
B-M-2 Valve Bodies	B12.50	**Valve Body > NPS 4**	25	Visual, VT-3	N/A
B-N-1 Interior of Reactor Vessel	B13.10	**Vessel Interior**	1	Visual, VT-3	N/A
B-N-2 Integrally Welded Core Support Structures and Interior Attachments to Reactor Vessels	B13.60	**Interior Attachments Beyond Beltline Region**	1	Visual, VT-3	N/A

TABLE 3-1

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 1

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
B-N-3 Removable Core Support Structures	B13.70	**Core Support Structure**	1	Visual, VT-3	N/A
B-O Pressure Retaining Welds In Control Rod Drive Housings	B14.20	**Reactor Vessel (PWR)** Welds in Control Rod Drive Housings	1	Volumetric or Surface	N/A

TABLE 3-1

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 1

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
B-P All Pressure Retaining Components	B15.10	**System Leakage Test (IWB-5220)**	5	Visual, VT-2	ISIR-4-02 ISIR-4-03 ISIR-4-04

TABLE 3-1

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 1

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
C-A Pressure Retaining Welds In Pressure Vessels	C1.10	**Shell Circ Welds**	24	Volumetric	N/A
	C1.20	**Head Circ Welds**	16	Volumetric	N/A
	C1.30	**Tubesheet-To-Shell Welds**	12	Volumetric	N/A
C-B Pressure Retaining Nozzle Welds in Vessels	C2.11	**Nozzles in Vessels ≤ ½ in. Nominal Thickness** Nozzle-To-Shell (or Head) Weld	4	Surface	N/A
	C2.21	**Nozzles without reinforcing plate in Vessels ≥ ½ in. Nominal Thickness** Nozzle-To-Shell (or Head) Weld	18	Surface and Volumetric	N/A

TABLE 3-1

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 1

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
C-B Pressure Retaining Nozzle Welds in Vessels (Continued)	C2.22	Nozzle Radius	14	Volumetric	N/A
C-C Welded Attachments for Vessels, Piping, Pumps, and Valves	C3.10	**Pressure Vessels**	12	Surface	N/A
	C3.20	**Piping**	36	Surface	N/A
	C3.40	**Valves**	8	Surface	N/A
C-D Pressure Retaining Bolting ≥ 2 in. In Diameter	C4.10	**Pressure Vessels**	2	Volumetric	N/A
	C4.40	**Valves**	4	Volumetric	N/A

TABLE 3-1

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 1

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
C-G Pressure Retaining Welds in Pumps and Valves	C6.20	**Valve Body Welds**	4	Surface	N/A

TABLE 3-1

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 1

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
C-H All Pressure Retaining Components	C7.10	**System Leakage Test (IWC-5220)**	23	Visual, VT-2	N/A

TABLE 3-1

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 1

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
D-A Welded Attachments for Vessels, Piping, Pumps, and Valves	D1.20	**Piping**	107	Visual, VT-1	N/A
D-B All Pressure Retaining Components	D2.10	**System Leakage Test (IWD-5220)**	29	Visual, VT-2	N/A

TABLE 3-1

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 1

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
F-A Supports (Class 1)	F1.10A	**One-Direction Restraint**	23	Visual, VT-3	N/A
	F1.10B	**Multi-Direction Restraint**	25	Visual, VT-3	N/A
	F1.10C	**Spring Hangers and Supports**	21	Visual, VT-3	N/A
	F1.10S	**Snubbers**	1	Visual, VT-3	N/A
	F1.10WA	**Welded Attachment/ One-Direction Restraint**	16	Visual, VT-3	N/A
	F1.10WB	**Welded Attachment/ Multi-Direction Restraint**	14	Visual, VT-3	N/A

TABLE 3-1

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 1

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
F-A Supports (Class 1) (Continued)	F1.10WC	**Welded Attachment/Spring Hangers and Supports**	4	Visual, VT-3	N/A

TABLE 3-1

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 1

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
F-A Supports (Class 2)	F1.20A	One-Direction Restraint	120	Visual, VT-3	N/A
	F1.20B	Multi-Direction Restraint	52	Visual, VT-3	N/A
	F1.20C	Spring Hangers and Supports	33	Visual, VT-3	N/A
	F1.20S	Snubbers	10	Visual, VT-3	N/A
	F1.20SA	Snubbers/ One-Direction Restraint	1	Visual, VT-3	N/A
	F1.20WA	Welded Attachment/ One-Direction Restraint	96	Visual, VT-3	N/A
	F1.20WB	Welded Attachment/ Multi-Direction Restraint	49	Visual, VT-3	N/A
	F1.20WC	Welded Attachment/Spring Hangers and Supports	25	Visual, VT-3	N/A
	F1.20WS	Welded Attachment/ Snubbers	8	Visual, VT-3	N/A

TABLE 3-1

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 1

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
F-A Supports (Class 3)	F1.30A	**One-Direction Restraint**	271	Visual, VT-3	N/A
	F1.30B	**Multi-Direction Restraint**	149	Visual, VT-3	N/A
	F1.30C	**Spring Hangers and Supports**	14	Visual, VT-3	N/A
	F1.30S	**Snubbers**	1	Visual, VT-3	N/A
	F1.30WA	**Welded Attachment/ One-Direction Restraint**	33	Visual, VT-3	N/A
	F1.30WB	**Welded Attachment/ Multi-Direction Restraint**	73	Visual, VT-3	N/A
	F1.30WC	**Welded Attachment/Spring Hangers and Supports**	10	Visual, VT-3	N/A
	F1.30WS	**Welded Attachment/ Snubbers**	2	Visual, VT-3	N/A
F-A Supports (Class 1, 2, and 3)	F1.40	**Supports Other Than Piping Supports**	51	Visual, VT-3	N/A

TABLE 3-1

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 1

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
R-A Risk Informed Piping Inspections	R1.11	**Elements Subject to Thermal Fatigue**	60	Volumetric	ISIR-4-01
	R1.15	**Elements Subject to Primary Water Stress Corrosion Cracking (PWSCC)**	10	Volumetric	ISIR-4-01
	R1.16	**Elements Subject to Intergranular or Transgranular Stress Corrosion Cracking (IGSCC or TGSCC)**	47	Volumetric	ISIR-4-01
	R1.20	**Elements Not Subject to a Degradation Mechanism**	958	Volumetric	ISIR-4-01
	N/A	**Low Safety Significant Piping Structural Welds**	1497	N/A	ISIR-4-01

TABLE 3-2

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE

UNIT 2

TABLE 3-2

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 2

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
B-A Pressure Retaining Welds in Vessels	B1.11	**Shell Welds** Circumferential	3	Volumetric	N/A
	B1.12	Longitudinal	7	Volumetric	N/A
	B1.21	**Lower Head Welds** Circumferential	1	Volumetric	N/A
	B1.22	Meriodonal	7	Volumetric	N/A
	B1.30	**Shell-to-Flange Welds**	1	Volumetric	N/A

TABLE 3-2

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 2

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
B-B Pressure Retaining Welds in Vessels Other than Reactor Vessels	B2.11	**Pressurizer Shell-To-Head Welds** Circumferential	2	Volumetric	N/A
	B2.12	Longitudinal	2	Volumetric	N/A
	B2.40	**Steam Generator (Primary Side) Head Welds** Tubesheet-To-Head weld	4	Volumetric	N/A

TABLE 3-2

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 2

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
B-D Full Penetration Welds of Nozzles in Vessels		**Reactor Vessel Welds**			
	B3.90	Nozzle-To-Vessel	8	Volumetric	N/A
	B3.100	Nozzle Inside Radius	8	Volumetric	N/A
		Pressurizer Welds			
	B3.110	Nozzle-to-Vessel	6	Volumetric	N/A
	B3.120	Nozzle Inside Radius	6	Volumetric	N/A
		Steam Generators (Primary Side)			
	B3.130	Nozzle-To-Vessel	N/A	Volumetric	N/A
	B3.140	Nozzle Inside Radius	8	Volumetric	N/A

TABLE 3-2

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 2

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
B-G-1 Pressure retaining Bolting Greater than 2 in. in Diameter		**Reactor Vessel**			
	B6.10	Closure Head Nuts	54	Visual, VT-1	N/A
	B6.20	Closure Studs	54	Volumetric	N/A
	B6.40	Threads in Flange	54	Volumetric	N/A
	B6.50	Closure Washers	54	Visual, VT-1	N/A
		Steam Generators			
	B6.90	Bolts and Studs	N/A	Volumetric	N/A
	B6.100	Flange Surface	N/A	Visual, VT-1	N/A
	B6.110	Nuts and Washers	N/A	Visual, VT-1	N/A
		Pumps			
	B6.180	Bolts and Studs	4 sets of 24	Volumetric	N/A
	B6.190	Flange Surface	4	Visual, VT-1	N/A
	B6.200	Nuts and Washers	N/A	Visual, VT-1	N/A

TABLE 3-2

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 2

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
B-G-2 Pressure retaining Bolting 2 in. and Less in Diameter	B7.20	**Pressurizer** Bolts/Studs/Nuts	1 set of 16	Visual, VT-1	
	B7.30	**Steam Generators**	8 sets of 16	Visual, VT-1	
	B7.50	**Piping** Bolts/Studs/Nuts	15	Visual, VT-1	
	B7.70	**Valves** Bolts/Studs/Nuts	25	Visual, VT-1	

TABLE 3-2

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 2

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
B-K Welded Attachments for Vessels, Piping, Pumps, and Valves	B10.10	**Vessels**	1	Volumetric or Surface	N-460
	B10.20	**Piping**	35	Volumetric or Surface	N-460
	B10.30	**Pumps**	12	Volumetric or Surface	N-460

TABLE 3-2

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 2

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
B-L-1 Pressure Retaining Welds in Pump Casings	B12.10	**Pump Casing Welds**	4	Volumetric	
B-L-2 Pump Casings	B12.20	**Pump Casings**	4	Visual, VT-3	N/A
B-M-2 Valve Bodies	B12.50	**Valve Body > NPS 4**	25	Visual, VT-3	N/A
B-N-1 Interior of Reactor Vessel	B13.10	**Vessel Interior**	1	Visual, VT-3	N/A
B-N-2 Integrally Welded Core Support Structures and Interior Attachments to Reactor Vessels	B13.60	**Interior Attachments Beyond Beltline Region**	1	Visual, VT-3	N/A

