UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-298

NEBRASKA PUBLIC POWER DISTRICT

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 88 to Operating License No. DPR-46, issued to the Nebraska Public Power District (the licensee), which revised Technical Specifications for operation of the Cooper Nuclear Station (the facility) located in Nemana County, Nebraska. The amendment is effective as of its date of issuance.

The amendment consists of Technical Specification changes to incorporate approved exemptions from certain requirements of 10 CFR Part 50 Appendix J regarding main steam isolation valve leak rate testing, main steam line and feedwater line bellows leak rate testing, and extension of the test interval for Type C leak rate testing for the Cooper Nuclear Station.

The applications for amendment comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment was

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not required since the amendment does not involve a significant hazards consideration.

The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of this amendment.

For further details with respect to this action, see (1) the requests for exemption dated September 10, 1975 and January 4, 1977, as supplemented by letter dated April 4, 1977, (2) Amendment No. 38 to License No. DPR-46, and (3) the Commission's concurrently issued Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C. and at the Auburn Public Library, 118 15th Street, Auburn, Nebraska 68305. A single copy of items (2) and (3) may be obtained upon request addressed to the United States Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 16th day of September, 1977.

FOR THE NUCLEAR REGULATORY COMMISSION

Don K. Davis, Acting Chief
Operating Reactors Branch #2
Division of Operating Reactors

PENETRATION NO. X-18

CHECKLIST of PACKAGE CONTENTS

#	Item	Initial By	Date
1.	Completed Design Basis Sheet	RES	5/20/94
2.	Sketch of Containment Barriers/Pathway	RES	5/20/94
3.	ISO # JELCO 2713-12 Rev. NO1 (as applicable) JELCO X-2713-222	RES	5/20/94
4.	P & ID Instrument/System Drawings (as applicable) 2028 Rev. N26	RES	5/20/94
5.	Walkdown Instruction and Acceptance Criteria	RES	5/20/94
6.	Drawings Verified to be Latest Version	KMG	5-21-94
7.	Other Contents: Iso Key 2028 Rev. N03 68-2211 30 Rev NO1 JELCO PT-2-B Rev. 5	RES	5/20/94

PENE. NO. X-18 CIV NO. RW-A094

DESIGN BASIS

VALVE FUNCTION: MO / **AO** / CV / MAN	LOCATION: AZ. / ELEV. - DRYWELL / **REA. BLDG** / TORUS 32° / 898' 9"	
DIV. SEPARATION: **CCP1A 120VAC Div I**	**PCIS SIGNAL:** **YES** / NO	GDC REQUIREMENTS: 1967 - **53 / 54 / 55** / 56 / **57** 1971 - **54** / 55 / **56** / 57
STANDARDS: **ANSI/ANS-52.1-1983** **ANSI/ANS-56.2-1984 Section 3.6.5, Fig 1** **ANSI/ANS-56.8-1987** **Note: Not classic valve configuration**		**USAR KEY SECTIONS:** **V Section .0, Tab. V-2-2, V-2-7** **VII Section 3.0 Tab. VII 3-1** **Note: shows testable check valve** ASME XI SAFETY CLASS: **I** / II / III / NA
APP. J-TYPE C TEST REQUIREMENTS & BASES: **FROM CONTAINMENT** / PARALLEL / REVERSE		COMMITMENTS: **Tech Spec Table 3.7.1**
NORMAL OPERATING POSITION: OPEN / **CLOSED** / NA	REFERENCES: **GE 22A1132AB, Rev. 0, Section 3.2.1, App. A** **-Classified as "B-1"** **Note: App. A shows normal ops open but B&R 2028 shows closed.**	
FAIL POSITION: OPEN / **CLOSED** / NA		
DBA POSITION: OPEN / **CLOSED** / NA	CHECK BY: _____ DATE _____ VERIFIED BY: _____ DATE _____	

PENE. NO. X-18 CIV NO. RW-A095

DESIGN BASIS

VALVE FUNCTION: MO / **AO** / CV / MAN	LOCATION: AZ. 32° / ELEV. 898' 9" - DRYWELL / **REA. BLDG** / TORUS	
DIV. SEPARATION: **CCP1B 120VAC Div II**	**PCIS SIGNAL:** **YES** / NO	GDC REQUIREMENTS: 1967 - **53 / 54 / 55** / 56 / **57** 1971 - **54** / 55 / **56** / 57
STANDARDS: **ANSI/ANS-52.1-1983** **ANSI/ANS-56.2-1984 Section 3.6.5, Fig 1** **ANSI/ANS-56.8-1987** **Note: Not classic valve configuration**		**USAR KEY SECTIONS:** **V Section 2.0, Tab. V-2-2, V-2-7** **VII Section 3.0 Tab. VII 3-1** **Note: shows testable check valve** ASME XI SAFETY CLASS: **I** / II / III / NA
APP. J-TYPE C TEST REQUIREMENTS & BASES: **FROM CONTAINMENT** / PARALLEL / REVERSE		COMMITMENTS: **Tech Spec Table 3.7.1**
NORMAL OPERATING POSITION: OPEN / **CLOSED** / NA	REFERENCES: **GE 22A1132AB, Rev. 0, Section 3.2.1, App. A** **-Classified as "B"** **Note: App. A shows normal ops open but B&R 2028 shows closed.**	
FAIL POSITION: OPEN / **CLOSED** / NA		
DBA POSITION: OPEN / **CLOSED** / NA	CHECK BY: _____ DATE _____ VERIFIED BY: _____ DATE _____	

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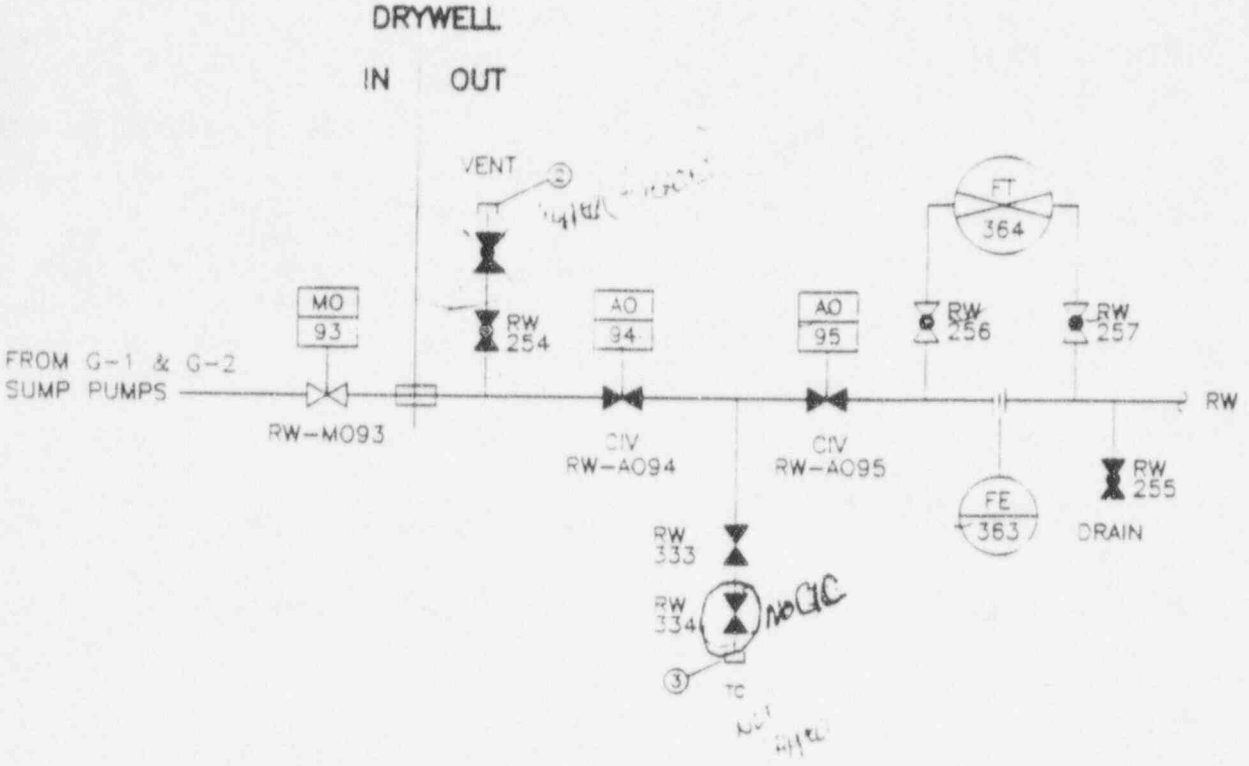
PENETRATION X-18
DRYWELL EQUIPMENT SUMP DISCHARGE
CONTAINMENT ISOLATION VALVES
RW-A094 & RW-A095



NOTE	DESCRIPTION
1	FOR MORE INFORMATION SEE BURNS & ROE #2028 & 4262 (TYPE 3)
2	VENT POINT
3	TEST CONNECTION

PENETRATION NO. X-30E

CHECKLIST of PACKAGE CONTENTS

#	Item	Initial By	Date
1.	Completed Design Basis Sheet	DLS	5-23-94
2.	Sketch of Containment Barriers/Pathway	DLS	5-23-94
3.	ISO # X2714-200 R4 (as applicable) X2507-201 RN01	DLS	5-23-94
4.	P & ID Instrument/System Drawings (as applicable) 2028 RN27	DLS	5-23-94
5.	Walkdown Instruction and Acceptance Criteria	DLS	5-23-94
6.	Drawings Verified to be Latest Version	FEV	5-23-94
7.	Other Contents: * IL-E-70-3 Sht. 24 (I.D. 18) R3 B&R 2028 R3	DLS	5-23-94.

~~* REV NO 3 NOT AVAILABLE IN THE DRAWING SYSTEM AT CNS.~~ FEV 5/23/94

PENE. NO. X-30E CIV NO. NBI-502

DESIGN BASIS

VALVE FUNCTION: MO / AO / CV / **MAN**	LOCATION: AZ. 268° / ELEV. 911' 6" - DRYWELL / **REA. BLDG** / TORUS	
DIV. SEPARATION: **N/A**	**PCIS SIGNAL:** YES / **NO**	**GDC REQUIREMENTS:** 1967 - **53 / 54 / 55** / 56 / 57 1971 - 54 / 55 / **56** / 57 Note: Manual exterior valve closed, not in compliance
STANDARDS: **ANSI/ANS-56.2-1984, Section 3.6.2, & 4.8** **Note: Isolation valves not needed but available manually**		USAR KEY SECTIONS: **V Section 2.0, Table V-2-2**
		ASME XI SAFETY CLASS: I / **II** / III / NA
APP. J-TYPE C TEST REQUIREMENTS & BASES: FROM CONTAINMENT / PARALLEL / REVERSE **Note: Not Type C testable.**		COMMITMENTS: **Tech Spec 3.7.A.3**
NORMAL OPERATING POSITION: OPEN / **CLOSED** / NA	REFERENCES: **Reg. Guide 1.11**	
FAIL POSITION: OPEN / **CLOSED** / NA		
DBA POSITION: OPEN / **CLOSED** / NA	CHECK BY: _____ DATE _____ VERIFIED BY: _____ DATE _____	

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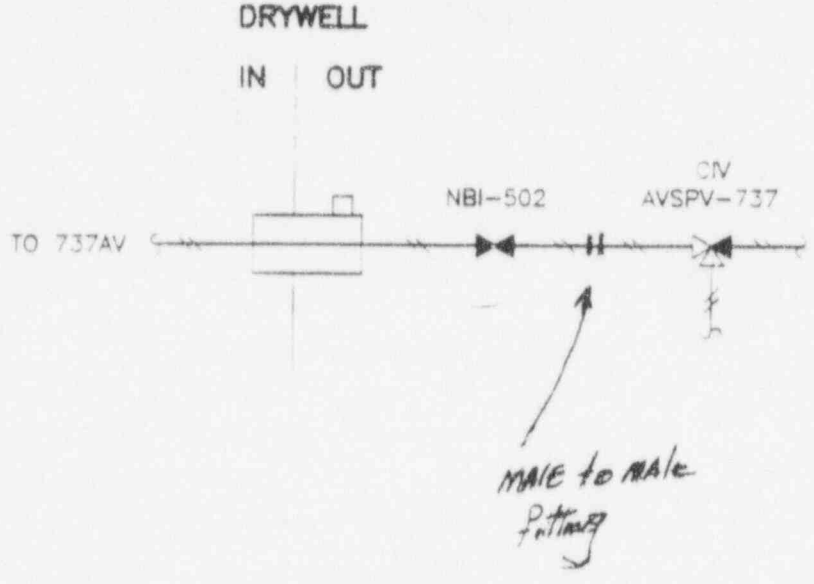
PENETRATION X-30E
AIR TO VESSEL FLANGE LEAK-OFF DETECTION AOV
CONTAINMENT ISOLATION VALVE
AVSPV-737



NOTE	DESCRIPTION
1	FOR MORE INFORMATION SEE BURNS & ROE #2028 & 4262 (TYPE 9)
	& IL-E-70-3 SHT 24
2	VENT POINT
3	TEST CONNECTION

PENETRATION NO. X-30F

CHECKLIST of PACKAGE CONTENTS

#	Item	Initial By	Date
1.	Completed Design Basis Sheet	JU	5-23-94
2.	Sketch of Containment Barriers/Pathway	JU	5-23-94
3.	ISO # _____ (as applicable) X2506-204 R1	JU	5-23-94
4.	P & ID Instrument/System Drawings (as applicable) 2028 RN27	JU	5-23-94
5.	Walkdown Instruction and Acceptance Criteria	JU	5-23-94
6.	Drawings Verified to be Latest Version	JU	5-23-94
7.	Other Contents: B & R 2028 RN03 * IE-E-70-3 Sht. 24 (I.D. 18) R3	JU	5-23-94

~~* R-3 not available in the Dwg. Cntl Ctr @ ENS @ this time~~ JU 5-23-94

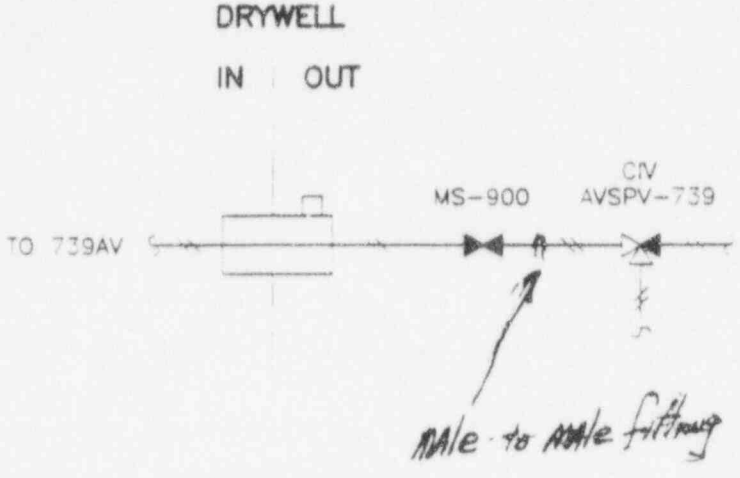
PENE. NO. X-30F CIV NO. MS-900

DESIGN BASIS

VALVE FUNCTION: MO / AO / CV / **MAN**	LOCATION: AZ. / ELEV. - DRYWELL / **REA. BLDG** / TORUS 268° / 911' 6"	
DIV. SEPARATION: **N/A**	**PCIS SIGNAL:** YES / **NO**	**GDC REQUIREMENTS:** 1967 - **53 / 54 / 55** / 56 / 57 1971 - 54 / 55 / **56** / 57 Note: Manual exterior valve closed, not in compliance
STANDARDS: **ANSI/ANS-56.2-1984, Section 3.6.2, & 4.8** **Note: Isolation valves not needed but available manually**		USAR KEY SECTIONS: **V Section 2.0, Table V-2-2** ASME XI SAFETY CLASS: I / **II** / III / NA
APP. J-TYPE C TEST REQUIREMENTS & BASES: FROM CONTAINMENT / PARALLEL / REVERSE **Note: Not Type C testable.**		COMMITMENTS: **Tech Spec 3.7.A.3**
NORMAL OPERATING POSITION: OPEN / **CLOSED** / NA	REFERENCES: **Reg. Guide 1.11**	
FAIL POSITION: OPEN / **CLOSED** / NA		
DBA POSITION: OPEN / **CLOSED** / NA	CHECK BY: _____ DATE _____ VERIFIED BY: _____ DATE _____	

Procedure No.	Rev.	Page

PENETRATION X-30F
AIR TO REACTOR VESSEL HEAD VENT
CONTAINMENT ISOLATION VALVE
ASPV-739



NOTE	DESCRIPTION
1	FOR MORE INFORMATION SEE BURNS & ROE #2028 & 4262 (TYPE 9)
	& IL-E-70-3 SHT 24
2	VENT POINT
3	TEST CONNECTION

PENETRATION NO. X-33E

CHECKLIST of PACKAGE CONTENTS

#	Item	Initial By	Date
1.	Completed Design Basis Sheet	RES	5/21/94
2.	Sketch of Containment Barriers/Pathway	RES	5/21/94
3.	ISO # JEC X-ISO-221 Rev. 1C1 (as applicable) JEC X-ZT14-200 Rev 4	RES	5/21/94
4.	P & ID Instrument/System Drawings (as applicable) 2028, 426, 426	RES	5/21/94
5.	Walkdown Instruction and Acceptance Criteria	RES	5/21/94
6.	Drawings Verified to be Latest Version	PGA	5/22/94
7.	Other Contents: Iso Key 2028 U03 IL-E-70-3 ID 14 Rev. No1	RES	5/21/94