TABLE 3-2

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 2

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
B-N-3 Removable Core Support Structures	B13.70	**Core Support Structure**	1	Visual, VT-3	N/A
B-O Pressure Retaining Welds In Control Rod Drive Housings	B14.20	**Reactor Vessel (PWR)** Welds in Control Rod Drive Housings	1	Volumetric or Surface	N/A

TABLE 3-2

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 2

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
B-P All Pressure Retaining Components	B15.10	**System Leakage Test (IWB-5220)**	5	Visual, VT-2	ISIR-4-02 ISIR-4-03 ISIR-4-04

TABLE 3-2

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 2

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
C-A Pressure Retaining Welds In Pressure Vessels	C1.10	**Shell Circ Welds**	24	Volumetric	N/A
	C1.20	**Head Circ Welds**	16	Volumetric	N/A
	C1.30	**Tubesheet-To-Shell Welds**	12	Volumetric	N/A
C-B Pressure Retaining Nozzle Welds in Vessels	C2.11	**Nozzles in Vessels ≤ ½ in. Nominal Thickness** Nozzle-To-Shell (or Head) Weld	4	Surface	N/A
	C2.21	**Nozzles without reinforcing plate in Vessels ≥ ½ in. Nominal Thickness** Nozzle-To-Shell (or Head) Weld	18	Surface and Volumetric	N/A

TABLE 3-2

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 2

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
C-B Pressure Retaining Nozzle Welds in Vessels (Continued)	C2.22	Nozzle Radius	14	Volumetric	N/A
C-C Welded Attachments for Vessels, Piping, Pumps and Valves	C3.10	**Pressure Vessels**	12	Surface	N/A
	C3.20	**Piping**	56	Surface	N/A
	C3.30	**Pumps**	4	Surface	N/A
	C3.40	**Valves**	7	Surface	N/A
C-D Pressure Retaining Bolting ≥ 2 in. In Diameter	C4.10	**Pressure Vessels**	1	Volumetric	N/A
	C4.40	**Valves**	4	Volumetric	N/A

TABLE 3-2

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 2

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
C-G Pressure Retaining Welds in Pumps and Valves	C6.20	**Valve Body Welds**	4	Surface	N/A

TABLE 3-2

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 2

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
C-H All Pressure Retaining Components	C7.10	**System Leakage Test (IWC-5220)**	23	Visual, VT-2	N/A

TABLE 3-2

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 2

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
D-A Welded Attachments for Vessels, Piping, Pumps, and Valves	D1.20	**Piping**	111	Visual, VT-1	N/A
D-B All Pressure Retaining Components	D2.10	**System Leakage Test (IWD-5220)**	28	Visual, VT-2	N/A

TABLE 3-2

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 2

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
F-A Supports (Class 1)	F1.10A	**One-Direction Restraint**	19	Visual, VT-3	N/A
	F1.10B	**Multi-Direction Restraint**	27	Visual, VT-3	N/A
	F1.10C	**Spring Hangers and Supports**	15	Visual, VT-3	N/A
	F1.10S	**Snubbers**	9	Visual, VT-3	N/A
	F1.10BS	**Snubber/Multi-Direction Restraint**	3	Visual, VT-3	N/A
	F1.10WA	**Welded Attachment/ One-Direction Restraint**	18	Visual, VT-3	N/A
	F1.10WB	**Welded Attachment/ Multi-Direction Restraint**	22	Visual, VT-3	N/A

TABLE 3-2

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 2

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
F-A Supports (Class 1) (Continued)	F1.10WC	**Welded Attachment/Spring Hangers and Supports**	2	Visual, VT-3	N/A
	F1.10WS	**Welded Attachment/Snubber**	1	Visual, VT-3	N/A

TABLE 3-2

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 2

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
F-A Supports (Class 2)	F1.20A	**One-Direction Restraint**	91	Visual, VT-3	N/A
	F1.20B	**Multi-Direction Restraint**	53	Visual, VT-3	N/A
	F1.20C	**Spring Hangers and Supports**	34	Visual, VT-3	N/A
	F1.20D	**Anchors**	2	Visual, VT-3	N/A
	F1.20S	**Snubbers**	15	Visual, VT-3	N/A
	F1.20WA	**Welded Attachment/ One-Direction Restraint**	89	Visual, VT-3	N/A
	F1.20WB	**Welded Attachment/ Multi-Direction Restraint**	53	Visual, VT-3	N/A
	F1.20WC	**Welded Attachment/Spring Hangers and Supports**	16	Visual, VT-3	N/A
	F1.20WS	**Welded Attachment/ Snubbers**	11	Visual, VT-3	N/A

TABLE 3-2

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 2

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
F-A Supports (Class 3)	F1.30A	**One-Direction Restraint**	291	Visual, VT-3	N/A
	F1.30B	**Multi-Direction Restraint**	156	Visual, VT-3	N/A
	F1.30C	**Spring Hangers and Supports**	0	Visual, VT-3	N/A
	F1.30S	**Snubbers**	0	Visual, VT-3	N/A
	F1.30WA	**Welded Attachment/ One-Direction Restraint**	42	Visual, VT-3	N/A
	F1.30WB	**Welded Attachment/ Multi-Direction Restraint**	51	Visual, VT-3	N/A
	F1.30WC	**Welded Attachment/Spring Hangers and Supports**	0	Visual, VT-3	N/A
	F1.30WS	**Welded Attachment/ Snubbers**	1	Visual, VT-3	N/A
F-A Supports (Class 1, 2, and 3)	F1.40	**Supports Other Than Piping Supports**	55	Visual, VT-3	N/A
	F1.40WA	**Welded Attachment/One-Direction Restraint**	6	Visual, VT-3	N/A

TABLE 3-2

ASME SECTION XI
INSERVICE INSPECTION SUMMARY TABLE
UNIT 2

EXAMINATION CATEGORY	ITEM NUMBER	DESCRIPTION OF COMPONENTS	NUMBER OF COMPONENTS	EXAMINATION METHODS	REQUESTS/ ALTERNATIVES
R-A Risk Informed Piping Inspections	R1.11	**Elements Subject to Thermal Fatigue**	61	Volumetric	ISIR-4-01
	R1.15	**Elements Subject to Primary Water Stress Corrosion Cracking (PWSCC)**	6	Volumetric	ISIR-4-01
	R1.16	**Elements Subject to Intergranular or Transgranular Stress Corrosion Cracking (IGSCC or TGSCC)**	43	Volumetric	ISIR-4-01
	R1.20	**Elements Not Subject to a Degradation Mechanism**	985	Volumetric	ISIR-4-01
	N/A	**Low Safety Significant Piping Structural Welds**	1409	N/A	ISIR-4-01

SECTION 4.0

ALTERNATIVE REQUIREMENTS TO ASME SECTION XI

The alternative requirements to the 2004 Edition, No Addenda of ASME Section XI adopted for use at CNP Units 1 and 2 are listed in this section. The alternatives are implemented as allowed by ASME Section XI and 10CFR50.55a.

4.1 Adoption of Code Cases

This section identifies the Code Cases adopted for the Fourth ISI Interval at CNP Units 1 and 2. A Code Case or other alternative is not required to appear in this document prior to its use provided it has met all the applicable requirements of 10CFR50.55a and ASME Section XI, Paragraph IWA-2440. This document shall be revised within 90 days of the completion of the next NIS-1 if Code Cases or other alternatives were used that are not listed in this document.

The methodology for adopting Code Cases is described in Sections 4.1.1, 4.1.2, 4.1.3, 4.1.4, and 4.1.5.

4.1.1 Adoption of Code Cases listed for use in Regulatory Guide 1.147

As referenced by 10CFR50.55a(b)(5) and allowed by Regulatory Guide 1.147, the following Code Cases are currently adopted for use at CNP. Revision 15 of RG 1.147 is the latest incorporated into this ISI Program Plan. For each Code Case listed below, the RG 1.147 revision at the time the specific case was added to the Plan is identified.

Once incorporated into the Plan, the Code Case is available for the remainder of the interval. All conditions and limitations associated with the Code Case shall apply. Repair/replacement Code Cases are included to provide potential alternatives for future activities that may be required throughout the interval.

Additional Code Cases invoked in the future shall be in accordance with those approved for use in the latest published revision of Regulatory Guide 1.147 at that time.

N-432-1 Repair Welding Using Automatic or Machine Gas Tungsten-Arc Welding (GTAW) Temper Bead Technique. Regulatory Guide 1.147, Revision 15.

N-460 Alternative Examination Coverage for Class 1 and Class 2 Welds. Regulatory Guide 1.147, Revision 15.

N-504-3 Alternative Rules for Repair of Class 1, 2, and 3 Austenitic Stainless Steel Piping

Code Case N-504-3 is acceptable subject to the following condition specified in Regulatory Guide 1.147, Revision 15:

> The provisions of Section XI, Nonmandatory Appendix Q, "Weld Overlay Repair of Class 1, 2, and 3 Austenitic Stainless Steel Piping Weldments," must also be met.

N-516-3 Underwater Welding

Code Case N-516-3 is acceptable subject to the following condition specified in Regulatory Guide 1.147, Revision 15:

> Licensee must obtain NRC approval in accordance with 10CFR50.55a(a)(3) regarding the technique to be used in the weld repair or replacement of irradiated material underwater.

N-517-1 Quality Assurance Program Requirements for Owner. Regulatory Guide 1.147, Revision 15.

N-526 Alternative Requirements for Successive Inspections of Class 1 and 2 Vessels. Regulatory Guide 1.147, Revision 15.

N-528-1 Purchase, Exchange, or Transfer of Material Between Nuclear Plant Sites

Code Case N-528-1 is acceptable subject to the following condition specified in Regulatory Guide 1.147, Revision 15:

The requirements of 10CFR Part 21, "Reporting of Defects and Noncompliance", are to be applied to the nuclear plant site supplying the material as well as to the nuclear plant sire receiving the material that has been purchased, exchanged, or transferred between sites.

N-532-4 Alternative Requirements to Repair and Replacement Documentation Requirements and Inservice Summary Report Preparation and Submission as Required by Articles IWA-4000 and IWA-6000. Regulatory Guide 1.147, Revision 15.

N-552 Alternative Methods – Qualification for Nozzle Inside Radius Section from the Outside Surface

Code Case N-552 is acceptable subject to the following conditions specified in Regulatory Guide 1.147, Revision 15:

> To achieve consistency with the 10CFR50.55a rule change published September 22, 1999 (64 FR 51370), incorporative Appendix VIII, "Performance Demonstration for Ultrasonic

Examination Systems," to ASME Section XI, add the following to the specimen requirements:

"At least 50 percent of the flaws in the demonstration test set must be cracks and the maximum misorientation must be demonstrated with cracks. Flaws in nozzles with bore diameters equal to or less that 4 inches may be notches."

Add to detection criteria, "The number of false calls must not exceed three."

N-566-2 Corrective Action for Leakage Identified at Bolted Connections. Regulatory Guide 1.147, Revision 15.

N-569-1 Alternative Rules for Repair by Electrochemical Deposition of Class 1 and 2 Steam Generator Tubing

Code Case N-569-1 is acceptable subject to the following conditions specified in Regulatory Guide 1.147, Revision 15:

Note: Steam Generator tube repair methods require prior NRC approval through the Technical Specifications. This Code Case does not address certain aspects of this repair, e.g., the qualification of the inspection and plugging criteria necessary for staff approval of the repair method. In addition, if the user plans to "reconcile," as described in Footnote 2, the reconciliation is to be performed in accordance with Subarticle IWA-4200 in the 1995 Edition through the 1996 Addenda of ASME Section XI.

N-586-1 Alternative Additional Examination Requirements for Classes 1, 2, and 3 Piping, Components, and Supports. Regulatory Guide 1.147, Revision 15.

N-593 Alternative Examination Requirements for Steam Generator Nozzle to Vessel Welds

Code Case N-593 is acceptable subject to the following conditions specified in Regulatory Guide 1.147, Revision 15:

Essentially 100 percent (not less than 90 percent) of the examination volume A-B-C-E-F-G-H must be inspected.

N-597-2 Requirements for Analytical Evaluation of Pipe Wall Thinning

Code Case N-597-2 is acceptable subject to the following conditions specified in Regulatory Guide 1.147, Revision 15:

(1) Code Case must be supplemented by the provisions of EPRI Nuclear Safety Analysis Center Report 202L-R2, April 1999, "Recommendations for an Effective Flow Accelerated Corrosion Program," for developing the inspection requirements, the method of predicting the rate of wall thickness loss, and the value of the predicted remaining wall thickness. As used in NSAC-202L-R2, the term "should" is to be applied as "shall" (i.e., a requirement).

(2) Components affected by flow-accelerated corrosion to which this Code Case are applied must be repaired or replaced in accordance with the construction Code of record and Owner's requirements or a later NRC approved edition of Section III, "Rules for Construction of Nuclear Plant Components", of the ASME Code prior to the value of t_p reaching the allowable minimum wall thickness, t_{min}, as specified in -3622.1(a)(1) of this Code Case. Alternatively, use of the Code Case is subject to NRC review and approval per 10CFR50.55a(a)(3).

(3) For Class 1 piping not meeting the criteria of -3221, the use of evaluation methods and criteria is subject to NRC review and approval per 10CFR50.55a(a)(3).

(4) For those components that do not require immediate repair or replacement, the rate of wall thickness loss is to be used to determine a suitable inspection frequency so that repair or replacement occurs prior to reaching allowable minimum wall thickness, t_{min}.

(5) For corrosion phenomenon other than flow accelerated corrosion, use of the Code Case is subject to NRC review and approval per 10CFR50.55a(a)(3). Inspection plans and wall thinning rates may be difficult to justify for certain degradation mechanisms such as MIC and pitting.

N-600 Transfer of Welder, Welding Operator, Brazer, and Brazing Operator Qualifications Between Owners. Regulatory Guide 1.147, Revision 15.

N-613-1 Ultrasonic Examination of Full Penetration Nozzles in Vessels, Examination Category B-D, Item Nos. B3.10 and B3.90, Reactor Nozzle-to-Vessel Welds, Figs. IWB-2500-7(a), (b), and (c) . Regulatory Guide 1.147, Revision 15.

N-624 Successive Inspections. Regulatory Guide 1.147, Revision 15.

N-629 Use of Fracture Toughness Test Data to Establish Reference Temperature for Pressure Retaining Materials. Regulatory Guide 1.147, Revision 15.

N-638-1 Similar and Dissimilar Metal Welding Using Ambient Temperature Machine GTAW Temper Bead Technique

Code Case N-638-1 is acceptable subject to the following conditions specified in Regulatory Guide 1.147, Revision 15:

> UT examinations shall be performed with personnel and procedures qualified for the repaired volume and qualified by demonstration using representative samples, which contain construction type flaws. The acceptance criteria of NB-5330 in the 1998 Edition through the 2000 Addenda of Section III apply to all flaws identified within the repaired volume.

N-639 Alternative Calibration Block Material

Code Case N-639 is acceptable subject to the following conditions specified in Regulatory Guide 1.147, Revision 15:

> Chemical ranges of the calibration block may vary from the materials specification if (1) it is within the chemical range of the component specification to be inspected, and (2) the phase and grain shape are maintained in the same ranges produced by the thermal process required by the material specification.

N-641 Alternative Pressure-Temperature Relationship and Low Temperature Overpressure Protection System Requirements. Regulatory Guide 1.147, Revision 15.

N-643-2 Fatigue Crack Growth Rate Curves for Ferritic Steels in PWR Water Environment. Regulatory Guide 1.147, Revision 15.

N-648-1 Alternative Requirements for Inner Radius Examination of Class 1 Reactor Vessel Nozzles

Code Case N-648-1 is acceptable subject to the following conditions specified in Regulatory Guide 1.147, Revision 15:

> In place of a UT examination, licensees may perform a visual examination with enhanced magnification that has a resolution sensitivity to detect a 1-mil width wire or crack, utilizing the allowable flaw length criteria of Table IWB-3512-1 with limiting assumptions on the flaw aspect ratio. The provisions of Table IWB-2500-1, Examination Category B-D, continue to apply except that, in place of examination volumes, the surfaces to be examined are the external surfaces shown in the figures applicable to this table (the external surface is from point M to point N in the figure).

N-649 Alternative Requirements for IWE-5240 Visual Examination. Regulatory Guide 1.147, Revision 15.

N-651 Ferritic and Dissimilar Metal Welding Using SMAW Temper Bead Technique Without Removing the Weld Bead Crown of the First Layer. Regulatory Guide 1.147, Revision 15.

N-661 Alternative Requirements for Wall Thickness Restoration of Classes 2 and 3 Carbon Steel Piping for Raw Water Service

Code Case N-661 is acceptable subject to the following conditions specified in Regulatory Guide 1.147, Revision 15:

(a) If the root cause of the degradation has not been determined, the repair is only acceptable for one cycle.
(b) Weld overlay repair of an area can only be performed once in the same location.
(c) When through-wall repairs are made by welding on surfaces that are wet or exposed to water, the weld overlay repair is only acceptable until the next refueling outage.

N-664 Performance Demonstration Requirements for Examination of Unclad Reactor Pressure Vessel Welds, Excluding Flange Welds. Regulatory Guide 1.147, Revision 15.

N-665 Alternative Requirements for Beam Angle Measurements Using Refracted Longitudinal Wave Search Units, Section XI, Division 1. Regulatory Guide 1.147, Revision 15.

N-686 Alternative Requirements for Visual Examinations, VT-1, VT-2, and VT-3. Regulatory Guide 1.147, Revision 15.

N-706 Alternative Examination Requirements of Table IWB-2500-1 and Table IWC-2500-1 for PWR Stainless Steel Residual and Regenerative Heat Exchangers. Regulatory Guide 1.147, Revision 15.

4.1.2 Adoption of Code Cases listed for use in Regulatory Guide 1.192

As referenced by 10CFR50.55a(b)(6) and allowed by Regulatory Guide 1.192, the following Code Cases relative to the Snubber Inspection Program are being adopted for use at CNP. Inservice Testing (IST) related Code Cases implemented by CNP are included in the IST Program. Revision 0 of RG 1.192 is the latest incorporated into this ISI Program Plan. For each Code Case listed below, the RG 1.192 revision at the time the specific case was added to the Plan is identified.

Once incorporated into the Plan, the Code Case is available for the remainder of the interval. All conditions and limitations associated with the Code Case shall apply.

Additional Code Cases invoked in the future shall be in accordance with those approved for use in the latest published revision of Regulatory Guide 1.192 at that time.

OMN-13, Rev. 0	Requirements for Extending Snubber Inservice Visual Examination Interval at LWR Power Plants, OM Code.

4.1.3 Adoption of Code Cases not listed for use in Regulatory Guides 1.147 and 1.192

Adoption of Code Cases that have been approved by the Board of Nuclear Codes and Standards, but not listed in Regulatory Guide 1.147 or 1.192, may be submitted for use to the NRC in the form of a Relief Request per the requirements of 10CFR50.55a(a)(3).

Table 4-1 lists Code Cases that CNP has submitted for use to the NRC as Relief Requests. Upon approval by the NRC, the Code Case alternatives will be available for use in accordance with any conditions of the authorizing Safety Evaluation.

TABLE 4-1

CODE CASES SUBMITTED FOR USE THROUGH RELIEF REQUESTS

CODE CASE	TITLE	REQUEST NUMBER
N-716	Alternate Classification and Examination Requirements, Section XI, Division 1	ISIR-4-01 (Submitted as part of the original Fourth Interval ISI Program.)

4.1.4 Adoption of Code Cases listed for generic use in Regulatory Guide 1.147, but subsequently annulled by ASME Section XI

Under certain circumstances, it may be necessary to adopt a Code Case that has been annulled after being approved for use in Regulatory Guide 1.147. Therefore, CNP endorses all Code Cases approved in Regulatory Guide 1.147, Revision 15, and similarly will endorse all Cases included in future revisions of the Regulatory Guide issued within the inspection interval. Endorsement of these revisions does not commit CNP to all Code Cases listed, but simply allows CNP to implement a previously accepted Code Case that was applicable to the current inspection interval.