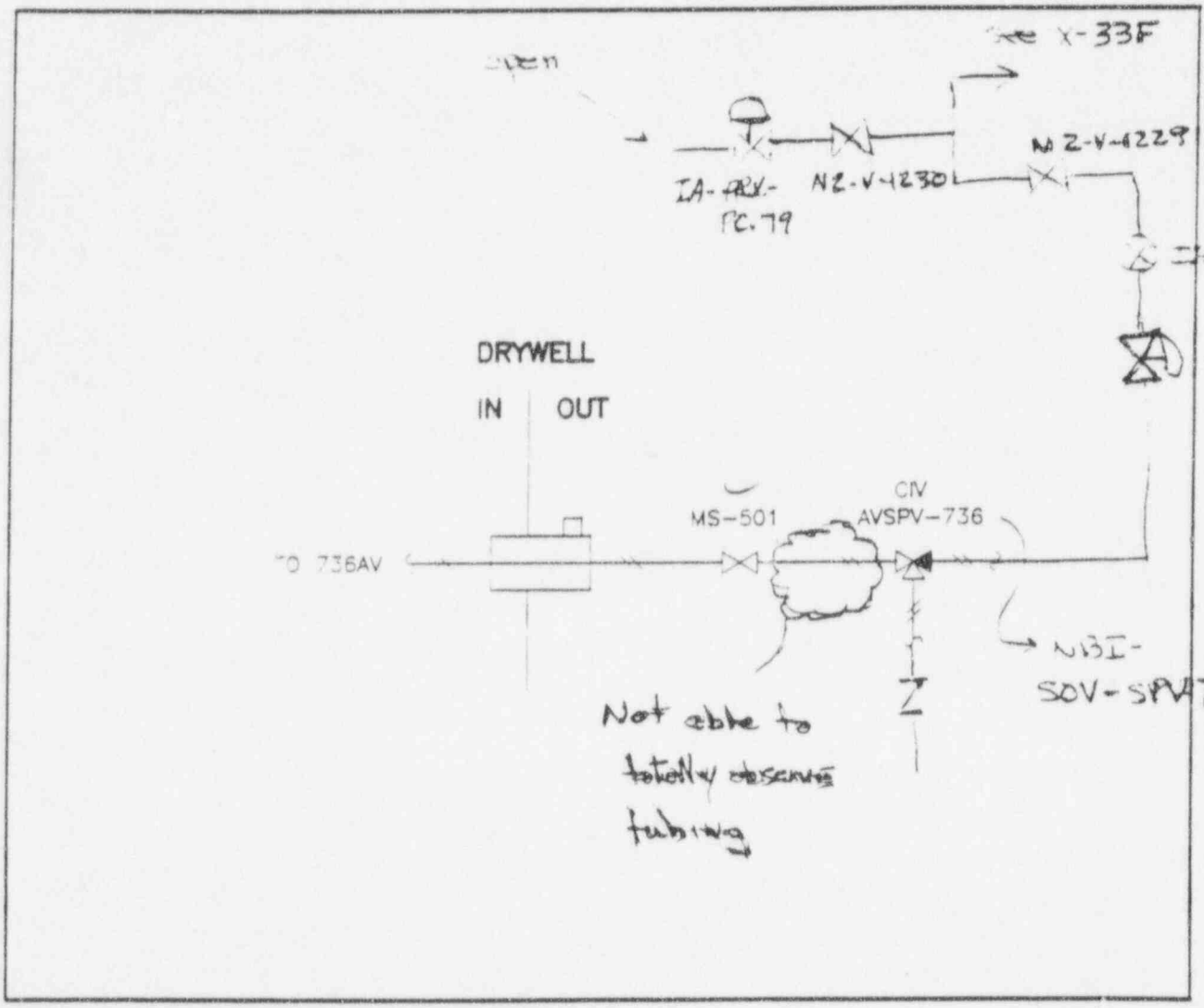
PENE. NO. X-33E CIV NO. MS-501

DESIGN BASIS

VALVE FUNCTION: MO / AO / CV / **MAN**	LOCATION: AZ. 55° ELEV. 898' 9"" - DRYWELL / **REA. BLDG** / TORUS	
DIV. SEPARATION: **N/A**	**PCIS SIGNAL:** YES / **NO**	**GDC REQUIREMENTS:** 1967 - **53 / 54 / 55** / 56 / 57 1971 - 54 / 55 / **56** / 57
STANDARDS: **ANSI/ANS-56.2-1984, Section 3.6.2, & 4.8** **Note: Isolation valves not needed but available manually**		USAR KEY SECTIONS: **V Section 2.0, Table V-2-2**
		ASME XI SAFETY CLASS: I / **II** / III / NA
APP. J-TYPE C TEST REQUIREMENTS & BASES: FROM CONTA[illegible]MENT / PARALLEL / REVERSE **Note: Not Type C testable.**		COMMITMENTS: **Tech Spec 3.7.A.3**
NORMAL OPERATING POSITION: **OPEN** / CLOSED / NA	REFERENCES: **Reg. Guide 1.11**	
FAIL POSITION: **OPEN** / CLOSED / NA		
DBA POSITION: **OPEN** / CLOSED / NA	CHECK BY: _____ DATE _____ VERIFIED BY: _____ DATE _____	

Procedure No.	Rev.	Page

PENETRATION X-33E
AIR TO VESSEL FLANGE LEAK-OFF DETECTION AOV
CONTAINMENT ISOLATION VALVE
AVSPV-736



NOTE	DESCRIPTION
1	FOR MORE INFORMATION SEE BURNS & ROE #2028 & 4262 (TYPE 9)
	& IL-E-70-3 SHT 20
2	VENT POINT
3	TEST CONNECTION

PENETRATION NO. X-33F

CHECKLIST of PACKAGE CONTENTS

#	Item	Initial By	Date
1.	Completed Design Basis Sheet	RES	5/21/94
2.	Sketch of Containment Barriers/Pathway	RES	5/21/94
3.	ISO # IELS 1-25C6-2C4 Rev No1 (as applicable) _____	RES	5/21/94
4.	P & ID Instrument/System Drawings (as applicable) 2028 Rev N26	RES	5/21/94
5.	Walkdown Instruction and Acceptance Criteria	RES	5/21/94
6.	Drawings Verified to be Latest Version	RES	5/23/94
7.	Other Contents: Iso Key 2028 Rev N03 IL-70-3 ID 14 Rev No1	RES	5/21/94

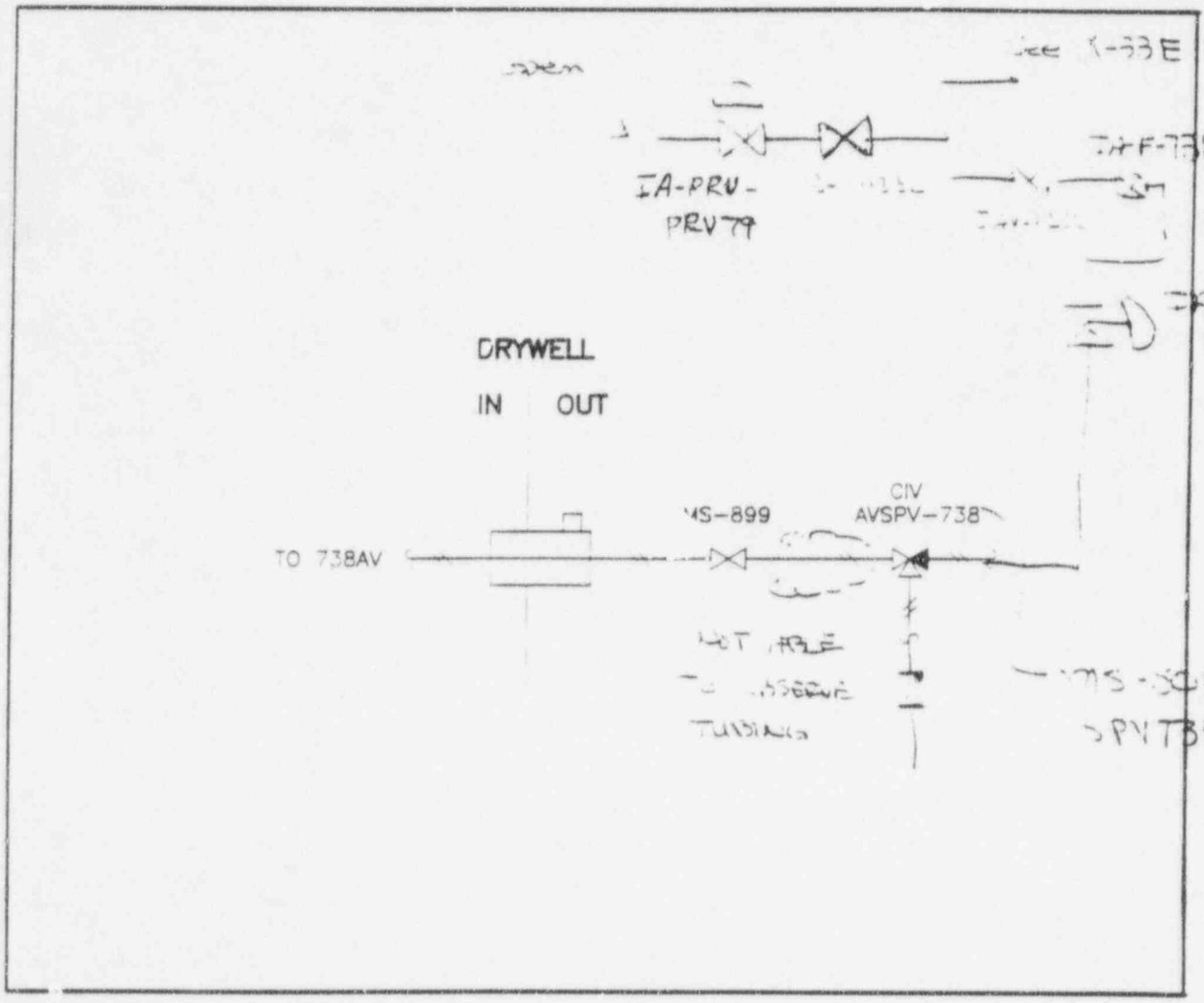
PENE. NO. X-33F CIV NO. MS-899

DESIGN BASIS

VALVE FUNCTION: MO / AO / CV / **MAN**	LOCATION: AZ. / ELEV. - DRYWELL / **REA. BLDG** / TORUS 55° / 898' 9""	
DIV. SEPARATION: **N/A**	**PCIS SIGNAL:** YES / **NO**	**GDC REQUIREMENTS:** 1967 - **53 / 54 / 55** / 56 / 57 1971 - 54 / 55 / **56** / 57
STANDARDS: **ANSI/ANS-56.2-1984, Section 3.6.2, & 4.8** **Note: Isolation valves not needed but available manually**		USAR KEY SECTIONS: **V Section 2.0, Table V-2-2** ASME XI SAFETY CLASS: I / **II** / III / NA
APP. J-TYPE C TEST REQUIREMENTS & BASES: FROM CONTAINMENT / PARALLEL / REVERSE **Note: Not Type C testable.**		COMMITMENTS: **Tech Spec 3.7.A.3**
NORMAL OPERATING POSITION: **OPEN** / CLOSED / NA	REFERENCES: **Reg. Guide 1.11**	
FAIL POSITION: **OPEN** / CLOSED / NA		
DBA POSITION: **OPEN** / CLOSED / NA	CHECK BY: _____ DATE _____ VERIFIED BY: _____ DATE _____	

Procedure No.	Rev.	Page

PENETRATION X-33F
AIR TO REACTOR VESSEL HEAD VENT
CONTAINMENT ISOLATION VALVE
AVSPV-738



NOTE	DESCRIPTION
1	FOR MORE INFORMATION SEE BURNS & ROE #2028 & 4262 (TYPE 9)
	& IL-E-70-3 SHT 20
2	VENT POINT
3	TEST CONNECTION

PENETRATION NO. X-45D

CHECKLIST of PACKAGE CONTENTS

#	Item	Initial By	Date
1.	Completed Design Basis Sheet	KDJ	5-24-94
2.	Sketch of Containment Barriers/Pathway	KDJ	5-24-94
3.	ISO # _____ (as applicable) _____	N/A	N/A
4.	P & ID Instrument/System Drawings (as applicable) 2028 Rev ~~N26~~ or N27	KDJ	5-24-94
5.	Walkdown Instruction and Acceptance Criteria	KDJ	5-24-94
6.	Drawings Verified to be Latest Version	KDJ	5-24-94
7.	Other Contents: ISO Key #2028 Rev. 3	KDJ	5-24-94

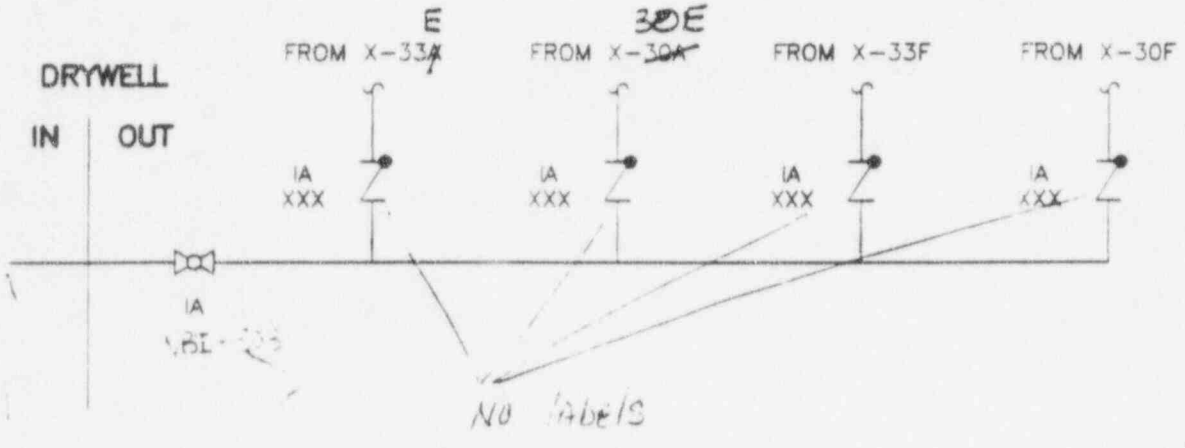
PENE. NO. X-45D CIV NO. UNKNOWN

DESIGN BASIS

VALVE FUNCTION: MO / AO / CV / MAN	LOCATION: AZ. / ELEV. - DRYWELL / REA. BLDG / TORUS 250° / 919' 1"	
DIV. SEPARATION: N/A	PCIS SIGNAL: YES / NO REV. FLOW	GDC REQUIREMENTS: 1967 - 53 / 54 / 55 / 56 / 57 1971 - 54 / 55 / 56 / 57
STANDARDS: 56.2, Not in compliance, need solenoids. 56.8 - 1987		USAR KEY SECTIONS: V 5A 2.0, Tab. V-2-2
		ASME XI SAFETY CLASS: I / II / III / NA UNKNOWN/ NOT SHOWN
APP. J-TYPE C TEST REQUIREMENTS & BASES: FROM CONTAINMENT / PARALLEL / REVERSE Note: Not in LLRT Program but should be.		COMMITMENTS: NOT AVAILABLE
NORMAL OPERATING POSITION: OPEN / CLOSED / NA	REFERENCES: NONE	
FAIL POSITION: OPEN / CLOSED / NA		
DBA POSITION: OPEN / CLOSED / NA	CHECK BY: _____ DATE _____ VERIFIED BY: _____ DATE _____	

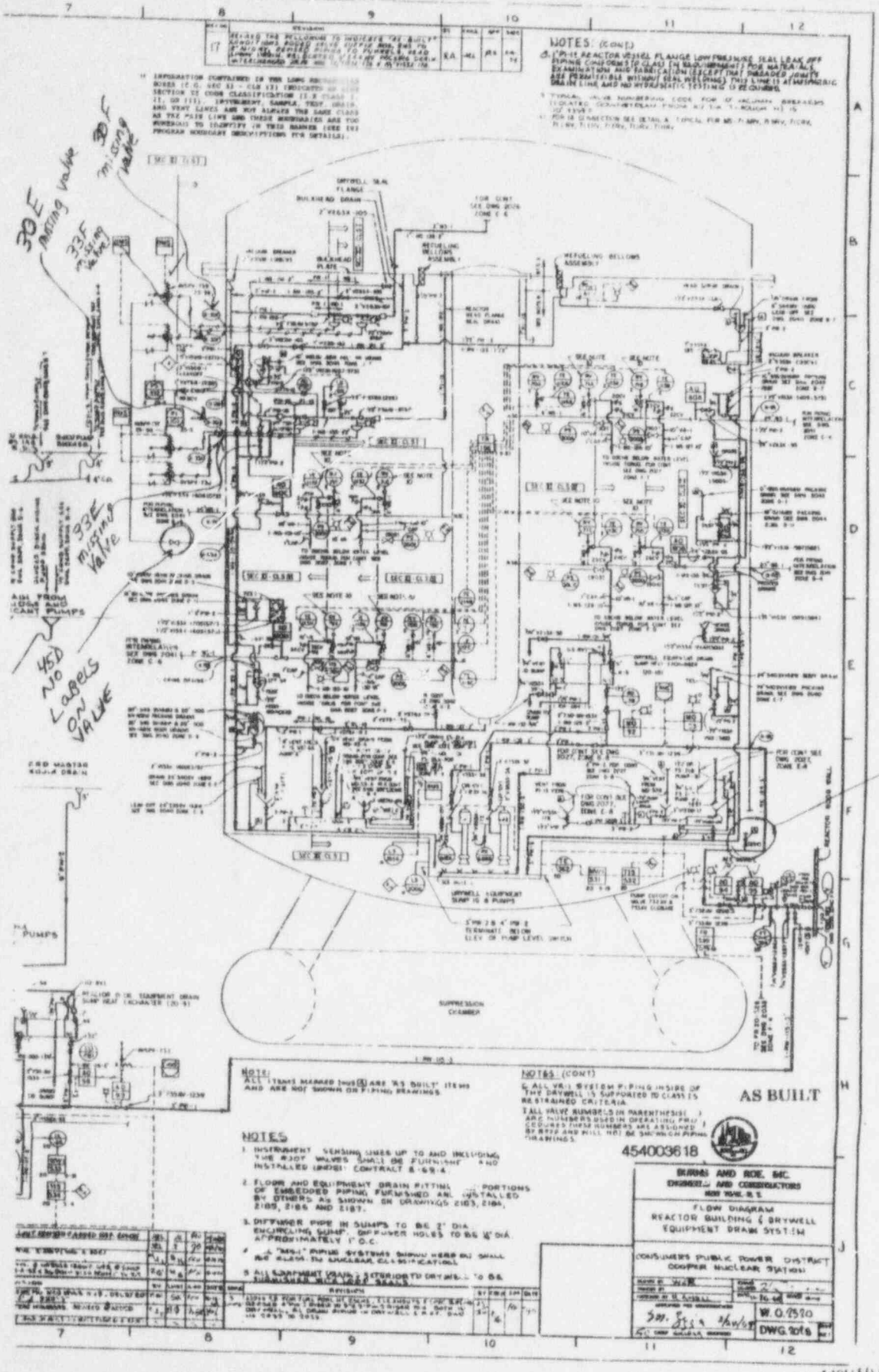
Procedure No.	Rev.	Page

PENETRATION X-45D
SOV AIR EXHAUST TO DRYWELL
CONTAINMENT ISOLATION VALVES
IA



hole drilled into weld cap (≈ 1/4")

NOTE	DESCRIPTION
1	FOR MORE INFORMATION SEE BURNS & ROE #2028
2	VENT POINT
3	TEST CONNECTION



X DRAWING SUBMITTED AS REVISION PER DC 93 34

DRAWING BEING REVISED PER

NEBRASKA PUBLIC POWER DISTRICT

CFM9400208

D: June 22, 1994

To: J. E. Lynch

From: R. E. Wilbur

FOR INTER-DISTRICT BUSINESS ONLY

Subject: **Local Leak Rate Discrepancies**

Reference: CFM9400193 from R. E. Wilbur to J. E. Lynch, dated June 7, 1994, Same Subject

The Nuclear Engineering and Construction Division provided a list, in the referenced memo, of the penetrations and valves that had been identified as of June 7th that had not been local leak rate tested in accordance with 10 CFR 50 Appendix J. The purpose of this memo is to update the list of valves and penetrations and to request your review as soon as possible to ensure that there are no modifications required to perform the LLRT on these valves.

Attachment 1 identifies the valves, instruments and penetrations that have either never been local leak rate tested or need an LLRT after modifications are complete. For each penetration, the valves or instruments that must be tested are identified. This testing must be completed prior to startup. This list includes those previously identified in the referenced memo (CFM940019).

Attachment 2 contains a penetration-by-penetration review identifying the status of LLRT testing. Those penetrations with an 'X' in the "Need Added to Procedure 6.3.1.1" have never been LLRT tested and will require an LLRT test prior to startup and will need to be incorporated into the LLRT program in the future. Those penetrations with an 'X' in the "Need One Time LLRT" will be modified such that they will not require future LLRT testing, but they will require one time pressure testing to prove zero leakage prior to startup (these penetrations will have welded caps and will be considered part of the containment liner).