4.1.5 Adoption of Code Cases issued subsequent to filing this ISI Program Plan

Code Cases issued by ASME Section XI subsequent to the initial filing of this Fourth Interval ISI Program Plan may be added for use through amendments to the Plan in accordance with IWA-2441(d).

4.2 Use of Subsequent Editions of ASME Section XI

Per 10CFR50.55a(g)(4)(iv), the requirements of subsequent editions and addenda of Section XI approved in 10CFR50.55a(b) may be used, subject to the limitations included in the endorsement of that edition and addenda.

Use of these later approved editions and addenda, even though incorporated into the regulations, is still subject to NRC approval. Reference NRC Regulatory Issue Summary 2004-12, "Clarification on Use of Later Editions and Addenda to the ASME OM Code and ASME Section XI".

4.3 Inservice Inspection Relief Requests

4.3.1 Alternatives to examinations required by the Code may be *authorized* by the NRC, as allowed by 10CFR50.55a(a)(3), provided that:

> the proposed Alternative examination will assure an acceptable level of quality and safety; or,
>
> that compliance with the specified requirements would result in Hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Specific alternatives shall be documented and submitted to the NRC for approval in the form of a Relief Request. Section 5.0 of this ISI Program Plan contains the Relief Requests that are, or were, applicable to the Fourth Inspection Interval.

4.3.2 Examination requirements of the Code that are determined by the licensee to be Impractical in accordance with 10CFR50.55a(g)(5) may be *granted* relief by the NRC per 10CFR50.55a(g)(6)(i).

When examination requirements are encountered during the interval that are considered impractical, a Relief Request shall be prepared and submitted to the NRC for approval. Section 5.0 of this ISI Program Plan contains the Relief Requests that are, or were, applicable to the Fourth Inspection Interval.

Relief Requests for limited examination coverage shall be submitted as required by 10CFR50.55a(g)(5)(iv). Attempts should be made to submit such limited coverage relief requests as the limitations are identified at each inspection period, and in all cases, the basis for the relief requests must be demonstrated to the satisfaction of the NRC not later than 12 months after the end of the inspection interval.

The ANII shall be notified prior to implementing a relief request.

SECTION 5.0

RELIEF REQUESTS

This section contains relief requests written per 10CFR50.55a(a)(3)(i) for situations where alternatives to ASME Section XI requirements provide an acceptable level of quality and safety; per 10CFR50.55a(a)(3)(ii) for situations where compliance with ASME Section XI requirements results in a hardship or an unusual difficulty without a compensating increase in the level of quality and safety; and per 10CFR50.55a(g)(5)(iii) for situations where ASME Section XI requirements are considered impractical.

The following guidance was utilized to determine the correct 10CFR50.55a paragraph citing for CNP relief requests. 10CFR50.55a(a)(3)(i) and 10CFR50.55a(a)(3)(ii) provide alternatives to the requirements of ASME Section XI, while 10CFR50.55a(g)(5)(iii) recognizes situational impracticalities.

10CFR50.55a(a)(3)(i): Cited in relief requests when alternatives to the ASME Section XI requirements which provide an acceptable level of quality and safety are proposed. Examples are relief requests which propose alternative NDE methods and/or examination frequency.

10CFR50.55a(a)(3)(ii): Cited in relief requests when compliance with the ASME Section XI requirements is deemed to be a hardship or unusual difficulty without a compensating increase in the level of quality and safety. Examples of hardship and/or unusual difficulty include, but are not limited to, excessive radiation exposure, disassembly of components solely to provide access for examinations, and development of sophisticated tooling that would result in only minimal increases in examination coverage.

10CFR50.55a(g)(5)(iii): Cited in relief requests when conformance with ASME Section XI requirements is deemed impractical. Examples of impractical requirements are situations where the component would have to be redesigned or replaced to enable the required inspection to be performed.

A Relief Request Index that provides a listing and revision status for CNP Fourth Interval Relief Requests is included in Table 5-1. The "ISIR-4-XX" relief requests are applicable to ISI or SPT as noted. CISI Relief Requests are contained in the Containment ISI Program Plan. (Note the footnotes at the bottom of the table for relief request status options.) Safety Evaluation (SE) references should be noted in this table once NRC approval is obtained.

The numbering convention (i.e., ISIR-4-01, etc.) is specific to the Fourth Inspection Interval. This numbering convention shall be used for all Fourth Interval Relief Requests and shall remain in place through the end of the Interval.

TABLE 5-1
ISI PROGRAM RELIEF REQUEST INDEX

Relief Request	Revision Date[3]	Status[2]	(Program) Description/ Approval Summary[1]
ISIR-4-01	0 10/30/09	Submitted	**(ISI)** Request for Approval of Risk-Informed Inservice Inspection Program for Categories B-F, B-J, C-F-1, and C-F-2 Piping Welds. **Revision 0, Submitted 10/30/09.**
ISIR-4-02	0 10/30/09	Submitted	**(SPT)** Class 1 Pressure Retaining Safety Injection System Piping Pressure Test. **Revision 0, Submitted 10/30/09.**
ISIR-4-03	0 10/30/09	Submitted	**(SPT)** Class 1 Pressure Retaining Residual Heat Removal Suction Piping Between Isolation Valves 1/2-IMO-128 and 1/2-ICM-129. **Revision 0, Submitted 10/30/09.**
ISIR-4-04	0 10/30/09	Submitted	**(SPT)** Pressurization Boundary for Class 1 Small Bore Vent, Drain, and Instrument Connection Piping during the Interval Pressure Test. **Revision 0, Submitted 10/30/09.**

Note 1: The NRC grants relief requests pursuant to 10CFR50.55a(g)(6)(i) when Code requirements cannot be met and proposed alternatives do not meet the criteria of 10CFR50.55(a)(3). The NRC authorizes relief requests pursuant to 10CFR50.55a(a)(3)(i) if the proposed alternatives provide an acceptable level of quality and safety or under (3)(ii) if compliance with the specified requirements would result in hardship or unusual difficulties without a compensating increase in the level of safety.

Note 2: This column represents the status of the latest revision. Relief Request Status Options: Authorized - Approved for use in an NRC SER (See Note 1); Granted - Approved for use in an NRC SER (See Note 1); Authorized Conditionally - Approved for use in an NRC SER which imposes certain conditions; Denied - Use denied in an NRC SER; Expired - Approval for relief has expired; Withdrawn - Relief has been withdrawn by CNP; Not Required - The NRC has deemed the relief unnecessary in an SER or RAI; Cancelled - Relief has been cancelled by CNP prior to issue; Submitted - Relief has been submitted to the NRC by the station and is awaiting approval; Draft - Relief is in the course of preparation.

Note 3: The revision listed is the latest revision of the subject relief request. The date this revision became effective is the date of the approving SER which is included in the fourth column of the table of the description. The date noted in the second column is the date of the ISI Program Plan revision when the relief request was incorporated into this document.

10CFR50.55a RELIEF REQUEST ISIR-4-01
Revision 0
(Page 1 of 6)

Request for Relief for Alternate Risk-Informed Inservice Inspection Program for Categories B-F, B-J, C-F-1, and C-F-2 Pressure Retaining Piping Welds In Accordance with 10CFR50.55a(a)(3)(i)

1.0 ASME CODE COMPONENTS AFFECTED:

Code Class:	1 and 2
Examination Category:	B-F, B-J, C-F-1, and C-F-2
Item Number:	B5.10, B5.40, B5.70, B9.11, B9.21, B9.22, B9.31, B9.32, B9.40, C5.11, C5.21, C5.30, and C5.51
Description:	Alternate Risk-Informed Selection and Examination Criteria for Categories B-F, B-J, C-F-1, and C-F-2 Pressure Retaining Piping Welds
Component Number:	Pressure Retaining Piping

2.0 APPLICABLE CODE EDITION AND ADDENDA:

The Fourth Interval Inservice Inspection Program for Units 1 & 2 is based on the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, 2004 Edition, No Addenda.

3.0 APPLICABLE CODE REQUIREMENT:

Table IWB-2500-1, Examination Category B-F, requires volumetric and surface examinations on all welds for Item Numbers B5.10, B5.40, and B5.70.

Table IWB-2500-1, Examination Category B-J, requires volumetric and surface examinations on a sample of welds for Item Numbers B9.11 and B9.31, volumetric examinations on a sample of welds for Item Number B9.22, and surface examinations on a sample of welds for Item Numbers B9.21, B9.32, and B9.40. The weld population selected for inspection includes the following:

1. All terminal ends in each pipe or branch run connected to vessels.

2. All terminal ends and joints in each pipe or branch run connected to other components where the stress levels exceed either of the following limits under loads associated with specific seismic events and operational conditions:

10CFR50.55a RELIEF REQUEST ISIR-4-01
Revision 0
(Page 2 of 6)

a. primary plus secondary stress intensity range of $2.4S_m$ for ferritic steel and austenitic steel.

b. cumulative usage factor U of 0.4.

3. All dissimilar metal welds not covered under Examination Category B-F.

4. Additional piping welds so that the total number of circumferential butt welds, branch connections, or socket welds selected for examination equals 25% of the circumferential butt welds, branch connection, or socket welds in the reactor coolant piping system. This total does not include welds exempted by Paragraph IWB-1220.

5. A 10% sample of PWR high pressure safety injection system circumferential welds in piping ≥ NPS 1½ and < NPS 4 shall be selected for examination. This sample shall be selected from locations determined by the Owner as most likely to be subject to thermal fatigue.

Table IWC-2500-1, Examination Categories C-F-1 and C-F-2 require volumetric and surface examinations on a sample of welds for Item Numbers C5.11, C5.21, and C5.51, and surface examinations on a sample of welds for Item Number C5.30. The weld population selected for inspection includes the following:

1. Welds selected for examination shall include 7.5%, but not less than 28 welds, of all dissimilar metal, austenitic stainless steel and high alloy welds (Examination Category C-F-1) or of all carbon and low alloy steel welds (Examination Category C-F-2) not exempted by Paragraph IWC-1220. (Some welds not exempted by Paragraph IWC-1220 are not required to be nondestructively examined per Examination Categories C-F-1 and C-F-2. These welds, however, shall be included in the total weld count to which the 7.5% sampling rate is applied.) The examinations shall be distributed as follows:

   a. the examinations shall be distributed among the Class 2 systems prorated, to the degree practicable, on the number of nonexempt dissimilar metal, austenitic stainless steel and high alloy welds (Examination Category C-F-1) or carbon and low alloy welds (Examination Category C-F-2) in each system;

   b. within a system, the examinations shall be distributed among terminal ends, dissimilar metal welds, and structural discontinuities prorated, to the degree practicable, on the number of nonexempt terminal ends, dissimilar metal welds, and structural discontinuities in the system; and within each

10CFR50.55a RELIEF REQUEST ISIR-4-01
Revision 0
(Page 3 of 6)

system, examinations shall be distributed between line sizes prorated to the degree practicable.