It is important that all of these penetrations be reviewed for testability as soon as possible, to identify any additional design change work that must be accomplished before testing. In particular, please review Penetration X-35E, TIP N_2 Purge, for which it may be necessary to disassemble the check valve to test the outboard CIV. If this is not feasible, please notify NED immediately, so that test connections can be designed and installed.

Also, there are 13 pressure switches and 2 pressure transmitters (PS-12A-D,16,101A-D,119A-D and PT-512A/B; penetration X-40A-D) that are valved out during the ILRT and must be leak rate tested prior to startup. If there are any concerns with testing these, please notify NED as soon as possible.

Should you have any questions please call.

R. E. Wilbur
Division Manager
Nuclear Engineering & Construction

MTB:llrtmemo.rew

cc: G. R. Horn, M. J. Spencer, R. L. Gardner, F. A. Schizas, J. V. Sayer, K. B. Curry, J. M. Meacham, R. A. Jansky, G. S. McClure, M. T. Boyce, K. J. Done, File C5.3

ATTACHMENT 1
PENETRATIONS REQUIRING LLRT

ITEM	PEN. NO.	DESCRIPTION	CIVs	MODIFICATIONS IN PROGRESS
1	X-20	Demin Water to D/W	DW-V-219 DW-V-133	None. Have never been LLRT tested
2	X-21	Service Air to D/W Ring Header	SA-V-647 SA-V-648	Two new qualified manual valves are being added (647 and 648) with test connections. These will be sealed closed. DC 94-212D SA-V-647 and 648 will require LLRT after mod
3	X-23	REC D/W Supply	REC-MOV-702MV	Adding test connections inside D/W. Will be LLRT tested after mod using freeze seal. DC 94-212C
4	X-24	REC Return from D/W	REC-MOV-709MV	Same as X-23
5	X-26	D/W Purge & Vent Exhaust	PC-MOV-306MV PC-MOV-1310 PC-MOV-231MV PC-AOV-246AV PC-PT-1B2 PC-PT-4B2 PC-PT-5B2	DC 94-212E will install qualified valves at pressure instrument test connections in addition to the caps. The valves and caps will be administratively controlled. Penetration must be LLRT tested after mod
6	X-27E	New Spare	Welded Cap	This penetration will be modified by removing the manual valve and installing a welded cap outside containment. A one time LLRT is required after mod. In future, will be considered part of Containment liner
7	X-27F	New Spare	Welded Cap	Same as X-27E
8	X-29E	Air to RR Sample Valve	Two new check valves (CIC not yet assigned)	DC 94-212Fwill move SOV directly outside Containment and install two new qualified check valves with test connections outboard of the SOV. The SOV will exhaust to containment. After the mod, the two new check valves will require LLRT.

ITEM	PEN. NO.	DESCRIPTION	CIVs	MODIFICATIONS IN PROGRESS
9	X-29F	New Spare	PC-PT-1A1 PC-PT-4A1 PC-PT-5A1	DC 94-212E will add qualified valves in addition to the caps on the test connections to the pressure instruments. After the mod, the penetration will require a one time LLRT. In future, the penetration will be part of containment tested per ILRT.
10	X-30E	Air to Reactor Vessel Flange Leakoff	Two new qualified manual valves (CIC not yet known)	DC 94-212F will install two new qualified manual valves with test connections. The valves will be sealed closed and administratively controlled. LLRT required on two new manual valves.
11	X-30F	Air to Reactor Vessel Head Vent	Same as X-30E	Same as X-30E
12	X-33E	Air to Reactor Vessel Flange Leakoff	Same as X-30E	Same as X-30E
13	X-33F	Air to Reactor Vessel Head Vent	Same as X-30E	Same as X-30E
14	X-34E	New Spare	Welded Cap	DC 94-212E removes manual valve IA-V-141, and installs welded cap outside containment, one time LLRT required. In future considered part of containment liner and included in ILRT.
15	X-34F	New Spare	Welded Cap	Same as X-34E
16	X-35A	TIP Probe	TIP Ball Valve	None. Has never been LLRT Tested
17	X-35B	TIP Probe	TIP Ball Valve	Same as X-35A
18	X-35C	TIP Probe	TIP Ball Valve	Same as X-35A
19	X-35D	TIP Probe	TIP Ball Valve	Same as X-35A
20	X-35E	TIP N_2 Purge	NM-CV-2CV NM-SOV-3SV	NONE. Has never been LLRT tested.

ITEM	PEN. NO.	DESCRIPTION	CIVs	MODIFICATIONS IN PROGRESS
21	X-37A	New Spare	Welded Cap	DC 94-212E will remove PC-V 702 and add welded cap outside containment. One time LLRT required after mod. In future, will be considered part of containment liner and included in ILRT
22	X-37B	New Spare	Welded Cap	Same as X-37A
23	X-38A	New Spare (One Line)	Welded Cap	Same as X-37A
24	X-38B	New Spare (One Line)	Welded Cap	Same as X-37A
25	X-40 A - D	Primary Containment Pressure	PS-12A - D PS-16 PS-101A - D PS-119A - D PT-512A/B	These pressure switches and transmitters were inadvertently valved out during the ILRT. Since they are containment boundary, they must be LLRT tested prior to startup and the ILRT changed to correct lineup in future.
26	X-43	Pump Floor Drains	Testable Flange	DC 94-212B replaced the single gasketed flange with a double o-ring flange. This new flange must be LLRT tested.
27	X-44	Pump Floor Drains	Testable Flange	Same as X-43
28	X-45D	SOV Air Exhaust to D/W	Two new Check valves (CIC not yet determined)	DC 94-212F will install two new qualified check valves outside containment with test connections. The two new check valves must be LLRT tested.
29	X-46A	New Spare	Welded Cap	DC 94-212F will remove the manual isolation valve and cut and add a welded cap outside containment. This penetration requires a one time pressure test to prove zero leakage. In future, penetration will be considered to be part of containment liner and ILRT tested.
30	X-46B	New Spare	Welded Cap	Same as X-46A
31	X-46C	New Spare	Welded Cap	Same as X-46A
32	X-46D	New Spare	Welded Cap	Same as X-46A

ITEM	PEN. NO.	DESCRIPTION	CIVs	MODIFICATIONS IN PROGRESS
33	X-46E	New Spare	Welded Cap	Same as X-46A
34	X-46F	New Spare	Welded Cap	DC 94-212F will remove the manual isolation valve and cut and add a welded cap outside containment. This penetration requires a one time pressure test to prove zero leakage. In future, penetration will be considered to be part of containment liner and ILRT tested
35	X-47A	New Spare	Welded Cap	Same as X-46F
36	X-47C	New Spare	Welded Cap	Same as X-46F
37	X-47D	New Spare	Welded Cap	Same as X-46F
38	X-47E	New Spare	Welded Cap	Same as X-46F
39	X-47F	New Spare	Welded Cap	Same as X-46F
40	X-49E	New Spare	Welded Cap	DC 94-212F will remove the manual isolation valve and cut and add a welded cap outside containment. This penetration requires a one time pressure test to prove zero leakage. In future, penetration will be considered to be part of containment liner and ILRT tested
41	X-49F	New Spare	Welded Spare	Same as X-49E
42	X-51B	SOV Control Air to RR - AOV-741AV Exhaust	Two new check valves (CIC not yet determined)	DC 94-212F uses penetration X-51B to exhaust SOV control air back to the D/W from RR-AOV-741AV. This penetration must be LLRT tested in conjunction with X-29E.
43	X-51C	New Spare	Welded Cap	DC 94-212F will remove the manual isolation valve and cut and add a welded cap outside containment. This penetration requires a one time pressure test to prove zero leakage. In future, penetration will be considered to be part of containment liner and ILRT tested

ITEM	PEN. NO.	DESCRIPTION	CIVs	MODIFICATIONS IN PROGRESS
44	X-51D	New Spare	Welded Cap	Same as X-51C
45	X-51F	PASS D/W Atmosphere	PAS-AOV-3AV PAS-AOV-12AV	DC 94-212H replaced the existing 3AV and 12AV with qualified valves, moved them closer to the penetration and seismically qualified the line out to the second CIV. Test connections were added to allow LLRT testing. The two AOVs must be LLRT tested prior to startup.
46	X-52E	New Spare	Welded Cap	DC 94-212F will remove the manual isolation valve and cut and add a welded cap outside containment. This penetration requires a one time pressure test to prove zero leakage. In future, penetration will be considered to be part of containment liner and ILRT tested
47	X-52F	New Spare	Welded Cap	Same as X-52E
48	X-100B	New Spare	Welded Caps	Same as X-52E (two lines)
49	X-203A	H_2O_2 Analyzer	Extension of Containment	DC 94-212E will either weld caps or replace "T" with straight pipe eliminating caps. After mod, must be LLRT tested.
50	X-203B	H_2O_2 Analyzer	Extension of Containment	Same as X-203A
51	X-206A	Torus Water Level Indication	Extension of Containment	MWR 94-2978 will add caps on instrument line valves. This will require a one time LLRT prior to startup. In future will be tested per ILRT
52	X-206B	Torus Water Level Indication	Extension of Containment	Same as X-206A
53	X-206C	Torus Water level Indication	Extension of Containment	Same as X-206A
54	X-206D	Torus Water Level Indication	Extension of Containment	Same as X-206A

ITEM	PEN. NO.	DESCRIPTION	CIVs	MODIFICATIONS IN PROGRESS
55	X-209A	Torus Air Temperature	Epoxy Seal	DC 94-212A will modify design of penetration to include qualified epoxy seal. Will require LLRT prior to startup
56	X-209B	Torus Water Temperature	Epoxy Seal	DC 94-212A will modify design of penetration to include qualified epoxy seal. Will require LLRT prior to startup
57	X-209C	Torus Air Temperature	Epoxy Seal	Same as X-209B
58	X-209D	Torus Water Temperature	Epoxy Seal	Same as X-209B
59	X-214	HPCI Turbine Exhaust Drain	HPCI-AO70,71 RHR-MO167A,166A RHR-MO167B,166B RV-18,19,20,21	MWR 942978 will add caps to pressure instruments and vent lines directly connected to containment. These will require LLRT. The RHR RVs have never been tested and require LLRT prior to startup.
60	X-215	Torus Air Pressure	Extension of Containment	DC94-212E will add a valve in addition to the cap for PI-20. Will require one time LLRT prior to startup. In future will be extension of containment tested per ILRT
61	X-218	New Spare	Welded Cap	DC 94-209 cut the line removed the thermocouples and welded a cap outside containment. Will require one time LLRT prior to startup. In future will be considered extension of containment tested per ILRT.
62	X-220	Torus Purge and Vent Exhaust	PC-MO230, AO245 PC-MO305, MO1308 PC-V-143 at Rack 137	DC 94-212E added a cap in addition to valve PC-V-43 at Local Rack 137. This requires an LLRT prior to startup.

ITEM	PEN. NO.	DESCRIPTION	CIVs	MODIFICATIONS IN PROGRESS
63	X-229A	Vacuum Breaker Actuating Air	two manual valves (CIC not yet determined)	DC 94-212F will qualify the existing manual valve and add a second manual valve and test connections. Both valves will be sealed closed and administratively controlled. Both manual valves must be LLRT tested prior to startup.
64	X-229B	Vacuum Breaker Actuating Air	Same as X-229A	Same as X-229A
65	X-229C	Vacuum Breaker Actuating Air	Same as X-229A	Same as X-229A
66	X-229D	Vacuum Breaker Actuating Air	two manual valves (CIC not yet determined)	DC 94-212F will qualify the existing manual valve and add a second manual valve and test connections. Both valves will be sealed closed and administratively controlled. Both manual valves must be LLRT tested prior to startup
67	X-229E	Vacuum Breaker Actuating Air	Same as X-229D	Same as X-229D
68	X-229F	Vacuum Breaker Actuating Air	Same as X-229D	Same as X-229D
69	X-229G	Vacuum Breaker Actuating Air	Same as X-229D	Same as X-229D
70	X-229H	Vacuum Breaker Actuating Air	Same as X-229D	Same as X-229D
71	X-229J	Vacuum Breaker Actuating Air	Same as X-229D	Same as X-229D
72	X-229K	Vacuum Breaker Actuating Air	Same as X-229D	Same as X-229D
73	X-229L	Vacuum Breaker Actuating Air	Same as X-229D	Same as X-229D

Pen. No.	Penetration Description	LLRT STATUS			
		Currently in Procedure 6.3.1.1	Need Added to Procedure 6.3.1.1	Need One Time LLRT	Not Required
DWH	Drywell Head	X			
SIP1-8	Stabilizer Inspection Ports	X			
X-1A/B	Equipment Hatches	X			
X-2	Personnel Air Lock	X			
X-4	Access Hatch	X			
X-5A-H	Drywell Vent				X (Note 1)
X-6	CRD Hatch	X			
X-7A/D	Main Steam to Turbine	X			
X-7A/D Bellows	Main Steam to Turbine	X			
X-8	MSIVs Drain Line	X			
X-9A/B	Reactor Feedwater Supply	X			
X-9A/B llows	Reactor Feedwater Supply	X			
0	RCIC Steam Supply	X			
A-11	HPCI Steam Supply	X			
X-12	RHR Shutdown Cooling	X			
X-13A/B	RHR Loop Injection	X			
X-14	RWCU Supply	X			
X-15	Existing Spare				X (Note 2)
X-16A/B	Core Spray Loop Injection	X			
X-17	Existing Spare				X (Note 2)
X-18	Drywell Equipment Sump Discharge	X			
X-19	Drywell Floor Sump Discharge	X			
X-20	Demineralized Water Supply for Drywell		X		
X-21	Service Air Containment Isolation Valves		X		
X-22	Instrument Air Containment Isolation Valves		X		
3	RBCCW System Supply to Drywell		X		
X-24	RBCCW System Return from Drywell		X		

Pen. No.	Penetration Description	LLRT STATUS			
		Currently in Procedure 6.3.1.1	Need Added to Procedure 6.3.1.1	Need One Time LLRT	Not Required
X-25	Drywell Purge and Vent Supply & Dilution Supply Valves	X			
X-26	Drywell Purge and Vent Exhaust	X		X (Note 3)	
X-27A	Pressure Above Core Plate				X (Note 4)
X-27B	Pressure Below Core Plate				X (Note 4)
X-27C	Turbine Steam Line Pressure				X (Note 4)
X-27D	Turbine Steam Line Pressure				X (Note 4)
X-27E	New Spare			X (Note 5)	
X-27F	New Spare			X (Note 5)	
X-28A	RPV Level & Pressure Instrumentation				X (Note 4)
-28B	RPV Level & Pressure Instrumentation				X (Note 4)
X-28C	RPV Level & Pressure Instrumentation				X (Note 4)
X-28D	RPV Level & Pressure Instrumentation				X (Note 4)
X-28E	RPV Level & Pressure Instrumentation				X (Note 4)
X-28F	RPV Flange Seal Leak Detection				X (Note 4)
X-29A/D	RPV Level & Pressure Instrumentation				X (Note 4)
X-29E	Air to RR Sample Valve		X		
X-29F	New Spare			X (Note 5)	
X-30A/D	Main Steam Line Flow Measurement				X (Note 4)
X-30E	Air to Reactor Vessel Head Vent		X		
30F	Air to Reactor Vessel Head Vent		X		
X-31A/B	Reactor Recirc Loop 1A Pressure				X (Note 4)

Pen. No.	Penetration Description	LLRT STATUS			
		Currently in Procedure 6.3.1.1	Need Added to Procedure 6.3.1.1	Need One Time LLRT	Not Required
X-31C/D	Reactor Recirc. Loop ΔP				X (Note 4)
X-31E/F	Reactor Recirc. Pump Seal Pressure				X (Note 4)
X-32A/D	Reactor Recirc. Loop 1A Flow				X (Note 4)
X-32E/F	Reactor Recirc. Pump Seal Leakage				X (Note 4)
X-33A/D	Reactor Recirc. Loop 1A/B ΔP				X (Note 4)
X-33E/F	Air to Vessel Flange Leakoff		X		
X-34A/D	Main Steam Line Flow Measurement				X (Note 4)
X-34E	New Spare			X (Note 5)	
X-34F	New Spare			X (Note 5)	
A/E	Traveling In-Core Probes		X		
X-35A/E Flanges	Traveling In-Core Probes	X			
X-36	Drywell H_2/O_2 Monitors (3 lines)	X (Procedure 6.3.1.1.1)			
X-37A (31 lines)	Control Rod Drive Water Insert				X (Note 6)
X-37A (1 line)	New Spare			X (Note 5)	
X-37B (37 lines)	Control Rod Drive Water Insert				X (Note 6)
X-37B (1 line)	New Spare			X (Note 5)	
X-37C (38 lines)	Control Rod Drive Water Insert				X (Note 6)
X-37C (1 line)	CRD Mini-Purge to RR Pump A	X			
D (31)	Control Rod Drive Water Insert				X (Note 6)
-37D (1 line)	Existing Spare				X (Note 2)

Pen. No.	Penetration Description	LLRT STATUS			
		Currently in Procedure 6.3.1.1	Need Added to Procedure 6.3.1.1	Need One Time LLRT	Not Required
X-38A (31 lines)	Control Rod Drive Water Withdraw				X (Note 6)
X-38A (1 line)	New Spare			X (Note 5)	
X-38B (37 lines)	Control Rod Drive Water Withdraw				X (Note 6)
X-38B (1 line)	New Spare			X (Note 5)	
X-38C (38 lines)	Control Rod Drive Water Withdraw				X (Note 6)
X-38C (1 line)	CRD Mini-Purge to RR Pump B	X			
X-38D (31 lines)	Control Rod Drive Water Withdraw				X (Note 6)
X-38D (1 line)	Existing Spare				X (Note 2)
X-39A/B	Drywell Spray Loop/Dilution Supply	X			
X-39A-D	Primary Containment Pressure			X (Note 3)	
X-40A-D a-f	Jet Pump Instrumentation				X (Note 4)
X-41	Reactor Water Sample	X			
X-42	SLC Injection	X			
X-43	Pump Floor Drains		X		
X-44	Pump Floor Drains		X		
X-45A	Existing Spare				X (Note 2)
X-45B	Existing Spare				X (Note 2)
X-45C	Atmosphere Radiation Monitor	X			
X-45D	SOV Air Exhaust to Drywell		X		
X-46A/F	New Spare			X	
X-47A	New Spare			X	
X-47B	Nitrogen Inerting Sys			X (Note 3)	
X-47C/F	New Spare			X (Note 5)	

Pen. No.	Penetration Description	LLRT STATUS			
		Currently in Procedure 6.3.1.1	Need Added to Procedure 6.3.1.1	Need One Time LLRT	Not Required
X-46	Existing Spare				X (Note 2)
X-49A/B	Existing Spare				X (Note 2)
X-49C	Electrical	X			
X-49D	Electrical	X			
X-49E/F	New Spare			X	
X-50A	Electrical	X			
X-50B	Electrical	X			
X-50C	Existing Spare				X (Note 2)
X-50D	Existing Spare				X (Note 2)
X-50E	Turbine Steam Line Pressure				X (Note 4)
X	Turbine Steam Line Pressure				X (Note 4)
X-	Pressure Below Core Plate				X (Note 4)
X-51B	Solenoid valve Exhaust Return		X		
X-51C	New Spare			X	
X-51D	New Spare			X	
X-51E	Atmosphere Radiation Monitor	X			
X-51F	PASS		X		
X-52A/B	RCIC System Diff Press				X (Note 4)
X-52C/D	Core Spray System Diff Press				X (Note 4)
X-52E/F	New Spare			X (Note 4)	
X-53	Existing Spare				X (Note 2)
X-100A	Instrumentation Circuits	X			
X	New Spare			X	~~X~~ (Note 2)
X-100C/D	Existing Spare				X (Note 2)