4.0 REASON FOR REQUEST:

Pursuant to 10CFR50.55a(a)(3)(i), relief is requested on the basis that the proposed alternative utilizing Reference 1 will provide an acceptable level of quality and safety. The process followed under Reference 1, ASME Code Case N-716, is founded in large part on the risk-informed methodology of Reference 2, EPRI TR-112657, which is reviewed and approved by a subsequent NRC Safety Evaluation.

The initial Donald C. Cook Nuclear Plant RI-ISI Program (Reference 5) was submitted during the Third Period of the Third Inspection Interval. This initial RI-ISI program was developed in accordance with ASME Code Case N-716. The program was approved for use by the USNRC via a Safety Evaluation as transmitted to Indiana Michigan Power Company on September 28, 2007 (Reference 6). The PRA Analysis was assessed in April 2009 and the conclusions support the Risk Informed ISI Program (Reference 7).

The transition from the 1989 Edition to the 2004 Edition, No Addenda of ASME Section XI for Cook Nuclear Plant's Fourth Inspection Interval does not change the basis or methodology of the currently approved Risk-Informed ISI evaluation process being implemented in the Third Inspection Interval. The requirements of the new Code edition/addenda will be implemented as detailed in the CNP Fourth Interval ISI Program Plan.

For the Fourth Interval RI-ISI Program, the actual safety significance and susceptibility analysis, element selection, and change in risk evaluation of the currently approved RI-ISI Program (Reference 5) remain unchanged and continue to form the basis of the program. Although PRA model revisions have occurred since the RI-ISI program was approved, there were no resulting changes in the break location Consequence Rank or the bounding CCDP values used for the risk evaluations. As the initial RI-ISI Program was approved less than two years ago (Reference 6) and has only recently been implemented, no new significant plant history require incorporation as part of the interval transition. CNP did review recent plant modifications, exam coverage, and element selections in order to validate the current HSS locations and inspections meet the requirements of Reference 1. Only minor selection adjustments were made, and the requirements of Section 4 of ASME Code Case N-716 were maintained. The Fourth Interval RI-ISI Program thus will continue under the methodology and process implemented at the end of the Third Interval support by the PRA methodology (Reference 7).

10CFR50.55a RELIEF REQUEST ISIR-4-01
Revision 0
(Page 4 of 6)

Based on the implementation period of the CNP RI-ISI Program and the Program Update requirements of Reference 1, reevaluations following this process will be conducted each Inspection Period during the Fourth ISI Interval. These dates are established per ASME Section XI Paragraph IWA-2430 and are documented in Table 1-1 of the CNP Fourth Interval ISI Program Plan. This process will maintain a technically sound and living RI-ISI Program throughout the inspection interval.

5.0 PROPOSED ALTERNATIVE AND BASIS FOR USE:

The proposed alternative implemented in the initial Risk-Informed Inservice Inspection Program at Cook Nuclear Plant (Reference 5) provides an acceptable level of quality and safety as required by 10CFR50.55a(a)(3)(i). This program is currently approved for the CNP Third Inspection Interval as documented in Reference 6.

As the RI-ISI Program was recently approved and implemented less than two years ago, CNP requests that the Fourth Inspection Interval RI-ISI Program be a continuation of the current application. No changes to the evaluation methodology or conclusions currently implemented under Reference 1 are made as part of this interval update. Rankings, prorations, and distributions were reviewed and confirmed to meet the requirements of the Reference 1 program. No major changes were required that would impact the determination of the program's acceptability relative to Reference 3 and 4 criteria.

The CNP RI-ISI Program, as developed in accordance with ASME Code Case N-716 (Reference 1), requires a minimum 10% of the elements that are categorized as High Safety Significant (HSS) be selected for inspection. The element selections applicable to the beginning of the Fourth Inspection Interval have net HSS examinations of 112 (10.4%) for Unit 1 and 110 (10.0%) for Unit 2. The current program delta CDF of -6.22E-08 and -6.95E-08 for Units 1 and 2 respectively, as well as the delta LERF numbers of -6.22E-09 and -6.95E-09, continue to meet the criteria for acceptable change in risk per References 3 and 4.

The PRA model quality was recently validated by an independent focused-scope PRA peer review performed in 2009 by Westinghouse to determine compliance with Addendum B of the ASME PRA Standard and RG 1.200 R1. This Peer Review was conducted following more recent NEI Peer Review guidance [10]. The scope of this review included the CNP Internal Flooding Analysis, portions of the HRA related to revised operator actions for mitigation of Steam Generator Tube Rupture (SGTR) sequences, recent data collection updates, Common Cause Failure methodology and implementation, and the Systems Analysis (SY) and Accident Sequence Analysis (AS) elements update due to the addition of the supplemental diesel generators.

10CFR50.55a RELIEF REQUEST ISIR-4-01
Revision 0
(Page 5 of 6)

The CNP PRA model maintenance and update processes and technical capability evaluations described in prior submittals continue to provide a robust basis for concluding that the CNP PRA is suitable for use in risk-informed licensing actions. As specific risk-informed PRA applications are performed, the remaining gaps pertaining to LERF-specific requirements in the PRA standard will be reviewed to determine which, if any, merit application-specific sensitivity studies in the presentation of the application results.

In addition to this risk-informed evaluation, selection, and examination procedure, all ASME Section XI piping components, regardless of risk classification, will continue to receive Code required pressure testing as part of the current ASME Section XI program. VT-2 visual examinations are scheduled in accordance with the CNP system pressure testing program.

6.0 DURATION OF PROPOSED ALTERNATIVE:

Relief is requested for the Fourth Ten-Year Inspection Interval for Donald C. Cook Nuclear Plant, Units 1 and 2.

7.0 PRECEDENTS:

Similar relief requests have been approved for:

Grand Gulf Second Inspection Interval Relief Request GG-ISI-002 was authorized per SE dated September 21, 2007.

The NRC has also previously approved this relief request for the Third Interval Donald C. Cook Nuclear Plant RI-ISI Program per SE dated September 28, 2007.

8.0 REFERENCES:

1. ASME Code Case N-716, "Alternative Piping Classification and Examination Requirements, Section XI Division 1," dated April 19, 2006.
2. Electric Power Research Institute (EPRI) Topical Report (TR) 112657 Rev. B-A, "Revised Risk-Informed Inservice Inspection Evaluation Procedure", December 1999
3. Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions On Plant-Specific Changes to the Licensing Basis," November 2002.
4. Regulatory Guide 1.178, "An Approach for Plant-Specific Risk-Informed Decision Making for Inservice Inspection of Piping," dated September 2003.
5. Program Submittal from Joseph N. Jensen, Indiana Michigan Power Company, to the U.S. NRC, "Request for Approval or Risk-Informed Inservice Inspection Program for

10CFR50.55a RELIEF REQUEST ISIR-4-01
Revision 0
(Page 6 of 6)

Class 1 and 2 Piping ASME Code, Category B-F, B-J, C-F-1, and C-F-2 Piping Welds", AEP:NRC:6055-09, dated September 29, 2006.

6. Safety Evaluation letter from Travis L. Tate, NRC, to Mano K. Nazar, Indiana Michigan Power Company, "Donald C. Cook Nuclear Plant, Units 1 and 2 – Risk-Informed Safety-Based Inservice Inspection Program for Class 1 and 2 Piping Welds (TAC Nos. MD3137 and MD3138)," Accession Number ML072620553, dated September 28, 2007.
7. CNP PRA Model Capability for Use in RI-ISI Program Licensing Actions, PRA-Study-059, Revision 1, October 2009.

10CFR50.55a RELIEF REQUEST ISIR-4-02
Revision 0
(Page 1 of 5)

Request for Relief for Hardship Or Unusual Difficulty Without Compensating Increase In Level Of Quality And Safety for Portions of the SI Pressure Testing Boundary In Accordance with 10CFR50.55a(a)(3)(ii)

1.0 ASME CODE COMPONENTS AFFECTED:

Code Class:	1
Reference:	IWB-2500, Table IWB-2500-1
Examination Category:	B-P
Item Number:	B15.10
Description:	Class 1 Pressure Retaining Safety Injection System Piping
Component Number:	Class 1 Pressure Retaining Components

2.0 APPLICABLE CODE EDITION AND ADDENDA:

The Fourth Interval Inservice Inspection Program for Units 1 & 2 is based on the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, 2004 Edition, No Addenda.

3.0 APPLICABLE CODE REQUIREMENT:

Table IWB-2500-1, Examination Category B-P, Item Number B15.10, requires all Class 1 pressure retaining components be subject to a system leakage test with a VT-2 visual examination in accordance with Paragraph IWB-5220. This pressure test is to be conducted prior to plant startup following each reactor refueling outage. The pressure retaining boundary for the test conducted at or near the end of each inspection interval shall be extended to all Class 1 pressure retaining components per Paragraph IWB-5222(b).

4.0 REASON FOR REQUEST:

Pursuant to 10CFR50.55a(a)(3)(ii), relief is requested on the basis that compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

10CFR50.55a RELIEF REQUEST ISIR-4-02
Revision 0
(Page 2 of 5)

CNP's nominal reactor coolant pressure at 100 % rated power is approximately 2060 psig Unit 1 and 2210 psig Unit 2. The piping segments noted in Table 1, are separated by an inboard check valve from the Reactor Coolant System (RCS) and therefore, are not exposed to a pressure of 2060 psig Unit 1 and 2210 psig Unit 2. The piping for the safety injection system is pressurized to approximately 625 psig Unit 1 and approximately 615 psig Unit 2 during normal plant operating conditions from the up stream injection accumulators. The piping segments from the Residual Heat Removal (RHR) system to the inboard check valve are pressurized to approximately 600 psig during reactor start-up following the refueling outage.