Pen. No.	Penetration Description	LLRT STATUS			
		Currently in Procedure 6.3.1.1	Need Added to Procedure 6.3.1.1	Need One Time LLRT	Not Required
X-100E	Electrical	X			
X-100F	Instrumentation Circuits	X			
X-100G	Instrumentation Circuits	X			
X-100H	Instrumentation Circuits	X			
X-101A	5kV Power Feeders	X			
X-101B	Instrumentation Circuits	X			
X-101C	5kV Power Feeders	X			
X-101D	5kV Power Feeders	X			
X-101E	480V & 120VAC Circuits	X			
X-101F	5kV Power Feeders	X			
X-102	Instrumentation Circuits	X			
X-103	Instrumentation Circuits	X			
X-104A	Instrumentation Circuits	X			
X-104B	Instrumentation Circuits	X			
X-104C	Existing Spare				X (Note 2)
X-104D	Instrumentation Circuits	X			
X-104E	Instrumentation Circuits	X			
X-105A	480V & 120VAC Circuits	X			
X-105B/C	Existing Spare				X (Note 2)
X-105D	480V & 120VAC Circuits	X			
X-106	Instrumentation Circuits	X			
X-200A/B	Torus Hatches	X			
X-201A/H	DW Vent Line to Suppression Chamber				X (Note 1)
X-202A/M	Vacuum Breakers				X (Note 7)
X-203A/B	H_2O_2 Monitors	X (Procedure 6.3.1.1.1)		X	
X-205	Torus Purge and Vent, Vacuum Relief, Dilution Supply	X			
X-206A/B	Torus Water Level Indication			X (Note 3)	~~X~~ (Note ~~3~~)

Pen. No.	Penetration Description	LLRT STATUS			
		Currently in Procedure 6.3.1.1	Need Added to Procedure 6.3.1.1	Need One Time LLRT	Not Required
X-206C/D	Torus Water Level Indication			X (Note 3)	~~X~~ (Note 3)
X-207A/H	Drywell Vent Line to Torus Drain				X (Note 7)
X-208A/H	MS SRV Discharge				X (Note 7)
X-209A/D	Suppression Chamber Air Temperature		X		
X-210A/B	RCIC Min Flow	X			X (Note 8)
X-211A	RHR Loop A to Torus	X			
X-211B	RHR Loop B to Torus, Torus Dilution Supply	X			
X-212	RCIC Turbine Exhaust	X			
X-213A/B	Torus Drain Connection	X			X (Note 8)
X-214	HPCI Turbine Exhaust Drain	X	X (Add SV-15[03,20,21])		
X-215	Torus Air Pressure			X (Note 3)	
X-216	Existing Spare				X (Note 2)
X-217	Existing Spare				X (Note 2)
X-218	New Spare			X (Note 5)	
X-219	Existing Spare				X (Note 2)
X-220	Torus Purge and Vent Exhaust	X		X (Note 3)	
X-221	RCIC Vacuum Pump Discharge	X			X (Note 8)
X-222	HPCI Turbine Drain	X			X (Note 8)
X-223A/B	CS Pump Min Flow Line	X			X (Note 8)
X-224	RCIC Torus Suction	X			X (Note 8)
X-225	RHR Pump Suction	X			X (Note 8)

Pen. No.	Penetration Description	LLRT STATUS			
		Currently in Procedure 6.3.1.1	Need Added to Procedure 6.3.1.1	Need One Time LLRT	Not Required
X-226	HPCI Torus Suction	X			X (Note 8)
X-227A/B	CS Torus Suction	X			X (Note 8)
X-228	Existing Spare				X (Note 2)
X-229A/L	Vacuum Breaker Actuating Air		X		
X-229M	Existing Spare				X (Note 2)
X-230	Electrical	X			

NOTES

The Dryweil to Torus Vent Lines are considered an extension of the containment boundary and are included in the Type A test.

Existing spare penetrations are considered as part of the containment liner and are included in the Type A test.

Instrumentation associated with these penetrations is considered an extension of the containment boundary and is included with the Type A test. Modifications to the instrumentation or isolation of the instrumentation during the Type A test will require a one time local leak rate test (LLRT).

These penetrations are designed in accordance with Safety Guide 11 (Regulatory Guide 1.11) and are included in the Type A test.

Modifications are being made to make these penetrations spares. A one time local leak rate test (LLRT) is required. Subsequently, these penetrations will be considered part of the containment liner and included in the Type A test.

The Cooper Nuclear Station Safety Evaluation, dated February 14, 1973, Section 6.2.3, states "Systems designed prior to the implementation of Appendix J, such as the control rod drive penetrations and standby liquid control system, do not have design provisions for individual leak tests; however, the normal functional testing of these systems ensure their operability and thence the necessary containment integrity."

These penetrations are entirely contained in the torus and do not represent a potential post-accident atmospheric release path.

These penetrations are currently in the local leak rate test (LLRT) program. However, these penetrations are water sealed by the torus and can be removed from the LLRT program. IST program requirements for these penetrations should be reviewed prior to removal from the LLRT program.

AS FOUND TOTALS → (NEW PENETRATIONS)

	Max Pth	Min Pth (where applicable)	
X-20	0.284	0.24	
X-21	0.986	0.986	
X-22	< 600	< 600	
X-23	2.67	NA	
X-24	0.2	NA	
X-35A			
X-35B	0.3	0.3	
X-35C	0.18	0.18	
X-35D			
X-35E		0.0 *	1 ASFOUND LEFT
X-214	0.63	0.63	18RV
X-214	0.0	0.0	19RV
X-214	1.3	1.3	20RV
X-214	0.0	0.0	21RV
X-51F	0.53	0.0	
X-43	0.0	0.0	> – AS LEFT FROM DEC. OUTAGE
X-44	0.0	0.0	(AS-FOUND IN DEC WAS 10 ECPM TOTAL FOR BOTH
X-209A	0.0	0.0	
X-209B	0.0	0.0	
X-209C	0.0	0.0	
X-209D	~~0.0~~ 0.032	~~0.0~~ 0.032	
X-218	0.078	0.078	
X-29E	0.0	0.0	
X-51B	0.0	0.0	
X-30E	2.7	2.7	
X-30F	2.14	2.14	
X-33E	2.03	2.03	
X-33F	2.41	2.41	
X-45D	0.0	0.0	
X-46A	0.0	0.0	
X-46B	0.0	0.0	
X-46C	0.0	0.0	
X-46D	0.0	0.0	
X-46E	0.0	0.0	
X-46F	0.0	0.0	
X-47A	0.0	0.0	
X-47C	0.0	0.0	
X-47D	0.0	0.0	
X-47F	0.0	0.0	
X-47E	0.0	0.0	
X-100B	0.0		

	MK PM	MIN PT	
X-229A	0.08	0.08	
X-229B	0.08	0.08	
X-229C	0.16	0.16	
X-229D	0.08	0.08	
X-229E	0.08	0.08	
X-229F	0.16	0.16	
X-229G	0.16	0.16	
X-229H	0.08	0.08	
X-229J	0.08	0.08	
X-229K	0.08	0.08	
X-229L	0.16	0.16	
X-229M	0.0	0.0	
X-40A	0.034	0.034	12A
X-40B	0.102	0.102	12B
X-40C	0.0	0.0	12C
X-40D	0.0	0.0	12D
X-40A	0.47	0.47	101A
X-40B	0.27	0.27	101B
X-40C	0.068	0.068	101C
X-40D	0.34	0.34	101D
X-40D	0.1	0.1	119D
X-40B	3.24	3.24	119A
X-40B	1.21	1.21	119C
X-40D	0.0	0.0	119B
X-40A	0.,68	0.068	16
X-40A	0.0	0.0	512A
X-40C	0.0	0.0	512B
TOTAL	623.57 SCFM	NA	

AS OF CLOSE OF BUSINESS 7/11/94

CURRENT AS LEFT TOTAL - (MAX PATH)

181.50	SCFH	(FROM 2/2M START UP)	
- 38.501	SCFH	(PENETRATIONS DELETED FROM APP J TOTALS)	
142.998	SCFH		
- 1.46	SCFH	- OLD X-212 TEST	
141.538	SCFH		
+ 0.22	SCFH	- NEW X-212 TEST	
141.758	SCFH		
- 12.1	SCFH	- OLD RHR-MO39B TEST	
124.658	SCFH		
+ 23.3	SCFH	- NEW 2RHR-MO39B TEST	
147.958	SCFH		
- 5.51	SCFH	- REMOVING RHR-MO27A (OLD X-15B MAX PATH)	
142.448	SCFH		
+ 1.80	SCFH	- ADD RHR-27CV (NEW MAX PATH)	
144.248	SCFH		
- 15.45	SCFH	- OLD X-100A TEST	
128.798	SCFH		
+ 19.56		- NEW X-100A TEST	
148.35	SCFH		
+ 0.284	SCFH	- NEW X-20 MAX PATH	
0.18	SCFH	- NEW X-21 MAX PATH	
0.24	SCFH	- NEW X-22 MAX PATH	
2.67	SCFH	- NEW X-23 MAX PATH	
0.2	SCFH	- NEW X-24 MAX PATH	
0.2	SCFH	- NEW X-214 MAX PATH	(18RU)
0.0	SCFH	NEW X-214 MAX PATH	(19RU)
0.0	SCFH	NEW X-214 MAX PATH	(20RU)
0.0	SCFH	NEW X-214 MAX PATH	(21RU)
0.13	SCFH	NEW X-29E MAX PATH	
0.085	SCFH	NEW X-51F MAX PATH	
0.0	SCFH	NEW X-30E MAX PATH	
0.0	SCFH	NEW X-30F MAX PATH	
0.17	SCFH	NEW X-33E MAX PATH	
0.0	SCFH	NEW X-45D MAX PATH	
0.0	SCFH	NEW X-229A MAX PATH	
0.0	SCFH	NEW X-229B MAX PATH	
0.0	SCFH	NEW X-229C MAX PATH	
0.27	SCFH	NEW X-229D MAX PATH	
0.0	SCFH	NEW X-229E MAX PATH	
0.0	SCFH	NEW X-229F MAX PATH	
0.0	SCFH	NEW X-229G MAX PATH	
0.0	SCFH	NEW X-229H MAX PATH	
0.0	SCFH	NEW X-229J MAX PATH	
152.779	SCFH		

→ MINIMUM — NEXT A

152.779 SCFM

+	0.0	SCFM	NEW	X-229J	MAX PATH
	0.0	SCFM	NEW	X-229K	MAX PATH
	0.0	SCFM	NEW	X-229L	MAX PATH
	0.182	SCFM	NEW	X-35A	MAX PATH
	0.182	SCFM	NEW	X-35B	MAX PATH
	0.182	SCFM	NEW	X-35C	MAX PATH
	0.193	SCFM	NEW	X-35D	MAX PATH
	0.0	SCFM	NEW	X-43	MAX PATH
	0.0	SCFM	NEW	X-44	MAX PATH
	0.06	SCFM	NEW	X-51B	MAX PATH
	0.0	SCFM	NEW	X-209A	MAX PATH
	0.0	SCFM	NEW	X-209C	MAX PATH
	0.034	SCFM	NEW	X-40A	MAX PATH PC-12A
	0.102	SCFM	NEW	X-40B	MAX PATH PC-12B
	0.0	SCFM	NEW	X-40C	MAX PATH PC-12C
	0.0	SCFM	NEW	X-40D	MAX PATH PC-12D
	0.47	SCFM	NEW	X-40A	MAX PATH PC-101A
	0.27	SCFM	NEW	X-40B	MAX PATH PC-101B
	0.068	SCFM	NEW	X-40C	MAX PATH PC-101C
	0.34	SCFM	NEW	X-40D	MAX PATH PC-101D
	0.10	SCFM	NEW	X-40D	MAX PATH PC-119D
	0.0	SCFM	NEW	X-40B	MAX PATH PC-119A
	0.0	SCFM	NEW	X-40B	MAX PATH PC-119C
	0.0	SCFM	NEW	X-40D	MAX PATH PC-119B
	0.068	SCFM	NEW	X-40A	MAX PATH PC-16
	0.0	SCFM	NEW	X-40A	MAX PATH PT-512A
	0.0	SCFM	NEW	X-40C	MAX PATH PT-512B

155.03 SCFH - CURRENT AS LEAK TOTAL AS OF 1915 hrs 3/11/94

TESTING LEAK - X-214 - HPCI - M4
X-211B - RHR - MO39B ?
X-35E - NM - SOV - SPV2
X-6 - CRD HATCH
X-200A - TORUS HATCH
X-2 - OW AIRLOCK
X-33F - PC-565
X-33F - PC-566

TABLE 1 - TYPE C LLRT PENETRATION TESTS

PENETRATION NUMBER	CIC	PENETRATION DESCRIPTION	VOLUME ft³	AS FOUND LEAKAGE scfh	OUTBD /INBD LEAKAGE scfh*	AS LEFT LEAKAGE scfh	ALLOWABLE LIMITS scfh		INITIAL /DATE
							RECOMMENDED	TECH SPEC	
X-8	MS-MOV-M074 MS-MOV-M077	Main Steam Line Drain	1.12				≤ 1.875	≤ 150	
X-9A	RF-CV-16CV**	Reactor Feedwater - Inboard	29.39				≤ 11.25	≤ 200	
X-9A	RF-CV-15CV** RCIC-CV-26CV RWCU-CV-15CV**	RCIC And RWCU Connection To Reactor Feedwater	59.16				≤ 11.25	≤ 250	
X-9B	RF-CV-14CV**	Reactor Feedwater - Inboard	29.34				≤ 11.25	≤ 200	
X-9B	RF-CV-13CV** HPCI-CV-29CV	HPCI Connection To Reactor Feedwater	63.93				≤ 11.25	≤ 250	
X-10	RCIC-MOV-M015 RCIC-MOV-M016	RCIC Steam Supply	2.18				≤ 1.875	≤ 150	
X-11	HPCI-MOV-M015 HPCI-MOV-M016	HPCI Steam Supply	18.3				≤ 6.25	≤ 100	
X-12	RHR-MOV-M017	RHR Shutdown Cooling	208.19				≤ 12.5	≤ 200	
X-12	RHR-MOV-M018	RHR Shutdown Cooling	34.3(1) 155.87(2)				≤ 12.5	≤ 200	

1 Method 1
2 Method 2
* If determined.
** Satisfactory completion of leak testing and satisfies closure test requirements of the CNS IST Program.

PENETRATION NUMBER	CIC	PENETRATION DESCRIPTION	VOLUME ft³	AS FOUND LEAKAGE scfh	OUTBD /INBD LEAKAGE scfh[A]	AS LEFT LEAKAGE scfh	ALLOWABLE LIMITS scfh		INITIAL /DATE
							RECOMMENDED	TECH SPEC	
X-13A	RHR-MOV-MO25A	RHR Loop A Injection	355.51	[illegible]		[illegible]	≤ 15.0	≤ 25.0	
X-13A	RHR-MOV-MO27A	RHR Loop A Injection	15.2[1] 350.33[2]	[illegible]		[illegible]	≤ 15.0	≤ 25.0	
X-13B	RHR-MOV-MO25B	RHR Loop B Injection	338.92	[illegible]		[illegible]	≤ 15.0	≤ 25.0	
X-13B	RHR-MOV-MO27B	RHR Loop B Injection	15.2[1] 353.74[2]	100.12	N/A	[illegible]	≤ 15.0	≤ 25.0	7/25/94 TACF 94-15
X-14	RWCU-MOV-MO15	RWCU System Supply	1.577	[illegible]		[illegible]	≤ 1.75	[illegible]	
X-14	RWCU-MOV-MO18	RWCU System Supply	9.522	[illegible]		[illegible]	≤ 1.75	[illegible]	
X-16A	CS-MOV-MO11A CS-MOV-MO12A	CS Loop A Injection	3.0	[illegible]		[illegible]	≤ 6.25	≤ 6.25	
X-16B	CS-MOV-MO11B CS-MOV-MO12B	CS Loop B Injection	3.0	[illegible]		[illegible]	≤ 6.25	≤ 6.25	
X-18	FW-AOV-A094	Drywell Equipment Drain Sump Discharge	3.054	[illegible]		[illegible]	≤ 1.875	≤ 2.0	
X-18	FW-AOV-A095	Drywell Equipment Drain Sump Discharge	0.195	[illegible]		[illegible]	≤ 1.875	≤ 2.0	

1 Method 1
2 Method 2
* If determined
** Satisfactory completion of leak testing also satisfies closure test requirements of the CNS IST Program.

PENETRATION NUMBER	CIC	PENETRATION DESCRIPTION	VOLUME ft³	AS FOUND LEAKAGE scfh	OUTBD /INBD LEAKAGE scfh*	AS LEFT LEAKAGE scfh	ALLOWABLE LIMITS scfh		INITIAL /DATE
							RECOMMENDED	TECH SPEC	
X-19	RW-AOV-A082	Drywell Equipment Drain Sump Discharge	1.470				≤ 1.875	≤ 2.0	
X-19	RW-AOV-A083	Drywell Equipment Drain Sump Discharge	0.196				≤ 1.875	≤ 2.0	
X-25	PC-MOV-232MV PC-AOV-238AV	Drywell Purge And Vent Supply	8.49				≤ 15.0	≤ 35.0	
X-25	PC-MOV-1305MV PC-MOV-1306MV	Drywell Dilution Supply Isolation Valves - Train A	0.028				≤ 0.625	≤ 3.0	
X-26	PC-MOV-231MV PC-AOV-246AV PC-MOV-306MV PC-MOV-1310MV	Drywell Purge And Vent Exhaust	9.27				≤ 15.0	≤ 100	
X-39A	RHR-MOV-M026A RHR-MOV-M031A	Drywell Spray Loop A	36.7				≤ 6.25	≤ 25	
X-39B	RHR-MOV-M026B RHR-MO-M031B	Drywell Spray Loop B	36.7				≤ 6.25	≤ 25	
X-39B	PC-MOV-1311MV PC-MOV-1312MV	Drywell Dilution Supply Isolation Valves - Train B	0.038				≤ 0.625	≤ 3.0	
X-41	RR-AOV-740AV RR-AOV-741AV	Reactor Water Sample	0.07				≤ 0.469	≤ 1.0	
X-42	SLC-CV-12CV**	Standby Liquid Control Injection	0.03				≤ 0.9375	≤ 1.0	

* If determined.