Based on these considerations, the Indiana Michigan Power Company believes that compliance with the ASME Section XI Code requirements stated would result in hardship and unusual difficulty without a compensating increase in the level of quality and safety.

5.0 PROPOSED ALTERNATIVE AND BASIS FOR USE:

The piping segments found in Table 1 are visually examined (VT-2) during each refueling outage with the reactor coolant system at Nominal Operating Pressure and Nominal Operating Temperature (NOP/NOT) and the inboard isolation valves normally closed. This examination is conducted in accordance with ASME Code Section XI, Table IWB-2500-1 Examination Category B-P, Item Number B15.10. This test is part of the Class 1 system leakage test with the valves positioned in their normal alignment. This examination is proposed as an alternative to the ASME Code Section XI, Table IWB-2500-1 Examination Category B-P, Item Number B15.10.

The piping segments in Table 1 for the RHR are visually examined during plant start-up following each refueling outage with the RHR pumps taking suction from the RCS at less than approximately 435 psig. The safety injection lines listed in Table 1 are pressurized to approximately 625 psig Unit 1 and approximately 615 psig Unit 2 during normal plant operating conditions from the up stream injection accumulators. The safety injection accumulators have level and pressure alarms located in the control room for both units. If there was any indication of RCS leakage from these segments (level or pressure loss) it would be denoted by alarms located in the control room. CNP operating procedures set in motion multiple actions, including an operator to be dispatched to the location of the incident. Current Technical Specifications require verification of level and pressure of the accumulators by monitoring controls and logging the conditions at least once every 12 hours.

The piping segments noted in Table 1 contain stainless steel pipe, valves, and weld material. These items do not contain any alloy 600/82/182 materials. CNP currently has no known degradation mechanisms taking place in these piping segments.

10CFR50.55a RELIEF REQUEST ISIR-4-02
Revision 0
(Page 3 of 5)

The piping segments that continue beyond the last check valve to the RCS loops are also constructed of the same material and specifications. These Class 1 segments are exposed to the RCS pressure and are VT-2 examined during the system leakage test conducted at the end of each refueling outage (NOP/NOT).

6.0 DURATION OF PROPOSED ALTERNATIVE:

Relief is requested for the Fourth Ten-Year Inspection Interval for Donald C. Cook Nuclear Plant, Units 1 and 2.

7.0 PRECEDENTS:

Similar relief requests have been approved for:

Surry Power Station, Units 1 and 2, Fourth Inspection Interval Relief Requests SPT-004 and SPT-005 dated November 1, 2005.

Beaver Valley Power Station, Units 1 and 2, Third and Second Inspection Intervals respectively, Relief Request BV3-PT-2, dated July 18, 2007.

As stated in the correspondences listed above, the NRC staff concluded that pressurizing the noted piping segments in accordance with the ASME Code requirements would require significant plant modifications and would subject the licensee to an undue burden with no compensating increase in quality or safety.

10CFR50.55a RELIEF REQUEST ISIR-4-02
Revision 0
(Page 4 of 5)

Table 1 – Piping Segments in Request for Relief

Pipe Segment Description	NPS Diameter (in.)	Segment Length	Design Pressure	Piping Material
Valves 1/2-IMO-315 to 1/2-SI-158-L1/L4 Hot Leg Injection	8" to 6"	Unit 1 - 50.6' L1 Unit 1 - 67.3' L4 Unit 2 - 55.1' L1 Unit 2 - 64.6' L4	2485 psig	SA-376 Grade TP 316 Seamless Austenitic Steel Sch. 140
Valves 1/2-SI-161-L1/L4 to ECCS Cold Leg Injection	6"	Unit 1 - 2.8' L1 Unit 1 - 3.1' L4 Unit 2 - 30.6' L1 Unit 2 - 4.9' L4	2485 psig	SA-376 Grade TP 316 Seamless Austenitic Steel Sch. 140
Valves 1/2-SI-166-L1/L2/L3/L4 to 1/2-SI-170-L1/L2/L3/L4 Cold Legs	10"	Unit 1 - 48.2' L1 Unit 1 - 47.8' L2 Unit 1 - 41.4' L3 Unit 1 - 46.7' L4 Unit 2 - 48.0' L1 Unit 2 - 52.9' L2 Unit 2 - 48.5' L3 Unit 2 - 48.5' L4	2485 psig	SA-376 Grade TP 316 Seamless Austenitic Steel Sch. 140
Valves 1/2-SI-238-L1/L2/L3/L4, 1/2-SI-167-L1/L2/L3/L4 to Accumulator Discharge Line	3/4"	Unit 1 - 4.0' L1 Unit 1 - 2.3' L2 Unit 1 - 5.2' L3 Unit 1 - 10.8' L4 Unit 2 - 3.6' L1 Unit 2 - 8.0' L2 Unit 2 - 9.2' L3 Unit 2 - 8.3' L4	2485 psig	SA-376 Grade TP 316 Seamless Austenitic Steel Sch. 140

10CFR50.55a RELIEF REQUEST ISIR-4-02
Revision 0
(Page 5 of 5)

Pipe Segment Description	NPS Diameter (in.)	Segment Length	Design Pressure	Piping Material
Valves 1/2-SI-161-L2/L3 to ECCS Cold Leg Injection	6"	Unit 1 - 2.1' L2 Unit 1 - 3.0' L3 Unit 2 - 27.3' L2 Unit 2 - 31.1' L3	2485 psig	SA-376 Grade TP 316 Seamless Austenitic Steel Sch. 140
Valve 1/2-RH-134 to ECCS Cold Leg Injection L3	8"	Unit 1 - 5.2' L3 Unit 2 - 5.6' L3	2485 psig	SA-376 Grade TP 316 Seamless Austenitic Steel Sch. 140
Valve 1/2-RH-133 to ECCS Cold Leg Injection L2	8"	Unit 1 - 6.9' L2 Unit 2 - 7.1' L2	2485 psig	SA-376 Grade TP 316 Seamless Austenitic Steel Sch. 140
Valve 1/2-IMO-325 to 1/2-SI-158-L2/L3 Hot Leg Injection	8" to 6"	Unit 1 - 71.5' L2 Unit 1 - 52.3' L3 Unit 2 - 61.1' L2 Unit 2 - 42.4' L3	2485 psig	SA-376 Grade TP 316 Seamless Austenitic Steel Sch. 140

*L1 is Loop 1 of RCS, L2 is Loop 2 of RCS, L3 is Loop 3 of RCS, L4 is Loop 4 of RCS

10CFR50.55a RELIEF REQUEST ISIR-4-03
Revision 0
(Page 1 of 4)

Request for Relief for Hardship Or Unusual Difficulty Without Compensating Increase In Level Of Quality And Safety for Portions of the RHR Pressure Testing Boundary In Accordance with 10CFR50.55a(a)(3)(ii)

1.0 ASME CODE COMPONENTS AFFECTED:

Code Class:	1
Reference:	IWB-2500, Table IWB-2500-1
Examination Category:	B-P
Item Number:	B15.10
Description:	Class 1 Pressure Retaining Residual Heat Removal Suction Piping Between Isolation Valves 1/2-IMO-128 and 1/2-ICM-129.
Component Number:	Class 1 Pressure Retaining Components

2.0 APPLICABLE CODE EDITION AND ADDENDA:

The Fourth Interval Inservice Inspection Program for Units 1 & 2 is based on the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, 2004 Edition, No Addenda.

3.0 APPLICABLE CODE REQUIREMENT:

Table IWB-2500-1, Examination Category B-P, Item Number B15.10, requires all Class 1 pressure retaining components be subject to a system leakage test with a VT-2 visual examination in accordance with Paragraph IWB-5220. This pressure test is to be conducted prior to plant startup following each reactor refueling outage. The pressure retaining boundary for the test conducted at or near the end of each inspection interval shall be extended to all Class 1 pressure retaining components per Paragraph IWB-5222(b).

4.0 REASON FOR REQUEST:

Pursuant to 10CFR50.55a(a)(3)(ii), relief is requested on the basis that compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

10CFR50.55a RELIEF REQUEST ISIR-4-03
Revision 0
(Page 2 of 4)

The primary function of the Residual Heat Removal (RHR) System is to remove decay heat energy from the reactor core to the Component Cooling Water (CCW) System via the RHR heat exchangers during the second phase of plant cool down during shutdown and refueling operations. It is designed to only perform this function once the Reactor Cooling System (RCS) temperature and pressure is reduced to below the RHR design limits.

CNP's normal reactor coolant pressure at 100 % rated power is approximately 2060 psig Unit 1 and 2210 psig Unit 2. The Class 1 RCS pressure boundary extends to the second isolation valve (ICM-129) downstream from the RCS. The section of piping between the two isolation valves noted in Table 1 above has the same design pressure as the RCS. However, this piping which is isolated from the RCS by two motor operated valves in series and the remainder of the RHR suction line, are not exposed to pressure of 2060 psig Unit 1 and 2210 psig Unit 2. Both valves have interlock set-points that require RCS pressure to be below 424.5 psig prior to the valves being opened.

On the other hand, as the RCS pressure and temperature increases to nominal operating pressure and temperature (2060 psig Unit 1 and 2210 psig Unit 2), the two motor operated valves are closed in accordance with plant procedures when the RCS pressure exceeds 506.25 psig. Therefore, the RCS pressure and temperature at 100 % rated power is isolated from the piping segments between these valves.

CNP design configuration of the RCS meets the requirements of double valve isolation defined in 10CFR50.55a(c)(2)(ii), but cannot satisfy the code requirements of ASME Code, Section XI, 2004 Edition, Paragraph IWB-5221(a). Opening the RCS inlet isolation valve contradicts the philosophy of 10CFR50.55a(c)(2)(ii) between the Class 1 and Class 2 boundaries of the RHR system.

Based on these considerations, the Indiana Michigan Power Company believes that compliance with the ASME Section XI Code requirements stated would result in hardship and unusual difficulty without a compensating increase in the level of quality and safety.