** Satisfactory completion of leak testing also satisfies closure test requirements of the CNS IST Program.

PENETRATION NUMBER	CIC	PENETRATION DESCRIPTION	VOLUME ft³	AS FOUND LEAKAGE scfh	OUTBD /INBD LEAKAGE scfh*	AS LEFT LEAKAGE scfh	ALLOWABLE LIMITS scfh		INITIAL /DATE
							RECOMMENDED	TECH SPEC	
	SLC-CV-13CV**		0.88				≤ 0.9375	≤ 5.0	
X-37C	CRD-CV-13CV**	CRD Mini-Purge To RR Pump A	0.003				≤ 0.469	≤ 5.0	
	CRD-CV-14CV**		0.200				≤ 0.469	≤ 5.0	
X-38C	CRD-CV-15CV**	CRD Mini-Purge to RR Pump B	0.003				≤ 0.469	≤ 5.0	
	CRD-CV-16CV**		0.223				≤ 0.469	≤ 5.0	
E-51E	RMV-AOV-10AV	Drywell Vent Monitor Supply Isolation Valves	0.0683				≤ 0.469	≤ 5.0	
	RMV-AOV-11AV		0.0951				≤ 0.469	≤ 5.0	
X-45C	RMV-AOV-12AV	Drywell Vent Monitor Return Isolation Valves	0.0763				≤ 0.469	≤ 5.0	
	RMV-AOV-13AV		0.0983				≤ 0.469	≤ 5.0	
X-205	PC-MOV-233MV PC-AOV-237AV	Suppression Chamber Purge And Vent Supply	2.53				≤ 15.0	≤ 25.0	
X-205	PC-AOV-243AV PC-CV-13CV	Suppression Chamber Vacuum Relief	2.53				≤ 12.5	≤ 20.0	
X-205	PC-AOV-244AV PC-CV-14CV	Suppression Chamber Vacuum Relief	2.53				≤ 12.5	≤ 20.0	

* If determined.

** Satisfactory completion of leak testing also satisfies closure test requirements of the CNS IST Program.

PENETRATION NUMBER	GIC	PENETRATION DESCRIPTION	VOLUME ft³	AS FOUND LEAKAGE scfh	OUTBD /INBD LEAKAGE scfh*	AS LEFT LEAKAGE scfh	ALLOWABLE LIMITS scfh		INITIAL /DATE	
							RECOMMENDED	TECH SPEC		
X-205	PC-MOV-1303MV PC-MOV-1304MV	Suppression Chamber Dilution Supply Isolation Valves - Train A	0.033				≤ 0.625	≤ 3.0		
X-210A	RCIC-MOV-MO27 RCIC-CV-13CV**	RCIC Minimum Flow	0.065				≤ 1.25	≤ 2.9		
X-210A	RHR-MOV-MO21A	RHR HX A Drain To Suppression Chamber	0.09				≤ 1.25	≤ 3.0		
X-210A	RHR-MOV-MO16A RHR-CV-10CV RHR-CV-12CV	RHR Loop A Minimum Flow	3.6				≤ 2.5	≤ 7.5		
X-210B	HPCI-MOV-MO25 HPCI-CV-17CV**	HPCI Minimum Flow	0.17				≤ 2.5	≤ 1.0		
X-210B	RHR-MOV-MO21B	RHR HX B Drain To Suppression Chamber	0.09				≤ 1.25	≤ 3.0		
X-210B	RHR-MOV-MO16B RHR-CV-11CV RHR-CV-13CV	RHR Loop B Minimum Flow	3.48	0.553	NA	0.550	≤ 2.5	≤ 7.5	DNS 6/28/94	TACN 94-132
X-210A X-211A	~~RHR-MOV-MO34A~~ RHR-MOV-MO38A ~~RHR-MOV-MO39A~~	RHR Loop A To Suppression Chamber	10.3	0.155	NA	0.151	≤ 11.25	≤ 25.0	DNS 6/28/94	TACN 94-151
X-210B X-211B	~~RHR-MOV-MO34B~~ RHR-MOV-MO38B ~~RHR-MOV-MO39B~~	RHR Loop B To Suppression Chamber	10.3	MO39B 37 MO38B 0.155	NA	0.155	≤ 11.25	≤ 25.0	DNS 6/28/94 DPC 7/2/94 TACN 94-161	TACN 94-150 TACN 94-156 (MO39B)

* If determined.

** Satisfactory completion of leak testing also satisfies closure test requirements of the CNS IST Program.

PENETRATION NUMBER	CIC	PENETRATION DESCRIPTION	VOLUME ft³	AS FOUND LEAKAGE scfh	OUTBD /INBD LEAKAGE scfh*	AS LEFT LEAKAGE scfh	ALLOWABLE LIMITS scfh		INITIAL /DATE
							RECOMMENDED	TECH SPEC	
X-211B	PC-MOV-1301MV PC-MOV-1302MV	Suppression Chamber Dilution Supply Isolation Valves - Train B	0.028				≤ 0.625	≤ 3.0	
X-210A & 211A X-210B & 211B	RHR-MOV-M067	RHR Discharge to Radwaste Surge Tank	0.033				≤ 1.25	≤ 40	
X-210A & 211A X-210B & 211B	RHR-MOV-M057	RHR Discharge to Radwaste Surge Tank	0.075				≤ 1.25	≤ 100	
X-212	RCIC-CV-15CV** RCIC-V-37**	RCIC Turbine Exhaust	1.26	0.22	NA		≤ 10.0	≤ 150	7/8/94 TSCN 94-159
X-214	HPCI-CV-15CV** HPCI-V-44**	HPCI Turbine Exhaust	17.7	1.04	NA	1.04	≤ 25.0	≤ 300	7/8/94 TSCN 94-159
X-214	RHR-MOV-M0166A RHR-MOV-M0167A	RHR HX A Vent	0.044				≤ 0.625	≤ 3.0	
X-214	RHR-MOV-M0166B RHR-MOV-M0167B	RHR HX B Vent	0.039				≤ 0.625	≤ 3.0	
X-214	HPCI-AOV-A070 HPCI-AOV-A071	HPCI Turbine Exhaust Drain	0.02				≤ 0.625	≤ 2.0	
X-220	PC-MOV-230MV PC-AOV-245AV PC-MOV-305MV PC-MOV-1308MV	Suppression Chamber Purge And Vent Exhaust	13.94				≤ 15.0	≤ 300	
X-221	RCIC-CV-12CV** RCIC-V-42**	RCIC Vacuum Pump Discharge To Suppression Chamber	0.0456				≤ 2.5	≤ 3.0	

* If determined.

** Satisfactory completion of leak testing also satisfies closure test requirements of the CNS IST Program.

PENETRATION NUMBER	CIC	PENETRATION DESCRIPTION	VOLUME ft³	AS FOUND LEAKAGE scfh	OUTBD /INBD LEAKAGE scfh*	AS LEFT LEAKAGE scfh	ALLOWABLE LIMITS scfh		INITIAL /DATE
							RECOMMENDED	TECH SPEC	
X-222	HPCI-CV-16CV** HPCI-V-50**	HPCI Turbine Drain To Suppression Chamber	0.027				≤ 2.5	≤ 5.0	
X-223A	CS-MOV-M026A	CS A Test	2.19				≤ 3.125	≤ 5.0	
X-223A	CS-MOV-M05A	CS A Minimum Flow	0.395				≤ 0.9375	≤ 5.0	
X-223B	CS-MOV-M026B	CS B Test	2.46				≤ 3.125	≤ 5.0	
X-223B	CS-MOV-M05B	CS B Minimum Flow	0.30				≤ 0.9375	≤ 10.0	
X-224	RCIC-MOV-M041	RCIC Suction From Suppression Chamber	2.01				≤ 1.875	≤ 5.0	
X-225A	RHR-MOV-M013A	RHR Pump A Suction From Suppression Chamber	11.3				≤ 6.25	≤ 10.0	
X-225B	RHR-MOV-M013C	RHR Pump C Suction From Suppression Chamber	10.95				≤ 6.25	≤ 10.0	
X-225C	RHR-MOV-M013B	RHR Pump B Suction From Suppression Chamber	11.3				≤ 6.25	≤ 10.0	
X-225D	RHR-MOV-M013D	RHR Pump D Suction From Suppression Chamber	10.95				≤ 6.25	≤ 10.0	
X-226	HPCI-MOV-M058	HPCI Suction From Suppression Chamber	4.6				≤ 5.0	≤ 10.0	

* If determined.

** Satisfactory completion of leak testing also satisfies closure test requirements of the CNS IST Program.

PENETRATION NUMBER	CIC	PENETRATION DESCRIPTION	VOLUME (')	AS FOUND LEAKAGE scfh	OUTBD /INBD LEAKAGE scfh*	AS LEFT LEAKAGE scfh	ALLOWABLE LIMITS scfh		INITIAL /DATE
							RECOMMENDED	TECH SPEC	
X-227A	CS-MOV-MO7A	CS Pump A Suction From Suppression Chamber	3.11	[redacted]		[redacted]	≤ 4.375	[redacted]	
X-227B	CS-MOV-MO7B	CS Pump B Suction From Suppression Chamber	3.11	[redacted]		[redacted]	≤ 4.375	[redacted]	

* If determined.

TABLE 1 - TYPE C LLRT PENETRATION TESTS

PENETRATION NUMBER	CIC	PENETRATION DESCRIPTION	VOLUME ft³	AS FOUND LEAKAGE scfh	OUTBD /INBD LEAKAGE scfh*	AS LEFT LEAKAGE scfh	ALLOWABLE LIMITS scfh RECOMMENDED	ALLOWABLE LIMITS scfh TECH SPEC	INITIAL /DATE	
X-13B	RHR-MOV-M027MB RHR-CV-27CV	RHR LOOP B INJECTION CHECK VALVE AND BYPASS	MAKE UP FLOW TEST ONLY	1.80	NA	1.80	± 15.0		DAS 6/21/94	TPCN 94-140
X-6Q	PW-V-217	DEMIN WATER SUPPLY TO DW	NA	0.284	NA		0.5		DAS 6/28/94	TPCN 94-140
X-20	DW-V-133	DEMIN WATER SUPPLY TO DW	NA		NA		0.5		DAS 6/28/94	TPCN 94-140
X-22	IA-CV-78CV	IA SUPPLY TO MSIV'S	0.2		NA		0.5		SAT 6/13/94 DAS 7/6/94	TPCN 94-140 TPCN 94-161
X-23	REC-MOV-708MV	REC INLET TO DW	NA		NA		2.5		DAS 7/6/94	TPCN 94-159
X-24	REC-MOV-709MV	REC OUTLET FROM DW	NA	0.12	NA		2.5		DAS 7/6/94	TPCN 94-159
X-35A	NMT-NVA-104A	TIP VALVE A	NA	0.182	NA		0.25		DAS 7/11/94	TPCN 94-161
X-35B	NMT-NVA-104B	TIP VALVE B	NA	0.3	NA		0.25		DAS 6/23/94	TPCN 94-140 TPCN 94-161
X-35C	NMT-NVA-104C	TIP VALVE C	NA	0.18	NA		0.25		DAS 6/23/94	TPCN 94-140 TPCN 94-161
X-22	IA-CV-78CV	IA SUPPLY TO MSIV'S (OUTBD)	0.2	NA	NA	0.2	0.5	1.5	DAS 5/31/94	TPCN 94-161

1 Method 1
2 Method 2
* If determined.
** Satisfactory completion of leak testing also satisfies closure test requirements of the CNS IST Program.

TABLE 1 - TYPE C LLRT PENETRATION TESTS

PENETRATION NUMBER	CIC	PENETRATION DESCRIPTION	VOLUME ft³	AS FOUND LEAKAGE scfh	OUTBD /INBD LEAKAGE scfh*	AS LEFT LEAKAGE scfh	ALLOWABLE LIMITS scfh		INITIAL /DATE	
							RECOMMENDED	TECH SPEC		
X-35D	NMT-MVA-104D	TIP VALVE D	NA	0.193	NA		0.25		DAS 7/11/94	TPCN 94-161
X-35E	NM-CV-CV2	TIP PURGE SUPPLY CV	NA	0.0	NA		0.25		DAS 6/23/94	TPCN 94-140 TPCN 94-161
X-35E	NM-SOV-SPV2	TIP PURGE SUPPLY SOLENOID	NA		NA		0.25		DAS 6/23/94	
X-214	RHR-RV-18RV	STEAM SUPPLY TO RHR Hx A	NA	0.03	NA		0.5		DAS 6/21/94	TPCN 94-156 TPCN 94-196
X-214	RHR-RV-19RV	STEAM SUPPLY TO RHR Hx B	NA	0.0	NA		0.5		DAS 6/21/94	TPCN 94-132
X-214	RHR-RV-20RV	RHR Hx A SHELL SIDE RELIEF	NA	1.3	NA		0.5		DAS 6/21/94	TPCN 94-156 TPCN 94-196
X-214	RH-RV-21RV	RHR Hx B SHELL SIDE RELIEF	NA	0.0	NA		0.5		DAS 6/21/94	TPCN 94-132
X-29E	PC-CV-33CV	RR-SOV-SPV741 INBOARD SUPPLY	0.001 **** 0.6 *****		NA		0.1		DAS 7/4/94	
X-29E	PC-CV-34CV	RR-SOV-SPV741 OUTBOARD SUPPLY	0.002 **** 0.6 *****		NA		0.1		DAS 7/4/94	
X-51F	PC-AOV-247AV	PAS System ISOLATION VALVE	*** 0.013	NA	NA	0.085	1.0	3.01	DAS 7/11/94	TPCN 94-159

1 Method 1
2 Method 2
* If determined
** Satisfactory completion of leak testing also satisfies closure test requirements of the CNS IST Program.
*** - USE 0.263 FT³ IF USING PORTABLE TEST VOLUME.
**** - ADD 0.65 FT³ IF USING PORTABLE TEST VOLUME.

TABLE 1 - TYPE C LLRT PENETRATION TESTS

PENETRATION NUMBER	CIC	PENETRATION DESCRIPTION	VOLUME ft³	AS FOUND LEAKAGE scfh	OUTBD /INBD LEAKAGE scfh*	AS LEFT LEAKAGE scfh	ALLOWABLE LIMITS scfh		INITIAL /DATE	
							RECOMMENDED	TECH SPEC		
X-30E	PC-V-559	NAI-SOV-SPV727 INBD SUPPLY	0.085 ****		NA		0.1			
X-30E	PC-V-560	NAI-SOV-SPV727 OUTBD SUPPLY	0.115 ****		NA		0.1			
X-30F	PC-V-561	MS-SOV-SPV739 INBD SUPPLY	0.085 ****		NA		0.1			
X-30F	PC-V-562	MS-SOV-SPV739 OUTBD SUPPLY	0.115 ****		NA		0.1			
X-32E	PC-V-563	NAI-SOV-SPV738 INBD SUPPLY	0.085 ****		NA		0.1			
X-32E	PC-V-564	NAI-SOV-SPV738 OUTBD SUPPLY	0.115 ****		NA		0.1			
X-33F	PC-V-565	NAI-SOV-SPV738 INBD SUPPLY	0.085 ****		NA		0.1			
X-33F	PC-V-566	NAI-SOV-SPV738 OUTBD SUPPLY	0.115 ****		NA		0.1			
X-45Q	PC-CV-35CV	NAI SOLENOID EXH TO AV CV (INBD)	0.002 ****		NA		0.25			
X-51F	PC-AOV-248AV	PAS SYSTEM ISOLATION VALVE	0.0011 ***	NA	NA	0.068	1.0	3.0		

1 Method 1

2 Method 2

* If determined.

** Satisfactory completion of leak testing also satisfies closure test requirements of the CNS IST Program.

*** USE 0.015 FT³ IF TESTING BETWEEN PC-V-44 AS PC-AOV-248AV, USE 0.265 FT³ IF TESTING BETWEEN PC-V-44 AND PC-AOV-248AV AND USING PORTABLE TEST VOLUME, USE 0.26 FT³ IF TESTING BETWEEN PC-AOV-247AV AND PC-AOV-248AV AND USING PORTABLE TEST VOLUME.

**** ADD 0.25 FT³ IF USING PORTABLE TEST VOLUME.

TABLE 1 - TYPE C LLRT PENETRATION TESTS

PENETRATION NUMBER	I.D.	PENETRATION DESCRIPTION	VOLUME FT³	AS FOUND LEAKAGE scfh	OUTBD /INBD LEAKAGE scfh*	AS LEFT LEAKAGE scfh	ALLOWABLE LIMITS scfh RECOMMENDED	ALLOWABLE LIMITS scfh TECH SPEC	INITIAL /DATE	
X-45D	PC-CV-36CV	MN STEAM SUPPLY TO RFW (OUTBD)	0.003 **** ~~0.7~~ ***		NA		0.25	1.60	[illegible]	TMCN 94-161
X-229A	PC-V-569	AIR TO NRV-20 (INBD)	0.014 **** ***		NA		0.1	0.55	DAS 7/6/94	TMCN 94-159
X-229A	PC-V-570	AIR TO NRV-20 (OUTBD)	0.015 **** ***		NA		0.1	0.55	DAS 7/6/94	TMCN 94-159
X-229B	PC-V-571	AIR TO NRV-21 (INB)	0.014 **** ***		NA		0.1	0.55	DAS 7/6/94	TMCN 94-159
X-229B	PC-V-572	AIR TO NRV-21 (OUTBd)	0.015 **** ***		NA		0.1	0.55	DAS 7/6/94	TMCN 94-159
X-229C	PC-V-573	AIR TO NRV-22 (INB)	0.014 **** ***		NA		0.1	0.55	DAS 7/6/94	TMCN 94-159
X-229C	PC-V-574	AIR TO NRV-22 (OUTBD)	0.013 **** ***		NA		0.1	0.55	DAS 7/6/94	TMCN 94-159
X-229D	PC-V-575	AIR TO NRV-23 (INB)	0.014 **** ***		NA		0.1	0.55	DAS 7/6/94	TMCN 94-159
X-229D	PC-V-576	AIR TO NRV-23 (OUTBD)	0.015 **** ***		NA		0.1	0.55	DAS 7/6/94	TMCN 94-159

1 Method 1
2 Method 2
* If determined.
** Satisfactory completion of leak testing also satisfies closure test requirements of the CNS IST Program.
**** - ADD 0.20 FT³ IF USING MIG WITH 200 FT OF 1/2" TUBING. (200 FT ASSUMED LENGTH, AS THIS RECORDS MAY ABOUT REQUIRED FOR TESTING).
***** - ADD 0.25 FT³ IF USING PORTABLE TEST VOLUME.

TABLE 1 - TYPE C LLRT PENETRATION TESTS

PENETRATION NUMBER	CIC	PENETRATION DESCRIPTION	VOLUME ft³	AS FOUND LEAKAGE scfh	OUTBD /INBD LEAKAGE scfh*	AS LEFT LEAKAGE scfh	ALLOWABLE LIMITS scfh		INITIAL /DATE	
							RECOMMENDED	TECH SPEC		
X-229E	PC-V-577	AIR TO NRV-24 (INBD)	0.014 *** ****	NA	NA		0.1		JMS 7/6/94	JMW 94-159
X-229E	PC-V-578	AIR TO NRV-24 (OUTBD)	0.013 *** ****	NA	NA		0.1		JMS 7/6/94	JMW 94-159
X-229F	PC-V-579	AIR TO NRV-25 (INBD)	0.014 *** ****	NA	NA		0.1		JMS 7/6/94	JMW 94-159
X-229F	PC-V-580	AIR TO NRV-25 (OUTBD)	0.013 *** ****	NA	NA		0.1		JMS 7/6/94	JMW 94-159
X-229G	PC-V-581	AIR TO NRV-26 (INB)	0.014 *** ****	NA	NA		0.1		JMS 7/6/94	JMW 94-159
X-229G	PC-V-582	AIR TO NRV-26 (OUTBD)	0.013 *** ****	NA	NA		0.1		JMS 7/6/94	JMW 94-159
X-229H	PC-V-583	AIR TO NRV-27 (INBD)	0.014 *** ****	NA	NA		0.1		JMS 7/6/94	JMW 94-159
X-229H	PC-V-584	AIR TO NRV-27 (OUTBD)	0.013 *** ****	NA	NA		0.1		JMS 7/6/94	JMW 94-159
X-229J	PC-V-585	AIR TO NRV-28 (INBD)	0.014 *** ****	NA	NA		0.1		JMS 7/6/94	JMW 94-159

1 Method 1
2 Method 2
* If determined.
** Satisfactory completion of leak testing also satisfies closure test requirements of the CNS IST Program.
*** - ADD 0.20 ft³ IF USING AIR WITH 200FT OF ½" TUBING (200FT ASSUMED AS THIS EXCEEDS MAX AMOUNT REQUIRED FOR TESTING)
**** - ADD 0.25 ft³ IF USING PORTABLE TEST VOLUME.

TABLE 1 -- TYPE C LLRT PENETRATION TESTS

PENETRATION NUMBER	CIC	PENETRATION DESCRIPTION	VOLUME ft³	AS FOUND LEAKAGE scfh	OUTBD /INBD LEAKAGE scfh*	AS LEFT LEAKAGE scfh	ALLOWABLE LIMITS scfh		INITIAL /DATE	
							RECOMMENDED	TECH SPEC		
X-229J	PC-V-586	AIR TO NRV-28 (OUTBD)	0.015 *** **** 0.6	NA	NA	0.1	0.1	0.5	DMS 7/6/94	TPCN 94-159
X-229K	PC-V-587	AIR TO NRV-29 (INBD)	0.014 *** **** 0.6	NA	NA	0.0	0.1	0.5	DMS 7/6/94	TPCN 94-159
X-229K	PC-V-588	AIR TO NRV-29 (OUTBD)	0.015 *** **** 0.6	NA	NA	0.1	0.1	0.5	DMS 7/6/94	TPCN 94-159
X-229L	PC-V-589	AIR TO NRV-30 (INBD)	0.014 *** **** 0.6	NA	NA	0.1	0.1	0.5	DMS 7/6/94	TPCN 94-159
X-229L	PC-V-590	AIR TO NRV-30 (OUTBD)	0.019 *** **** 0.6	NA	NA	0.1	0.1	0.5	DMS 7/6/94	TPCN 94-159
X-21	SA-CV-15CV	SA TO DW SUPPLY CV	2.5	0.986	NA	NA	0.5	1.5	DMS 7/4/94	TPCN 94-186
X-21	SA-V-647	SA TO DW SUPPLY VALVE (IN)	2.5 2.5	NA	NA	0.1	0.5	1.5	DMS 7/4/94	TPCN 94-186
X-21	SA-V-648	SA TO DW SUPPLY VALVE (OU)	2.5 2.5	NA	NA	0.5	0.5	1.5	DMS 7/4/94	TPCN 94-186
X-51F	~~PAS-AOV-3AV~~ PAS-AOV-42AV	CONTAINMENT ATMOSPHERE SAMPLE ISOLATION	.013 ~~.223~~ .210	0.53	NA	NA	1.0	3.0	DMS 6/30/94	TPCN 94-186
X-51F	PASAOV-42AV	VOLUME X VENT	.210	0.0	NA	NA	1.0	3.0	DMS 6/30/94	TPCN 94-186

1 Method 1
2 Method 2
* If determined.
** Satisfactory completion of leak testing also satisfies closure test requirements of the CNS IST Program.
*** - ADD 0.2 FT³ IF USING AIR WITH 200 FT OF 1/2" TUBING (200 FT ASSUMED, AS MAY LENGTH REQUIRED FOR TESTING)
**** - ADD 0.35 FT³ IF USING PORTABLE TEST VOLUME.

TABLE 2 - TYPE B PENETRATION LLRT TESTS

PENETRATION NUMBER	CIC	PENETRATION DESCRIPTION	VOLUME ft³	AS FOUND LEAKAGE scfh	OUTBD/INBD LEAKAGE scfh*	AS LEFT LEAKAGE scfh	ALLOWABLE LIMITS scfh	INITIAL/ DATE
X-1A**	PC-PENT-X1A	Northeast Drywell Equipment Hatch	0.25				≤ 0.1	
X-1B**	PC-PENT-X1B	Southwest Drywell Equipment Hatch	0.25				≤ 0.1	
X-4**	PC-PENT-X4	Drywell Head Access Hatch	0.25				≤ 0.1	
X-6**	PC-PENT-X6	CRD Removal Hatch	0.25	0.6	N/A		≤ 0.1	[illegible] TMCN 94-012
X-7A***	PC-PENT-X7A	Main Steam Line A Expansion Bellows	0.25				≤ 1.0	
X-7B***	PC-PENT-X7B	Main Steam Line B Expansion Bellows	0.25				≤ 1.0	
X-7C***	PC-PENT-X7C	Main Steam Line C Expansion Bellows	0.25				≤ 1.0	
X-7D***	PC-PENT-X7D	Main Steam Line D Expansion Bellows	0.25				≤ 1.0	
X-9A***	PC-PENT-X9A	Reactor Feedwater Line A Expansion Bellows	0.25				≤ 1.0	
X-9B***	PC-PENT-X9B	Reactor Feedwater Line B Expansion Bellows	0.25				≤ 1.0	
X-35A**	PC-PENT-X35A	TIP D	0.25	0.0	N/A	0.0	≤ 0.1	7/8/94 TMCN 94-11 7/14/94 TMCN 94-13

* If determined.

** Denotes bolted double gasket seal or testable gasket.

*** Denotes testable expansion bellows.

PENETRATION NUMBER	CIC	PENETRATION DESCRIPTION	VOLUME ft^3	AS FOUND LEAKAGE scfh	OUTBD/INBD LEAKAGE scfh*	AS LEFT LEAKAGE scfh	ALLOWABLE LIMITS scfh	INITIAL/ DATE
X-35B**	PC-PENT-X35B	TIP A	0.25	0.0	n/a	0.0	≤ 0.1	
X-35C**	PC-PENT-X35C	TIP C	0.25	0.0	n/a	0.0	≤ 0.1	
X-35D**	PC-PENT-X35D	TIP B	0.25	0.0	n/a	0.0	≤ 0.1	
X-35E**	PC-PENT-X35E	TIP Nitrogen Purge	0.25	0.0	n/a	0.0	≤ 0.1	
X-36	PC-AN-H_2/O_2I	Division I H_2/O_2 Analyzer	0.33				≤ 5.0	
X-36	PC-AN-H_2/O_2II	Division II H_2/O_2 Analyzer	0.32				≤ 5.0	
X-49C	PC-PENT-X49C	Instrumentation And Control	0.023				≤ 0.1	
X-49D	PC-PENT-X49D	Instrumentation And Control	0.023				≤ 0.1	
X-50A	PC-PENT-X50A	Instrumentation And Control	0.023				≤ 0.1	
X-50B	PC-PENT-X50B	Instrumentation and Control	0.023				≤ 0.1	
X-100A	PC-PENT-X100A	Low Voltage Power	5.7				≤ 0.1	

* If determined.

** Denotes bolted double gasket seal or testable gasket.

*** Denotes testable expansion bellows.

PENETRATION NUMBER	CIC	PENETRATION DESCRIPTION	VOLUME ft³	AS FOUND LEAKAGE scfh	OUTBD/INBD LEAKAGE scfh*	AS LEFT LEAKAGE scfh	ALLOWABLE LIMITS scfh	INITIAL/ DATE
X-100E	PC-PENT-X100E	Thermocouple	5.5				≤ 0.1	
X-100F	PC-PENT-X100F	Neutron Monitoring Signals	5.5				≤ 0.1	
X-100G	PC-PENT-X100G	Low Voltage Power	5.9				≤ 0.1	
X-100H	PC-PENT-X100H	Low Voltage Power	5.56				≤ 0.1	
X-101A	PC-PENT-X101A	Medium Voltage Power	5.7				≤ 0.1	
X-101B	PC-PENT-X101B	Neutron Monitoring Signals	5.56				≤ 0.1	
X-101C	PC-PENT-X101C	Medium Voltage Power	5.9				≤ 0.1	
X-101D	PC-PENT-X101D	Medium Voltage Power	5.9				≤ 0.1	
X-101E	PC-PENT-X101E	Low Voltage Power And Instrumentation	0.25				≤ 0.1	
X-101F	PC-PENT-X101F	Medium Voltage Power	6.11				≤ 0.1	
X-102	PC-PENT-X102	Low Voltage Power	5.9				≤ 0.1	

* If determined.
** Denotes bolted double gasket seal or testable gasket.
*** Denotes testable expansion bellows.

PENETRATION NUMBER	CIC	PENETRATION DESCRIPTION	VOLUME ft^3	AS FOUND LEAKAGE scfh	OUTBD/INBD LEAKAGE scfh*	AS LEFT LEAKAGE scfh	ALLOWABLE LIMITS scfh	INITIAL/ DATE
X-103	PC-PENT-X103	Neutron Monitoring Signals	5.09				≤ 0.1	
X-104A	PC-PENT-X104A	Instrumentation And Control	5.97				≤ 0.1	
X-104B	PC-PENT-X104B	Instrumentation And Control	5.56				≤ 0.1	
X-104D	PC-PENT-X104D	Instrumentation And Control	4.33				≤ 0.1	
X-104E	PC-PENT-X104E	Instrumentation And Control	4.58				≤ 0.1	
X-105A	PC-PENT-X105A	Low Voltage Power	5.84				≤ 0.1	
X-105D	PC-PENT-X105D	Medium Voltage Power	6.24				≤ 0.1	
X-106	PC-PENT-X106	Neutron Monitoring Signals	5.42				≤ 0.1	
X-230	PC-PENT-X230	Low Voltage Power	2.39				≤ 0.1	
X-200A**	PC-PENT-X200A	Northwest Suppression Chamber Access Hatch	0.25				≤ 0.1	
X-200B**	PC-PENT-X200B	Southeast Suppression Chamber Access Hatch	0.25	0.0	NA		≤ 0.1	6.3.1.1

* If determined.
** Denotes bolted double gasket seal or testable gasket.
*** Denotes testable expansion bellows.

PENETRATION NUMBER	CIC	PENETRATION DESCRIPTION	VOLUME ft³	AS FOUND LEAKAGE scfh	OUTBD/INBD LEAKAGE scfh*	AS LEFT LEAKAGE scfh	ALLOWABLE LIMITS scfh	INITIAL/ DATE
X-213B**	PC-PENT-X213B	Suppression Chamber Drain Flange	0.25				≤ 0.1	
------**	PC-PENT-DWH	Drywell Head	0.25				≤ 0.1	
------**	PC-PENT-SIP1	Stabilizer Inspection Port 1	0.25				≤ 0.1	
------**	PC-PENT-SIP2	Stabilizer Inspection Port 2	0.25				≤ 0.1	
------**	PC-PENT-SIP3	Stabilizer Inspection Port 3	0.25				≤ 0.1	
------**	PC-PENT-SIP4	Stabilizer Inspection Port 4	0.25				≤ 0.1	
------**	PC-PENT-SIP5	Stabilizer Inspection Port 5	0.25				≤ 0.1	
------**	PC-PENT-SIP6	Stabilizer Inspection Port 6	0.25				≤ 0.1	
------**	PC-PENT-SIP7	Stabilizer Inspection Port 7	0.25				≤ 0.1	
------**	PC-PENT-SIP8	Stabilizer Inspection Port 8	0.25				≤ 0.1	
X-220**	PC-FLG-230MV	PC-230MV Testable Flange	0.25				≤ 0.1	
X-26**	PC-FLG-231MV	PC-231MV Testable Flange	0.25				≤ 0.1	

* If determined.
** Denotes bolted double gasket seal or testable gasket.
*** Denotes testable expansion bellows.

PENETRATION NUMBER	CIC	PENETRATION DESCRIPTION	VOLUME ft³	AS FOUND LEAKAGE scfh	OUTBD/INBD LEAKAGE scfh*	AS LEFT LEAKAGE scfh	ALLOWABLE LIMITS scfh	INITIAL/ DATE
X-25**	PC-FLG-232MV	PC-232MV Testable Flange	0.25				≤ 0.1	
X-205**	PC-FLG-233MV	PC-233MV Testable Flange	0.25				≤ 0.1	
X-205**	PC-FLG-243AV	PC-243AV Testable Flange	0.25				≤ 0.1	
X-205**	PC-FLG-244AV	PC-244AV Testable Flange	0.25				≤ 0.1	
X-225A**	RHR-FLG-10RV	Testable Flange	0.25				≤ 0.1	
X-225C**	RHR-FLG-11RV	Testable Flange	0.25				≤ 0.1	
X-225B**	RHR-FLG-12RV	Testable Flange	0.25				≤ 0.1	
X-225D**	RHR-FLG-13RV	Testable Flange	0.25				≤ 0.1	
X-210A**	RHR-FLG-14RV	Testable Flange	0.25				≤ 0.1	
X-210B**	RHR-FLG-15RV	Testable Flange	0.25				≤ 0.1	
X-210A**	RHR-FLG-17RV	Testable Flange	0.25				≤ 0.1	
X-214**	RHR-FLG-18RV	Testable Flange	0.25	0.0		0.0	≤ 0.1	DAS 4/29/94 DAS 4/30/94 DEW 5-4-94

* If determined.
** Denotes bolted double gasket seal or testable gasket.
*** Denotes testable expansion bellows.

TABLE 2 - TYPE B PENETRATION LLRT TESTS

PENETRATION NUMBER	CIC	PENETRATION DESCRIPTION	VOLUME ft³	AS FOUND LEAKAGE scfh	OUTBD/INBD LEAKAGE scfh*	AS LEFT LEAKAGE scfh	ALLOWABLE LIMITS scfh	INITIAL/ DATE	
X-43	PC-PENT-X43	ILRT TEST CONNECTION	0.25	0.0*	NA	0.0	0.1	DMS 3/14/94 DMS 4/22/94	TPCN 94-14 TPCN 94-186
X-44	PC-PENT-X44	ILRT TEST CONNECTION	0.25	0.0*	NA	0.0	0.1	DMS Water DMS 6/22/94	DMC 94-161 TPCN 94-140
X-209A	PC-PENT-X209A	TORUS AIR TEMPERATURE	0.5	0.0	NA	0.0	0.5	DMS 6/24/94 DMS 6/24/94	TPCN 94-132 94-140
X-209B	PC-PENT-X209B	TORUS WATER TEMPERATURE	0.5	0.0	NA	0.0	0.5	DMS 6/24/94	TPCN 94-132 94-140
X-209C	PC-PENT-X209C	TORUS AIR TEMPERATURE	0.5	0.0	NA	0.0	0.5	DMS 6/24/94 DMS 6/24/94	TPCN 94-132 94-140
X-209D	PC-PENT-X209D	TORUS WATER TEMPERATURE	0.5	0.032 ~~0.0~~ DMS 6/24/94	A	0.032 ~~0.0~~ DMS Water 94	0.5	DMS 6/22/94	TPCN 94-132 94-140
X-218	PC-PENT-X218	TORUS TEMPERATURE	1.2	0.078	NA	0.0	1.0	DMS 6/24/94	TPCN 94-132
X-29B	PC-PENT-X29B	SUPPLY PIPING TO RR-SOV-SPV741	0.5	0.0	NA	NA	0.5	DMS 5/1/94	DPCN 94-156
X-51B	PC-PENT-X51B	EXHAUST PIPING TO RR-SOV-SPV741	0.5	0.0	NA	0.06 ~~0.0~~ DMS 7/11/94	0.5	DMS 6/29/94 DMS 7/11/94	TPCN 94-156 TPCN 94-161
X-30E	PC-PENT-X30E	PIPING TO MSL-SOV-SPV737	0.5	2.7	NA	NA	10.5	DMS 6/29/94	TPCN 94-156
X-30F	PC-PENT-X30F	PIPING TO MS-SOV-SPV734	0.5	2.14	NA	NA	0.5	DMS 6/29/94	TPCN 94-156

* PERFORMED 12/18/93 TPCN 93-961 DMS 6/22/94

* If determined.
** Denotes bolted double gasket seal or testable gasket.
*** Denotes testable expansion bellows.

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TABLE 2 - TYPE B PENETRATION LLRT TESTS

PENETRATION NUMBER	CIC	PENETRATION DESCRIPTION	VOLUME ft³	AS FOUND LEAKAGE scfh	OUTBD/INBD LEAKAGE scfh*	AS LEFT LEAKAGE scfh	ALLOWABLE LIMITS scfh	INITIAL/ DATE	
X-33E	PC-PENT-X33E	PIPING TO MSIV SOV SPV736	0.5	2.03	NA	NA	0.5	JAS 6/29/94	TPCN 94-150
X-33F	PC-PENT-X33F	PIPING TO MSIV SOV SPV738	0.5	2.41	NA	NA	0.5	JAS 6/30/94	TPCN 94-156
X-45D	PC-PENT-X45D PC-V-267	MSIVMS SOV EXHAUST LOOP	0.75	0.0	NA	NA	0.5	JAS 6/30/94	TPCN 94-156
X-46A	PC-PENT-X46A PC-V-266	SPARE	0.35	0.0	NA	NA	0.1	JAS 6/28/94	TPCN 94-150
X-46B	PC-PENT-X46B PC-V-267	SPARE	0.35	0.0	NA	NA	0.1	JAS 6/28/94	
X-46C	PC-PENT-X46C PC-V-268	SPARE	0.35	0.0	NA	NA	0.1	JAS 6/28/94	
X-46D	PC-PENT-X46D PC-V-269	SPARE	0.35	0.0	NA	NA	0.1	JAS 6/28/94	
X-46E	PC-PENT-X46E PC-V-270	SPARE	0.35	0.0	NA	NA	0.1	JAS 6/28/94	
X-46F	PC-PENT-X46F PC-V-271	SPARE	0.35	0.0	NA	NA	0.1	JAS 6/28/94	
X-47A	PC-PENT-X47A	SPARE	0.35	0.0	NA	NA	0.1	JAS 6/28/94	
X-47C ~~X-47B~~	PC-V-272 JAS 6/28/94 X47C PC-PENT-X47A	SPARE	0.35	0.0	NA	NA	0.1	JAS 6/28/94	

* If determined.

** Denotes bolted double gasket seal or testable gasket.

*** Denotes testable expansion bellows.

TABLE 2 - TYPE B PENETRATION LLRT TESTS

PENETRATION NUMBER	CIC	PENETRATION DESCRIPTION	VOLUME cc'	AS FOUND LEAKAGE scfh	OUTBD/INBD LEAKAGE scfh*	AS LEFT LEAKAGE scfh	ALLOWABLE LIMITS scfh	INITIAL/ DATE	
X-47D	PC-V-273 PC-PNT-X47D	SPARE	0.35	0.0	NA	NA	0.1	[illegible] 6/22/94	TPCN 94-150
X-47F	PC-V-275 PC-PNT-X47F	SPARE	0.35	0.0	NA	NA	0.1	JAS 6/22/94	TPCN 94-150
~~X-47B~~ X-47E JAS 6/22/94 ~~X-48B~~	PC-V-274 2nd Check PC-PNT-X47E	SPARE	0.35	0.0	NA	NA	0.1	JAS 6/28/94	TPCN 94-150
X-100B	PC-V-230 PC-PNT-X100B	SPARE	0.35	0.0	NA	NA	0.1	JAS 6/28/94	TPCN 94-156
X-229A	IA-V-339	AIR TO NRV-20	0.5	0.08	NA	NA	0.25	JAS 6/22/94	TPCN 94-150
X-229B	IA-V-341	AIR TO NRV-21	0.5	0.08	NA	NA	0.25	JAS 6/28/94	
X-229C	IA-V-343	AIR TO NRV-23	0.5	0.16	NA	NA	0.25	JAS 6/28/94	
X-229D	IA-V-345	AIR TO NRV-23	0.5	0.08	NA	NA	0.25	JAS 6/28/94	
X-229C	IA-V-347	AIR TO NRV-24	0.5	0.08	NA	NA	0.25	JAS 6/28/94	
X-229F	IA-V-349	AIR TO NRV-25	0.5	0.16	NA	NA	0.25	JAS 6/28/94	
X-229G	IA-V-351	AIR TO NRV-26	0.5	0.16	NA	NA	0.25	JAS 6/28/94	

* If determined.
** Denotes bolted double gasket seal or testable gasket.
*** Denotes testable expansion bellows.