5.0 PROPOSED ALTERNATIVE AND BASIS FOR USE:

The piping segments listed in Table 1 are visually examined (VT-2) during each refueling outage during normal Class 1 walkdowns, Nominal Operating Pressure and Nominal Operating Temperature (NOP/NOT). This examination is conducted in accordance with ASME Code Section XI, Table IWB-2500-1, Examination Category B-P, Item Number B15.10. This test is part of the Class 1 system leakage test with the valves positioned in their normal alignment (ie. both valves closed).

10CFR50.55a RELIEF REQUEST ISIR-4-03
Revision 0
(Page 3 of 4)

Additionally, it is proposed that the pipe segment between IMO-128 and ICM-129 be visually examined (VT-2) as part of the Class 2 system pressure test performed once every inspection period according to ASME Code Section XI, Table IWC-2500-1, Examination Category C-H, Item Number C7.10.

If through-wall leakage were to occur in these piping segments, the proposed alternative examinations would identify any leakage.

The piping segments noted in Table 1 contain stainless steel pipe, valves, and weld material. These items do not contain any alloy 600/82/182 materials. CNP currently has no known degradation mechanisms taking place in these piping segments.

The piping downstream of the RCS up to the inlet valves are constructed of the same material specifications as the segment of piping listed in Table 1. These Class 1 segments are exposed to the RCS pressure and are VT-2 examined during the system leakage test conducted at the end of each refueling outage during NOP/NOT.

6.0 DURATION OF PROPOSED ALTERNATIVE:

Relief is requested for the Fourth Ten-Year Inspection Interval for Donald C. Cook Nuclear Plant, Units 1 and 2.

7.0 PRECEDENTS:

Similar relief requests have been approved for:

- Surry Power Station, Units 1 and 2, Fourth Inspection Interval Relief Requests SPT-005 and SPT-006, dated November 1, 2005.
- Beaver Valley Power Station, Units 1 and 2, Third and Second Inspection Intervals respectively, Relief Request BV3-PT-3, dated August 17, 2007.

As stated in the correspondences listed above, the NRC staff concluded that pressurizing the noted piping segments in accordance with the ASME Code requirements would require significant plant modifications and would subject the licensee to an undue burden with no compensating increase in quality or safety.

10CFR50.55a RELIEF REQUEST ISIR-4-03
Revision 0
(Page 4 of 4)

Table 1 – Piping Segments in Request for Relief

Pipe Segment Description	NPS Diameter (in.)	Segment Length	Design Pressure	Piping Material
Valve 1/2-IMO-128 to 1/2-ICM-129 Hot Leg for Cooldown	14"	Unit 1 - 70.6' Unit 2 - 59.3'	2485 psig	SA-376 Grade TP 316 Seamless Austenitic Steel Sch. 140

10CFR50.55a RELIEF REQUEST ISIR-4-04
Revision 0
(Page 1 of 4)

Request for Relief for Hardship Or Unusual Difficulty Without Compensating Increase In Level Of Quality And Safety for the Class 1 Pressure Testing Boundary In Accordance with 10CFR50.55a(a)(3)(ii)

1.0 ASME CODE COMPONENTS AFFECTED:

Code Class:	1
Reference:	IWB-2500, Table IWB-2500-1
Examination Category:	B-P
Item Number:	B15.10
Description:	Pressurization between Class 1 First and Second Isolation Valves on Small Bore Vent, Drain, and Instrument Connection Piping during Interval Pressure Test
Component Number:	Isolated Small Bore Components

2.0 APPLICABLE CODE EDITION AND ADDENDA:

The Fourth Interval Inservice Inspection Program for Units 1 & 2 is based on the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, 2004 Edition, No Addenda.

3.0 APPLICABLE CODE REQUIREMENT:

Table IWB-2500-1, Examination Category B-P, Item Number B15.10, requires all Class 1 pressure retaining components be subject to a system leakage test with a VT-2 visual examination in accordance with Paragraph IWB-5220. This pressure test is to be conducted prior to plant startup following each reactor refueling outage. The pressure retaining boundary for the test conducted at or near the end of each inspection interval shall be extended to all Class 1 pressure retaining components per Paragraph IWB-5222(b).

4.0 REASON FOR REQUEST:

Pursuant to 10CFR50.55a(a)(3)(ii), relief is requested on the basis that compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

CNP's nominal reactor coolant pressure at 100 % rated power is approximately 2060 psig Unit 1 and 2210 psig Unit 2. The vent, drain, and instrument connections within the Class 1 boundary consist of pipe segments that contain either two manually operated

10CFR50.55a RELIEF REQUEST ISIR-4-04
Revision 0
(Page 2 of 4)

valves in series or a manually operated valve and an end cap or blank flange that provides the design requirement for double isolation. The isolation valves on these vent and drain lines are generally in close proximity to the process pipe and there is minimum distance between the first and second valves. During normal plant operation, each pipe segment's isolation valves are maintained in the closed or locked closed position, and the piping downstream of the first isolation valve is not normally pressurized.

While in Mode 3 during plant start-up, the system leakage test is performed with the Reactor Coolant System (RCS) at full pressure, approximately 2060 psig Unit 1 and 2210 psig Unit 2, and normal operating temperature greater than 500°F. Testing the small diameter Class 1 vent, drain, and instrument connections would require an operator to change valve positions with the RCS at Nominal Operating Pressure and Nominal Operating Temperature (NOP/NOT). These valve manipulations would need to be performed under elevated containment air temperature and humid conditions.

Furthermore, due to the location of many of these valves, it would be necessary to erect scaffolding for this evolution. The expected dose for performing these activities is estimated to be between 400 mrem and 700 mrem for Unit 1 and between 450 mrem and 800 mrem for Unit 2. Finally, in Mode 3 during plant start-up (NOP/NOT), the system leakage test is conducted as a critical path evolution. The valve manipulations necessary to pressurize the isolated portions of the vent, drain, and instrument connections, and then to return them to normal position would directly impact the start-up activity sequence and outage duration.

Based on these considerations, the Indiana Michigan Power Company believes that compliance with the ASME Section XI Code requirements stated would result in hardship and unusual difficulty without a compensating increase in the level of quality and safety.

5.0 PROPOSED ALTERNATIVE AND BASIS FOR USE:

The small diameter vent, drain, and instrument connections, 1 inch and less as well as four 2 inch RCS drain lines (see Table 1), will be visually examined (VT-2) at the end of each refueling outage with the isolation valves in their normal closed position and the system at the Nominal Operating Pressure and Nominal Operating Temperature (NOP/NOT) for the system leakage test. This examination is conducted in accordance with ASME Code Section XI, Table IWB-2500-1 Examination Category B-P, Item Number B15.10.

The non-isolable portion of the RCS will be pressurized and visually examined as required. The isolated portion of the small diameter vent, drain, and instrument connections will be visually examined in the same configuration as during normal

10CFR50.55a RELIEF REQUEST ISIR-4-04
Revision 0
(Page 3 of 4)

operation. The examination is part of the Class 1 system leakage test with the valves positioned in their normal alignment.

In addition, during normal operation, the RCS will be monitored for leakage in accordance with the requirements of the applicable Technical Specifications. Corrective actions for any identified leakage under this monitoring will be in accordance with the Technical Specification.

6.0 DURATION OF PROPOSED ALTERNATIVE:

Relief is requested for the Fourth Ten-Year Inspection Interval for Donald C. Cook Nuclear Plant, Units 1 and 2.

7.0 PRECEDENTS:

Similar relief requests have been approved for:

Beaver Valley Power Station, Units 1 and 2, Third and Second Intervals, Relief Request BV3-PT-1 dated August 3, 2007.

Cooper Nuclear Station Fourth Inspection Interval Relief Request PR-11 was authorized per SER dated October 2, 2006.

Fitzpatrick Nuclear Power Plant Third Inspection Interval Relief Request was authorized per SER dated November 1, 2005.

As stated in the correspondences listed above, the NRC staff concluded that the requirement to pressurize the downstream portions of small diameter vent, drain, and instrument piping is a hardship without a compensating increase in the level of quality or safety.

10CFR50.55a RELIEF REQUEST ISIR-4-04
Revision 0
(Page 4 of 4)

Table 1 – Unit 1 and 2 Segments

Segments	Description	Function	Inboard Valve Normally Closed?
1	SI-169-Loop 1 on 1" Vent line with end cap	Safety Injection Vent	Yes
2	SI-169-Loop 4 on 1" Vent line with end cap	Safety Injection Vent	Yes
3	SI-157-Loop 4 on 1" Vent line with end cap	Safety Injection Vent	Yes
4	SI-157-Loop 1 on 1" Vent line with end cap	Safety Injection Vent	Yes
5	SI-156-East on 1" Drain line with end cap	Safety Injection Drain	Yes
6	SI-169-Loop 3 on 1" Vent line with end cap	Safety Injection Vent	Yes
7	SI-169-Loop 2 on 1" Vent line with end cap	Safety Injection Vent	Yes
8	SI-157-Loop 2 on 1" Vent line with end cap	Safety Injection Vent	Yes
9	SI-157-Loop 3 on 1" Vent line with end cap	Safety Injection Vent	Yes
10	SI-156-West on 1" Drain line with end cap	Safety Injection Drain	Yes
11	RH-136 on 3/4" Drain line with 3/4" test connection	Residual head Removal Drain	Yes
12	SI-167-1 on 3/4" Drain line with end cap	Safety Injection Accumulator Vent	Yes
13	SI-167-2 on 3/4" Drain line with end cap	Safety Injection Accumulator Vent	Yes
14	SI-167-3 on 3/4" Drain line with end cap	Safety Injection Accumulator Vent	Yes
15	SI-167-4 on 3/4" Drain line with end cap	Safety Injection Accumulator Vent	Yes
16	RC-131 on 3/4" Vent line	Pressurizer Vent to Atmosphere	Yes
17	RC-163 on 3/4" Instrumentation line	Mid-loop Monitoring System	Yes
18	NLI-112-V1 RCS Level Indicator Trasmitter	Half-Loop Operation Transmitter	Yes
19	RC-144-L3 Level Gauge Glass NGG-100	Half-Loop Operation Transmitter	Yes
20	RC-113 Loop 1, 2" Drain Line	Cold Leg Drain Line to Reactor Coolant Drain Tank	Yes
21	RC-113 Loop 2, 2" Drain Line	Cold Leg Drain Line to Reactor Coolant Drain Tank	Yes
22	RC-113 Loop 3, 2" Drain Line	Cold Leg Drain Line to Reactor Coolant Drain Tank	Yes
23	RC-113 Loop 4, 2" Drain Line	Cold Leg Drain Line to Reactor Coolant Drain Tank	Yes

SECTION 6.0

SYSTEM PRESSURE TESTING

6.1 Introduction

This section summarizes the requirements for pressure testing ISI Class 1, 2, and 3 systems for CNP Units 1 and 2 for the Fourth ISI Interval. Classification of systems at CNP is discussed in Section 1.3 of this document. System Pressure Testing is required by ASME Section XI, Articles IWA-5000, IWB-5000, IWC-5000, and IWD-5000 of the 2004 Edition, No Addenda for the Fourth ISI Interval. There are three basic groups of pressure tests required to be implemented. These include Periodic, Interval (ten-year), and Repair/Replacement pressure tests. Table 1-1 of this ISI Program Plan provides the CNP Period start and end dates, as well as the Interval start and end dates, for both Units 1 and 2.