TABLE 2 - TYPE B PENETRATION LIRT TESTS

PENETRATION NUMBER	CIG	PENETRATION DESCRIPTION	VOLUME ft³	AS FOUND LEAKAGE scfh	OUTBD/INBD LEAKAGE scfh*	AS LEFT LEAKAGE scfh	ALLOWABLE LIMITS scfh	INITIAL/ DATE
X-229H	IA-V-353	AIR TO NRV-27	0.5	0.08	NA	NA	0.25	JMS 6/28/94
X-229J	IA-V-355	AIR TO NRV-28	0.5	0.08	NA	NA	0.25	JMS 6/28/94
X-229K	IA-V-357	AIR TO NRV-29	0.5	0.08	NA	NA	0.25	JMS 6/28/94
X-229L	IA-V-361	AIR TO NRV-30	0.5	0.16	NA	NA	0.25	JMS 6/28/94
X-40A	PC-PS-12A	DW INSTRUMENTATION	0.35	0.034	NA	0.034	0.1	JMS 7/10/94
X-40B	PC-PS-12B	DW INSTRUMENTATION	0.35	0.102	NA	0.102	0.1	JMS 7/10/94
X-40C	PC-PS-12C	DW INSTRUMENTATION	0.35	0.0	NA	0.0	0.1	JMS 7/10/94
X-40D	PC-PS-12D	DW INSTRUMENTATION	0.35	0.0	NA	0.0	0.1	JMS 7/10/94
X-40A	PC-PS-101A	DW INSTRUMENTATION	0.35	0.47	NA	0.47	0.1	JMS 7/10/94
X-40B	PC-PS-101B	DW INSTRUMENTATION	0.35	0.27 ~~2.7~~ SCFH	NA	0.27 ~~2.7~~ SCFH	0.1	JMS 7/10/94
X-40C	PC-PS-101C	DW INSTRUMENTATION	0.35	0.068	NA	0.068	0.1	JMS 7/10/94

TPCN 94-190

TPCN 94-161

* If determined.
** Denotes bolted double gasket seal or testable gasket.
*** Denotes testable expansion bellows.

TABLE 2 - TYPE B PENETRATION LLRT TESTS

PENETRATION NUMBER	G.I.C.	PENETRATION DESCRIPTION	VOLUME ft³	AS FOUND LEAKAGE scfh	GITBD/IHBD LEAKAGE scfh*	AS LEFT LEAKAGE scfh	ALLOWABLE LIMITS scfh	INITIAL/ DATE
X-40D	PC-PS-1010	DW INSTRUMENTATION	0.35	0.34	NA	0.34	0.1	JAS 7/10/94
X-40C ~~X-40A~~	PC-PS-1170	DW INSTRUMENTATION	0.35	0.1	NA	0.1	0.1	JAS 7/10/94
X-40B	PC-PS-119A	DW INSTRUMENTATION	0.35	3.24	NA	0.0	0.1	JAS 7/10/94
X-40E	PC-PS-119C	DW INSTRUMENTATION	0.35	1.21	NA	0.0	0.1	JAS 7/10/94
X-40D ~~X-40A~~	PC-PS-119B	DW INSTRUMENTATION	0.35	0.0	NA	0.0	0.1	JAS 7/10/94
X-40H	PC-PS-16	DW INSTRUMENTATION	0.35	0.068	NA	0.068	0.1	JAS 7/10/94
X-40A	PC-PT-512A	DW INSTRUMENTATION	0.35	0.0	NA	0.0	0.1	JAS 7/10/94
X-40C	PC-PT-512B	DW INSTRUMENTATION	0.35	0.0	NA	0.0	0.1	JAS 7/10/94
X-229M	PC-PNT-X229M	SPARE	0.35	0.0	NA	NA	0.1	JAS 7/7/94

TPCN 94-161

TPCN 94-161

* If determined.

** Denotes bolted double gasket seal or testable gasket.

*** Denotes testable expansion bellows.

ATTACHMENT 5	PRIMARY CONTAINMENT LLRT TEST RESULTS

PENETRATION NUMBER	CIC	PENETRATION DESCRIPTION	VOLUME ft³	AS FOUND LEAKAGE scfh	OUTBD/INBD LEAKAGE scfh*	AS LEFT LEAKAGE scfh	ALLOWABLE LIMITS scfh	INITIAL/ DATE	
X-214**	RHR-FLG-19RV	Testable Flange	0.25	0.0	NA	0.0	≤ 0.1	JAS 6/21/94	TBLW 94-132
X-214**	RHR-FLG-20RV	Testable Flange	0.25	0.0	NA	0.0	≤ 0.1	JAS 6/21/94 JAS 6/20/94	TBLW 94-1 WCW 94-96
X-214**	RHR-FLG-21RV	Testable Flange	0.25	0.0	NA	0.0	≤ 0.1	JAS 6/21/94	TBLW 94-1
X-227A**	CS-FLG-10RV	Testable Flange	0.25				≤ 0.1		
X-223A**	CS-FLG-11RV	Testable Flange	0.25				≤ 0.1		
X-227B**	CS-FLG-12RV	Testable Flange	0.25				≤ 0.1		
X-223B**	CS-FLG-13RV	Testable Flange	0.25				≤ 0.1		
X-213A**	PC-FLG-DL1	Testable Flange	0.25				≤ 0.1		
X-213A**	PC-FLG-DL2	Testable Flange	0.25				≤ 0.1		

* If determined.
** Denotes bolted double gasket seals or testable flanges.
*** Denotes testable expansion bellows.

IST Engineer Review (Table 1 only): _____ Date: _____

LLRT Engineer Review: _____ Date: _____

GENERAL ELECTRIC

ATOMIC POWER EQUIPMENT DEPARTMENT

No. 22A1153, Rev. 1

File Index No. 0052/54

F.P.C. Reference No. ____

Project STANDARDS

DESIGN SPECIFICATION

22A1153, Rev. 1 — CONT'D ON SHEET 3 — AMD NO. 2

TITLE CODES AND INDUSTRIAL STANDARD - APPENDIX

SCHEDULE A (SEE NOTE 5)

Item	Description	Codes and Standards
1	Reactor Pressure Vessel	ASME Section III, Class A
2	In-Core Ion Chamber Pressure Parts	ASME Section III, Class A
3	Control Rod Drive Pressure Parts	ASME Section III, Class A
4	Control Rod Drive Hydraulic System	
	Pump Casing	ASME Section VIII, (See Note 2)
	Accumulators	ASME Section VIII
5	Reactor Water Recirculation System	
	Pump Casing	ASME Section III, Class C (See Note 2)
6	Residual Heat Removal System	
	Heat Exchangers	ASME Section III, Class C & TEMA, Class C
	Pump Casing	ASME Section III, Class C (See Note 2)
7	Standby Liquid Control System	
	Pump Casing	ASME Section III, Class C (See Note 2)
8	Core Spray System	
	Pump Casing	ASME Section III, Class C (See Note 2)
9	Reactor Core Isolation Cooling System (RCIC)	
	Pump Casing	ASME Section III, Class C (See Note 2)
	Turbine Casing	NEMA Standards for Mechanical Drive Steam Turbine

(Refer to Sheet 5 for Notes)

TITLE CODES AND INDUSTRIAL STANDARD

1.0 SCOPE

1.1 This document specifies the Codes and Industrial Standards applicable to (a) the systems and items of equipment which make up the nuclear boiler system and (b) components related to the nuclear boiler system of a boiling water type nuclear power plant.

1.2 The Codes and Industrial Standards listed are those which apply. They may be supplemented to satisfy the requirements of the application. This supplementing information will be specified by design, purchasing or installation specifications issued by the General Electric Company.

1.3 Reference should be made to any drawings or specifications issued by the General Electric Company as being applicable to the specific project for the items included herein. Where differences exist between this standard design specification and the requirements of the above mentioned documents, the project documents shall be used.

1.4 This design specification was prepared based upon no specific division of work assignment or responsibility between the General Electric Company and its customers or contractors. The division of work assignment shall be specified elsewhere.

2.0 OBJECTIVE

The objective is to conform with the requirements of the various regulatory bodies having jurisdiction at the site of the nuclear power plant. It is a further objective to establish the Codes and Industrial Standards which best meet the level of quality and assurance consistent with the nature of the application of the system or item of equipment included herein.

3.0 REQUIREMENTS

3.1 Unless otherwise specified, the design of lines, systems and equipment and their subsequent fabrication and installation, shall be in accordance with the Standards and Industrial Codes specified in the Appendix.

3.2 Items of piping and equipment which are not within the scope of the nuclear boiler systems and not listed in the Appendix shall be designed, fabricated and installed in accordance with the standard codes which apply.

GENERAL ELECTRIC
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Project STANDARD

DESIGN SPECIFICATION

22A1153, Revision 1
CONT'D ON SHEET FINAL SPEC NO. 6

TITLE CODES AND INDUSTRIAL STANDARD - APPENDIX

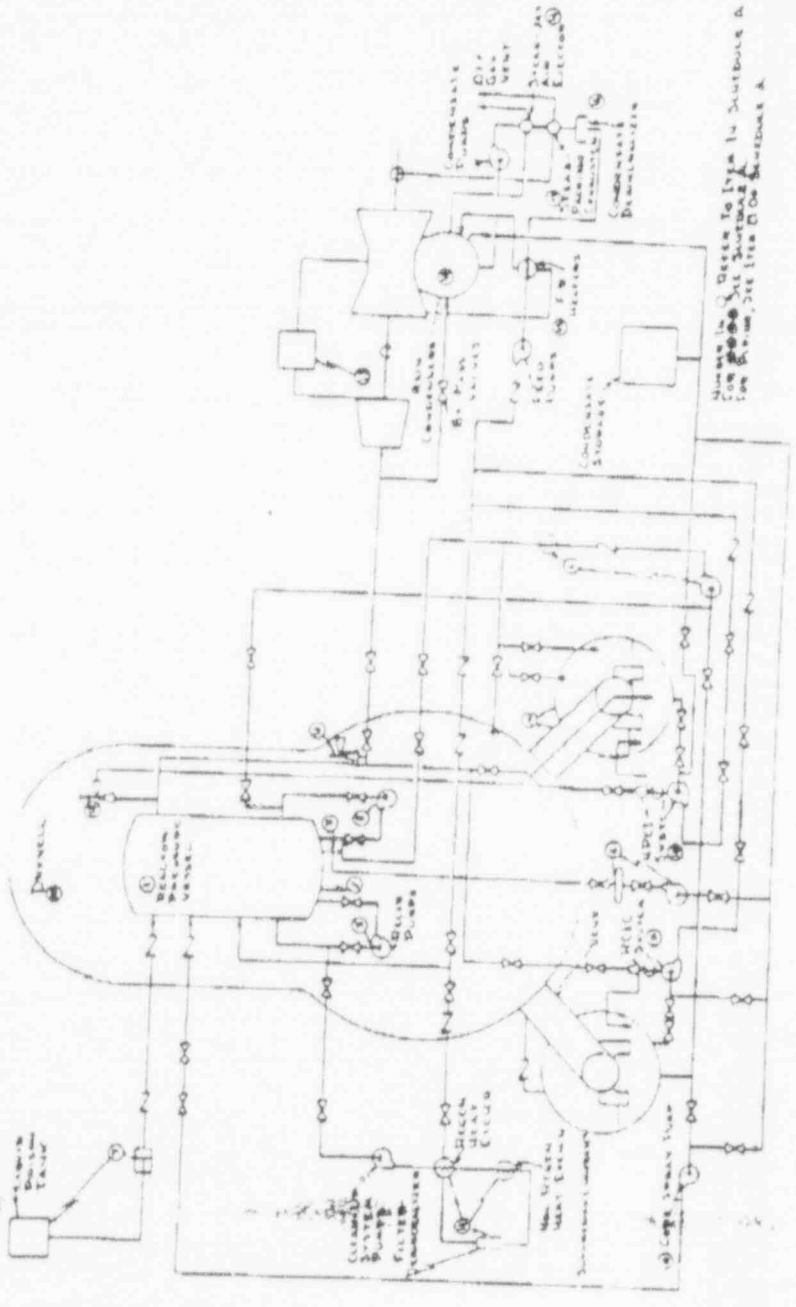

FIGURE 1
(ILLUSTRATION OF CODE APPLICATION ONLY)

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SPEC NO. 22A1153, Rev. 1
CONT'D ON SHEET FINAL SPEC. NO. 6

GENERAL ELECTRIC

ATOMIC POWER EQUIPMENT DEPARTMENT

No. 22A1153, Rev. 1

File Index No. 0052/54

F.P.C. Reference No.

Project STANDARD

DESIGN SPECIFICATION

22A1153, Rev. 1

TITLE CODES AND INDUSTRIAL STANDARD - APPENDIX

SCHEDULE A (CONTINUED)

Item	Description	Codes and Standards
21	Piping (Unless otherwise noted such as items 15 and 20)	ASA B31.1 (See Note 1)
22	Filters (Except Item 11)	ASME Section VIII

NOTES

1 - American Standards Association Specification B31.1 shall be supplemented by General Electric Company design, purchasing or installation specifications, where applicable, based upon the specific requirements for the specific system involved and/or the requirements of local agencies having jurisdiction at the plant site location.

2 - Pump casings shall be designed to requirements of specified code. They are not required to be stamped. (Pumps are classified as machinery and therefore, are outside the scope of the code)

3 - Piping, which is an integral part of the primary containment for isolation purposes, shall have at least the same quality and levels of assurance as the primary containment.

4 - Applicable for plants employing deep-bed demineralizers in lieu of Filter-Demineralizers (Powdex).

5 - SEE FIGURE 1 for illustration of systems and equipment included herein. See Paragraph 1.3.

DISTRIBUTION

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ATOMIC POWER EQUIPMENT DEPARTMENT

No. 22A1153, Rev. 1
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Project STANDARD

DESIGN SPECIFICATION

22A1153, Rev. 1 SH NO 5 CONT ON SHEET

TITLE CODES AND INDUSTRIAL STANDARD - APPENDIX

SCHEDULE A (CONTINUED)

Item	Description	Codes and Standards
15	Feedwater System	
	Heaters (including drain coolers)	ASME Section VIII & Feedwater Heaters Manufactures Association Standards
	Piping from the Reactor Pressure Vessel thru first Shut-Off Valve	ASA B31.1 and ASME Section I Paragraph PG-58 (3) (See Note 1)
16	Condensate Filter-Demineralizer	
	Pressurized Tanks	ASME Section VIII
	Filters (See Note 4)	ASME Section VIII
17	Closed Loop Cooling System - Reactor Building	
	Heat Exchanger	ASME Section VIII
18	Fuel Pool Cooling & Filtering Systems	
	Pump Casing	ASME Section VIII (See Note 2)
	Heat Exchanger	ASME Section VIII
19	Radioactive Waste Disposal System	
	Waste System Pressure Vessels	ASME Section VIII
20	Primary Containment	
	Containment Vessel (including dry-well, wetwell, and interconnecting piping)	ASME Section III, Class B
	Containment Vacuum Breakers	ASME Section III, Class B and ASA B31.1
	Containment Auxiliary Process Piping	ASA B31.1 (See Note 3)
	Containment Penetrations	ASME Section III, Class B

(Refer to Sheet 5 for Notes)

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GENERAL ELECTRIC
ATOMIC POWER EQUIPMENT DEPARTMENT

No. 22A1153, Rev. 1
File Index No 0052/54
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Project STANDARD

DESIGN SPECIFICATION

22A1153, Rev. 1 CONT ON SHEET 4 SH NO. 3

TITLE CODES AND INDUSTRIAL STANDARD - APPENDIX

SCHEDULE A (CONTINUED)

Item	Description	Codes and Standards
10	High Pressure Cooling Injection System (HPCI)	
	Pump Casing	ASME Section III, Class C (See Note 2)
	Turbine Casing	NEMA Standards for Mechanical Drive Steam Turbine
11	Reactor Water Clean-Up System	
	Regenerative Heat Exchangers	ASME Section III, Class C
	Non-Regenerative Heat Exchangers	
	Primary Side	ASME Section III, Class C
	Secondary Side (Cooling Water Side)	ASME Section VIII
	Pressurized Tanks (Filter-Demineralizers or Deep-Bed Demineralizers as applicable)	ASME Section III, Class C
	Filters (See Note 4)	ASME Section III, Class C
12	Primary Steam System	
	Safety Valves	ASME Section III, Article 9
13	Turbine	
	Turbine External Moisture Separator	ASME Section VIII
♦	Steam Packing Exhauster Condenser	Heat Exchanger Institute
14	Main Condenser	Heat Exchanger Institute
	Steam Jet Air Ejector	Heat Exchanger Institute
	Inter and After Condensers	Heat Exchanger Institute
	Off Gas Piping	ASA B31.1 & Code Case N-12 (See Note 1)

(Refer to Sheet 5 for Notes)

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NO. 22A1153, Rev. 1
CONT. ON SHEET 4 SHT. NO. 3

♦ Changed

RF

Nebraska Public Power District

GENERAL OFFICE
COLUMBUS, NEBRASKA

October 30, 1978

Director, Nuclear Reactor Regulation
Attention: Mr. Thomas A. Ippolito, Chief
Operating Reactors Branch No. 3
Division of Operating Reactors
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Appendix J Exemption Request/Additional Information
Cooper Nuclear Station
NRC Docket No. 50-298, DPR-46

Dear Mr. Ippolito:

A letter dated September 16, 1977 from V. Stello to the Nebraska Public Power District transmitted Amendment 38 to the Facility Operating License for Cooper Nuclear Station. This amendment consisted of changes to the Technical Specifications relating to exemptions from the requirements of 10 CFR Part 50, Appendix J. Originally NPPD had requested five exemptions of which three were found acceptable to the Commission. This letter provides additional information relating to the two exemptions which were not acceptable.

Exemption 1: "The personnel airlock door would be tested at intervals no longer than one year at 58 psig (Pa) and at 3 psig after each opening during the one year interval between the 58 psig tests."

In Mr. Stello's letter of September 16, 1977, the following additional information was requested:

1. Acceptance criteria for the reduced pressure tests which correlate the personnel airlock leakage rate at 3 psig to the leakage rate which would be expected at 58 psig.

2. Acceptance criteria which relates bellows leakage rate at 5 psig test pressure to the leakage rate which would be experienced at 58 psig pressure.

The acceptance criteria for both the personnel airlock and bellows leakages are taken from ASME Section XI, Winter 1976 Addendum, Article IWV-3000 "Test Procedures", paragraph IWV-3420 which states:

> "When leakage tests are made in such cases using pressures lower than function maximum pressure differential, the observed leakage shall be adjusted to function maximum pressure differential value by calculation appropriate to the test media and the ratio between test and function pressure differential assuming leakage to be directly proportional to the pressure differential to the one-half power."