Pressure tests typically are performed during normal plant operation, in conjunction with system leakage testing, while the system is inservice, or by hydrostatic pressure tests (external pressurization source). The use of hydrostatic tests will be used only when a system/component cannot be tested during normal operation or a system leakage test.

During the pressure test, examination is performed to identify relevant conditions that may be indicative of pressure boundary leakage. There are several methods used to verify the leak tight integrity of a system. These include VT-2 visual examinations by certified examiners, bubble testing, pressure drop, and flow verification.

6.2 Requirements

6.2.1 Regulatory Requirements

The requirement for commercial nuclear power plants to implement a pressure test program is mandated by law through 10CFR50.55a. 10CFR50.55a(g)(4) requires the implementation of the latest edition/addenda of ASME Section XI endorsed in 10CFR50.55a(b). See Sections 1.2 and 1.5 of this ISI Program Plan for further information on 10CFR and Section XI applicability.

When Section XI requirements are impractical or result in undue hardship, Request for Relief may be submitted to the NRC for approval of alternative requirements. Section 5.0 of this document provides the process for relief request preparation and any specific relief requests applicable to system pressure testing.

Other alternatives may be utilized through approved ASME Code Cases. The Code Case approval and use processes are outlined in Section 4.0. This section also contains a list of the specific Code Cases adopted by CNP for the Fourth Interval including any applicable to system pressure testing.

There may also be other cases where the regulator imposes additional requirements on licensees (e.g., generic letters, NUREGs, bulletins, plant FSAR, etc.). Commitments may result from these based on regulatory correspondence, management requirements, or other documented correspondence. Requirements outside of the jurisdiction of ASME Section XI are referred to as Augmented Inspections and discussed in Section 1.4 of this ISI Program Plan.

Finally, when the requirements applicable to a specific test are unclear, incomplete, or subject to some interpretations, CNP may opt to write a Technical Position to document the implementation approach. Technical Positions are included in Section 1.7 of this document.

6.2.2 General Requirements

Pressure tests are performed to verify the leak tight integrity of systems and components. The VT-2 visual examination is used where systems contain fluid to verify pressure boundary integrity (no thru wall flaws). The VT-2 visual examination is also used to detect evidence of leakage at mechanical connections. The medium normally contained in the system generally serves as the pressurizing medium.

Whenever practical, pressure test requirements shall be satisfied by operating conditions that do not require operations personnel to perform special lineups or train switching. For some systems, the pressure test may require operation of a pump (pump surveillance test) and/or special valve lineups. Pressure tests that require the operation of a pump or special valve lineup should be scheduled to coincide with normal surveillance tests where practical.

6.2.3 Code Requirements

ASME Section XI requires certain pressure test conditions before performing a VT-2 visual examination. Pressurization Hold Times are required after attaining test pressure for a given period of time prior to starting the VT-2 examination (IWA-5213). The boundaries subject to test pressurization are defined in IWA-5221. Pressure and temperature limits are specified by IWA-5212.

During the test, inspection requirements are provided in IWA-5240 relative to the visual examination, areas to be examined, and how insulation impacts the examination. After the examination is complete, IWB-3522 provides acceptance standards for VT-2 examination, and IWA-5250 contains some additional Corrective Actions in addition to those addressed in IWB-3142.

6.3 ASME Section XI Code

6.3.1 Article IWA-5000 provides the general requirements for performing ASME Section XI required pressure tests. Pressure retaining components within each Class 1, 2, and 3 system boundary shall be subject to system pressure tests under which conditions a VT-2 visual examination is performed to detect leakage.

Most tests are performed as a System Leakage Test conducted while the system is in operation, during a system operability test, or while the system is at test conditions using an external pressurization source.

Buried components of Class 1, 2, and 3 systems require an unimpaired flow test per IWA-5244.

Bolted Connection examination requirements are provided in IWA-5242(a) and IWA-5250(a)(2). For systems borated for the purpose of controlling reactivity, insulation shall be removed from pressure retaining bolted connections prior to performing the VT-2 visual examination. Connections in these systems with bolting materials having ≥10% Chromium content are exempt from the requirement to remove insulation.

6.3.2 Article IWB-5000 provides the pressure test requirements for ISI Class 1 Systems and Components. Specifically, pressure retaining components shall be tested at the frequency stated and visually examined by the method specified in Table IWB-2500-1, Examination Category B-P.

System Leakage Tests, Paragraph IWA-5211(a) shall be conducted in accordance with Paragraphs IWB-5220. The pressure retaining boundary during the *Outage* system leakage test shall correspond to the reactor coolant system boundary, with all valves in the normal position, which is required for normal reactor startup. The VT-2 visual examination shall, however, extend to and include the second closed valve at the boundary extremity. The pressure retaining boundary during the *Interval* system leakage test shall extend to all ISI Class 1 pressure retaining components within the system boundary except as described in ISIR-4-02, -03 and -04.

6.3.3 Article IWC-5000 provides the pressure test requirements for ISI Class 2 Systems and Components. Specifically, pressure retaining components within each system boundary shall be subjected to system pressure tests and visually examined by the method specified in Table IWC-2500-1, Examination Category C-H.

System Leakage Tests, Paragraph IWA-5211(a) shall be conducted in accordance with Paragraph IWC-5220. The pressure retaining boundary during the system leakage test includes all portions of the system required to operate or support the safety function up to and including the first normally closed valve (including a safety and relief valve) or valve capable of automatic closure when the safety function is required. Items outside these boundaries, and open ended discharge

piping, are excluded from the examination requirements. The pressure and visual examination boundaries should typically correspond to the Class 2 system extremities.

6.3.4 Article IWD-5000 provides the pressure test requirements for ISI Class 3 Systems and Components. Specifically, pressure retaining components within each system boundary shall be subjected to pressure tests in accordance with Table IWD-2500-1, Examination Category D-B.

System Leakage Tests, Paragraph IWA-5211(a) shall be conducted in accordance with Paragraph IWD-5220. The pressure retaining boundary during the system leakage test includes all portions of the system required to operate or support the safety function up to and including the first normally closed valve (including a safety and relief valve) or valve capable of automatic closure when the safety function is required. Items outside these boundaries, and open ended discharge piping, are excluded from the examination requirements. The pressure and visual examination boundaries should typically correspond to the Class 3 system extremities.

6.4 Implementation

Pressure tests are scheduled based on the established CNP Operations Surveillance Planning Template. The Model Work Order Tasks corresponds to predefined examination areas and periodicities.

Each examination activity requires an associated VT-2 Visual Examination Data Record when performed.

The review and approval of completed test records by the ISI Coordinator and the ANII indicates the completion of an examination requirement.

6.5 Repair / Replacement Pressure Testing

6.5.1 The Repairs and Replacements of ASME Section XI components are administered under PMI-5075, "ASME Section XI Repair/Replacement Program".

6.5.2 For Class 1, 2, and 3 welded repairs or installation of replacements by welding, pressure testing is required by IWA-4540. Certain items or activities may be exempt from post repair/replacement pressure testing per IWA-4540(b).

6.5.3 Per the NRC limitation on the use of the 2004 Edition of Section XI specified in 10CFR50.55a(b)(2)(xxvi), the repair/replacement test provisions of IWA-4540(c) of the *1998 Edition* must be applied for pressure testing Class 1, 2, and 3 mechanical joints after the repair/replacement activity.

SECTION 7.0

SNUBBER EXAMINATION AND TESTING

7.1 Introduction

This section summarizes the requirements for examination and testing of safety related and ISI Class 1, 2, and 3 dynamic restraints (snubbers) for CNP Units 1 and 2 for the Fourth ISI Interval. The listing of snubbers in the program is in an approved specification as referenced by the CNP Snubber Examination and Testing Program procedure.

7.2 Requirements

Rules for implementation of a snubber testing program are mandated by 10CFR50.55a. The Snubber Examination and Testing Program is written to comply with the rules established by ASME Section XI, IWF-5000 and ASME OM Code, Subsection ISTD. The integral and non-integral attachments, are examined in accordance with Subsection IWF. Article IWF-5000 imposes ASME/ANSI OM-1987 with OMa-1988, Part 4 for inservice snubber visual examinations and functional stroke testing. However, Cook Nuclear Plant has committed to the 2004 Edition of ASME OM Code, Subsection ISTD, for visual examinations and functional testing as allowed by the Code of Federal Regulations, 10 CFR 50.55a.

7.3 Implementation

7.3.1 Visual Examinations

Visual examinations of snubbers are conducted during refueling outages and power operation depending on accessibility of snubbers. The VT-3 visual examination method and the examination personnel certifications shall be in accordance with ASME Section XI, 2004 Edition. The examinations include the integral and non-integral attachments of snubbers.

7.3.2 Functional Testing

Functional testing of snubbers shall be performed in accordance with the 10% Sampling Plan in accordance with ASME OM Code, ISTD Subsection, 2004 Edition. In-place and bench tests are utilized to perform functional tests. The functional tests are typically conducted during refueling outages.

7.3.3 Service Life Monitoring

Service life monitoring of snubbers shall be based on manufacturing recommendations and operational experience. The service life reviews are performed approximately every eighteen (18) months for safety related and ISI Class snubbers.

7.4 Code Relief Requests

No code relief requests have been identified for the Fourth Inservice Inspection Interval for the Snubber Examination and Testing Program.