In our letter of September 10, 1975 to Mr. K. R. Goller, NPPD requested an exemption to allow conducting the airlock integrated leak tests at one year intervals rather than at the 6 months intervals required by Appendix J. The Staff's safety evaluation transmitted September 16, 1977 stated that insufficient justification was provided by NPPD in support of a yearly test interval. Although our September 10 letter stated that the airlock would be tested at 58 psig yearly, and at 3 psig after each opening, we neglected to specify that the containment airlocks would be leak tested at least every 6 months at 3 psig. The justification for not performing the 6 month test at the full pressure of 58 psig remains as stated in our September 10, 1975 letter. No changes are contemplated from the existing testing requirements.

Exemption 2: "The feedwater check valves would be tested with water rather than air or nitrogen."

In our letter of September 10, 1975, we also requested an exemption from Appendix J requirements so that Cooper Nuclear Station could continue to leak test the feedwater check valves using water rather than air or nitrogen. In the Commission's letter of February 17, 1977, NPPD was requested to demonstrate that the feedwater check valves would remain filled with water during and after a postulated loss of coolant accident and that the fission products intrained in the liquid leakage would not result in additional radiological dose such that the total accident dose would exceed 10 CFR Part 100 guidelines. Enclosed please find the results of an analysis performed to demonstrate the above.

Should you have any questions or require additional information, please contact me.

In addition to one signed original, 39 copies are also submitted for your use.

Sincerely yours,

Jay M. Pilant
Director of Licensing
and Quality Assurance

JMP/jw:srr24/8
Enclosure

STATE OF NEBRASKA)
) ss
PLATTE COUNTY)

Jay M. Pilant, being first duly sworn, deposes and says that he is an authorized representative of the Nebraska Public Power District, a public corporation and political subdivision of the State of Nebraska; that he is duly authorized to submit this information on behalf of Nebraska Public Power District; and that the statements in said application are true to the best of his knowledge and belief.

Jay M. Pilant

Subscribed in my presence and sworn to before me this 30th day of October, 1978.

Marilyn R. Hohndorf
NOTARY PUBLIC

My Commission expires Oct. 14, 1980

[illegible] - State of Colorado
MARILYN R. HOHNDORF
[illegible] My Comm. Exp. Oct. 14, 1980

Nebraska Public Power District

COOPER NUCLEAR STATION
P.O. BOX 98, BROWNVILLE, NEBRASKA 68321
TELEPHONE (402)825-3811
FAX (402)825-5211

CNSS948204

July 5, 1994

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Dear Sir:

Cooper Nuclear Station Licensee Event Report 94-011, is forwarded as an attachment to this letter.

Sincerely,

R. L. Gardner
Plant Manager

RLG/nc

Attachment

cc: L. J. Callan
G. R. Horn
J. M. Meacham
R. E. Wilbur
V. L. Wolstenholm
D. A. Whitman
INPO Records Center
NRC Resident Inspector
R. J. Singer
CNS Training
CNS Quality Assurance

9407130080

NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001 AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
COOPER NUCLEAR STATION	05000298	1 OF 4

TITLE (4) Primary Containment Penetration Design and Testing Deficiencies Discovered During Design Basis Reconstitution Activities

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
06	02	94	94	-- 011 --	00	07	05	94		05000
									FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)					
POWER LEVEL (10)	0	20.402(b)		20.405(c)		50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)	OTHER
		20.405(a)(1)(iii)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)	(Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iv)	X	50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Donald L. Reeves, Jr.	(402) 825-3811

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
X	YES (If yes, complete EXPECTED SUBMISSION DATE).		NO		09	02	94

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On June 2, Primary Containment penetration X-218 was inspected and determined to not be in compliance with design requirements and not subject to leak rate testing (LLRT) as required by 10CFR50 Appendix J. A similar deficiency was found with penetration X-209 on June 6. These deficiencies were discovered during a walkdown of all primary containment penetrations as part of the validation effort for the design basis reconstitution of the Primary Containment (PC) System. Due to their discovery, on June 7, the Primary Containment System was declared inoperable. An investigative team formed to establish the extent of the problem and identify corrective actions to resolve the concerns identified approximately 100 potentially affected penetrations. When these deficiencies were discovered, the plant was in Cold Shutdown and Primary Containment Integrity was not required.

The root causes of this condition are under investigation and will be specified in a supplement to this LER. Corrective actions to identify and resolve these concerns are being aggressively pursued. These actions include resolving valid configuration and 10CFR50 Appendix J problems, reviewing containment penetration configurations to ensure that the safety functions specified in the safety analysis can be provided and reviewing open documented problems associated with the Primary Containment System to ensure that additional operability concerns do not exist. Prior to startup from the current unscheduled outage, these primary containment design basis issues will be resolved.

A. Event Description

On May 18, 1994, a walkdown of all primary containment penetrations was initiated as part of the validation effort for the design basis reconstitution of the Primary Containment (PC) System. The schedule for this effort had been accelerated in response to a commitment made in response to NRC Inspection Report 93-17, Violation II.C, wherein the District stated that, "a detailed review of all containment penetrations and their associated Appendix J testing requirements will be performed during the next operating cycle and necessary changes, if any, implemented prior to startup from the next refueling outage." Containment penetrations were to be inspected, validated to existing configuration documents, and compared to existing design requirements. On June 2, with the plant in Cold Shutdown, an inspection of penetration X-218 determined that what was shown on the configuration document as a spare penetration (pipe with a welded cap) was actually an electrical penetration with a gasketed valve and an elastomeric compound seal. It was also determined that penetration X-218 had not been local leak rate tested (LLRT) as required by 10CFR50 Appendix J. On June 6, penetration X-209, an electrical penetration of similar configuration, was also determined to be an unqualified barrier.

Based on these two deficiencies, and additional indications from the walkdown team that more penetrations would be affected, the Primary Containment system was declared inoperable on June 7, 1994, at 12:15 pm. An investigative team was formed to establish the extent of the problem, identify corrective actions required to restore system operability, and perform a formal root cause investigation. By June 11, approximately 100 penetration concerns were identified by the walkdown and associated design basis reconstitution effort.

B. Plant Status

These deficiencies were discovered while the plant was in Cold Shutdown for an unrelated concern. At the time of discovery, Primary Containment integrity was not required.

C. Basis for Report

Non-qualified primary containment penetration installations, reportable in accordance with 10CFR50.73(a)(2)(ii) as a condition that resulted in the plant being outside of its design basis. Due to the failure to properly identify and perform testing in accordance with Appendix J requirements, this condition is also reportable in accordance with 10CFR50.73(a)(2)(i) as a condition prohibited by Technical Specifications.

D. Cause

The root causes of this condition will be specified in a supplement to this LER.

E. Safety Significance

Chapter 7 of the USAR specifies that primary containment penetrations are to have the following design characteristics:

1) Designed for the same pressure and temperature conditions as the Drywell and Suppression Chamber,

2) Capable of withstanding the forces caused by impingement of the fluid from the rupture of the largest local pipe or connection without failure,

3) Capable of accommodating, without failure, the thermal and mechanical stresses which may be encountered during all modes of operation, including environmental events, and

4) Capable of withstanding the maximum reaction that the pipe to which they are attached is capable of exerting.

While the majority of the penetrations discovered to not comply with design requirements have been subjected to and successfully tested to design pressure during primary containment ILRT, last performed in 1991, their capability to meet the above stated design characteristics has not been directly demonstrated.

Several piping system penetration boundaries, either open to the primary containment atmosphere or installed in piping systems that penetrate primary containment, were discovered to never have been tested by LLRT or as a boundary during the ILRT. Subsequent testing of the Drywell Pneumatic Supply Check Valve in penetration X22, IA-CV-65CV, one such piping system penetration boundary, revealed that it could not be pressurized. Consequently, several of the safety design bases specified in the USAR for Primary Containment were not assured.

F. Safety Implications

Upon discovery of these conditions, the plant was in Cold Shutdown and Primary Containment Integrity was not being (and was not required to be) maintained. The safety implications of these conditions would be most significant following a design basis accident from 100 percent power.

G. Corrective Action

The following actions are being aggressively pursued to address the deficiencies noted:

1. Resolve primary containment penetration configuration and 10CFR50 Appendix J problems through design changes and testing to ensure compliance to the design/licensing basis and 10CFR50 Appendix J requirements.

2. Review containment penetration configurations to ensure that the safety functions specified in the safety analysis can be provided by the as-built penetrations or that technically sound interim solutions are provided until permanent solutions can be implemented.

3. Review the Primary Containment Isolation System to ensure that the safety functions as specified in the safety analysis are provided.

4. Review unresolved issues associated with the Primary Containment System to ensure that additional operability concerns do not exist.

5. Review the ILRT and LLRT Procedures for test methodology and completeness and accuracy of the test boundary.

6. Review the safety classification of components within the containment boundary.

7. Review the code classification of containment penetrations.

Further information regarding the safety significance of the configuration problems and 10CFR50 Appendix J compliance issues pertinent to the identified discrepancies and corrective actions taken to assure compliance to these requirements will be reported in a supplement to this LER. Prior to startup from the current unscheduled outage, these primary containment design basis issues will be resolved.

H. Similar Events

Programmatic concerns associated with Primary Containment penetrations and Appendix J requirements that have recently been reported include:

LER 93-019 Nonconservative Testing Methodology Discovered During Local Leak Rate Testing

LER 93-020 Hydrogen/Oxygen Monitors Not Subjected to Primary Containment Testing Requirements

COOPER NUCLEAR STATION

STARTUP PLAN

REVISION 1

APPROVED BY:

Plant Manager — Date: 9/15/94

Site Manager — Date: 9/15/94

COOPER NUCLEAR STATION

PERFORMANCE IMPROVEMENT PLANS

PHASE 1: STARTUP PLAN

Table of Contents

I. Purpose

Cooper Nuclear Station has embarked on a performance improvement program. This program addresses the actions that management will take to establish the organizational and management capabilities necessary to achieve required levels of performance improvement.

Management previously identified certain critical success factors in improving organizational performance and is taking action to address these. These actions include such areas as:

- Recruit new managers who bring leadership skills and have higher standards and expectations for performance. Make appropriate organizational adjustments including reassignment or augmentation of resources to address immediate needs to support startup or correct significant program or process deficiencies.
- Assess and realign the capability of the organization to identify and resolve problems that may challenge safe and reliable operations.
- Improve critical work processes and develop a transition for longer-term improvements.

The recent forced outage, NRC enforcement actions and Diagnostic Self Assessment Team (DSAT) evaluation provided management with a set of performance issues to address that relate to material condition items, program and process findings, and management issues. There are also other performance issues identified from the Confirmatory Action Letter (CAL), inspection reports, and management self-identified issues, including those issues addressed in the Integrated Enhancement Plan (IEP).

To assure that all performance issues are identified and adequately addressed, a comprehensive planning process and framework was developed to guide the performance improvement efforts at CNS. This framework consists of three phases:

1. Phase 1 (Startup Plan) - This phase is the tactical planning process that addresses those significant issues identified in the DSAT, the CAL and open inspection report items, and management self-identified issues that must be resolved prior to plant startup.

2. Phase 2 (Short-Term Plan) - This phase involves those essential management actions that will be accomplished within the next two to three months. Because this phase is of short duration, only a few, high-priority issues will be addressed. These issues are important to the station's near-term success and are of such a nature as to require expeditious action.

3. Phase 3 (Long-Term Plan) - This phase is the long-term strategic planning phase. It provides the framework for managing the performance improvement actions essential in meeting long-term objectives for safety, production and economics. This phase is anticipated to include planning cycles from one to several years in duration.

The objective of the Phase 1 planning process is to identify all significant issues that must be resolved prior to the startup of the station to assure a safe, error-free startup and a subsequent period of safe and reliable operations. This document is the Phase 1 Plan and provides the framework for activities necessary for plant restart. The plan discusses, where appropriate, relationships with the subsequent two planning phases.

II. Phase 1 Scope

NPG management established a Startup Plan Team of senior managers who were assigned the responsibility to develop a comprehensive and effective startup plan. The Team's charter was to (1) establish an integrated approach for completing work activities for startup and (2) identify management, program, and process initiatives to assure an error-free startup and subsequent period of safe and reliable operations.

Actions necessary to implement an effective Startup Plan include clearly communicating management expectations. These expectations are included in the improvement initiatives and address important organizational performance measures, such as adherence to procedures and other work rules, identification and resolution of problems, and reduction in work backlogs. The startup plan also addresses other performance improvements that are necessary to achieve the objective of a safe and error-free startup and a subsequent period of safe and reliable operations. The actions and performance improvements include:

- Communicate the startup plan throughout the organization, and assign responsibility and accountability for the action plans.

- Set startup goals to define when the plant is ready for restart, including
  - Root causes are understood and appropriate startup actions are defined.
  - Maintenance, engineering and other material condition backlogs are adequately resolved.
  - Specific completion activities and initiatives (e.g., management and organizational changes and startup action plans) are completed.
- Establish an integrated schedule to complete the actions necessary for restart.

As a part of developing the Startup Plan, the Team also addressed plant startup preparation and planning. The Startup and Power Ascension Plan addresses restoring the plant to power operation, including dedicated management, augmented management structure and responsibilities, and special testing evolutions.

In addition, an assessment of the effectiveness of the completed action plans and an independent review of plant readiness for restart has been included, which addresses:

- System walkdown by teams with participation from Operations, Maintenance, System Engineering and Design Engineering to confirm system acceptance for startup and satisfactory identification of all open issues.
- Independent verification by QA that the necessary startup plan actions have been satisfactorily completed.
- Assessments of performance during startup by QA.
- Assessment and review by the SRAB of the startup plan adequacy and effectiveness of the plan results.

The startup planning process provided a comprehensive evaluation to assure that all significant issues for startup were identified. These issues stem from three broad areas as follows:

1. DSAT Open Items - Hardware, program and process, and management issues that result from a thorough evaluation of the DSAT report. The DSAT report was used as the framework to identify and categorize the remaining issues discussed below.

2. CAL items and open inspection report items. The CAL and responses were evaluated to identify all appropriate issues for resolution, and open inspection and enforcement documents were reviewed.

3. Self-Identified Issues - Open management and organizational performance issues and material condition items management is tracking for resolution prior to plant startup.

Cumulatively, the three planning phases, startup, short- and long-term, are intended to correct the root causes of the performance decline at Cooper Nuclear Station, which are described in the DSAT report. However, each of the root causes may not be fully corrected prior to plant startup, since the startup plan is structured to address corrective actions in a logical and prioritized basis. Those issues important to startup are the first issues to be resolved. Concurrent with the startup process, management will prepare and subsequently implement a short-term plan to address high-priority issues, followed by a long-term improvement plan.

Content of the Plan

The Startup Plan has been structured to address those items essential to restart the plant. The plan's content is as follows:

- Program and Process changes that are reflected in appropriate action plans.
- Management issues to be corrected (these are contained in associated program and process categories and action plans).
- A Startup Plan Action Item List that contains those open items that must be further reviewed to determine if any additional actions are required for startup. (Appendix A).
- Material Condition. (Appendix B).

III. Identification of Restart Actions

The process to identify and resolve the startup issues consisted of: (1) Issue Identification, (2) Issue Screening Evaluation, and (3) Issue Disposition. The potential effects of all known issues on safe plant startup and continued operations were evaluated to pre-established startup criteria. The issues were then dispositioned for resolution prior to plant startup, or the issue was deferred for future planning, resolution and closure. The characterization of each part is as follows:

Issue Identification

Issue Identification involved a review of CAL items and the responses, open inspection report items, DSAT issues, and self-identified issues. Identification of issues was coordinated by a team of senior managers and outside consultants (the Startup Plan Team) that provided assurance that all relevant issues were identified.

Once the complete set of issues was identified, the Team segregated them into either hardware issues or program and process issues. The program and process issues were further assigned to specific categories to allow more effective evaluation and to provide the ability to evaluate the significance of the issues as they related to the overall effectiveness of programs and processes at the station. The resulting categories are as follows:

1. Independent Oversight and Self Assessment - roles and responsibility of SRAB, SORC, QA and QC and organizational self assessment.
2. Corrective Action Program, Planning and Performance Monitoring - problem identification, root-cause analysis, planning and issue resolution, performance monitoring and follow-up.
3. Work control - identification, tracking, planning and scheduling.
4. Design Control and Configuration Management - plant design change control, clearance program, valve lineups, and drawing control.
5. Engineering Support - roles, responsibilities, and support to operations and maintenance.
6. Plant Testing - IST, surveillance, post-maintenance testing, and preconditioning.
7. Operational Experience Review (OER).
8. Procedural Control - technical quality, procedure changes, and procedure adherence.
9. Additional Management Issues - issues that are not specifically addressed in individual program and process categories.

Issue Screening Evaluation

Once categorized, the issues were evaluated to determine if they should be resolved prior to station startup or carried forward for the short-term or long-term planning phases. The issue screening evaluation process provided a structured method to assure each issue was addressed appropriately.

The issue screening evaluation was performed in two levels to pre-established criteria. This allowed station management to focus on those issues that were clearly important to plant restart, yet assure that all issues were captured for future resolution.

Level 1 Screening Evaluation - Issues were evaluated to identify potential safety or operability concerns. These issues were automatically designated as requiring resolution prior to plant startup.

Level 2 Screening Evaluation - The second level evaluation characterized the remaining issues to determine if they should be resolved prior to startup. The following criteria were used:

1. An event, component failure, deficiency or condition that could result in operation in an LCO Action Statement.

2. Failing to perform a required surveillance test or other license requirement or meet a commitment to an outside agency.

3. Failure of power production equipment that could result in a plant transient, derate, or plant shutdown.

4. Conditions that have resulted in repetitive safety system equipment failures.

5. Potential licensing-basis deficiencies requiring maintenance to restore to conforming conditions, i.e., deficiencies in safety-related or other qualified equipment (e.g., EQ, Appendix R, or seismic).

6. Potential design basis deficiencies, i.e., deficiencies in safety related equipment or other Technical Specification equipment not in conformance with the USAR.

7. Deficiencies in configuration management programs, processes, engineering analysis codes, or documentation that have, or could have, a reasonable probability of affecting equipment operability.

8. Conditions that may create an unacceptable potential for an unplanned radioactivity release to the environment or discharge of effluent in excess of limits.

In addition, the Team also assessed each of the program and process areas in an integrated manner, such that the cumulative effects of the individual deficiencies within each area were assessed. This resulted in a reexamination of program and process areas to assure that all startup issues were identified.

It should be noted that many management-related improvements were included as integral parts of the action plans. For example, improvements in management oversight are captured in Independent Oversight and Self Assessment. The category of Additional Management captures those issues that are not specific to other program or process areas. Additionally, since the common element of all identified root causes is management-related, Section VI, *Results of the Planning Process*, provides a description of startup improvement initiatives from all of the categories as they relate to management.

Issue Disposition

Issue Disposition assured that items that were identified as requiring resolution prior to plant startup are appropriately tracked in existing administrative systems until closed. The Plan contains a performance monitoring action plan that will review the effects of work backlogs on station operation and confirm acceptability for startup.

Following the completion of this part of the plan, the results were independently reviewed by the NPG Industry Advisory Group to assure the acceptability of the results.

IV. Development of the Phase 1 Plan

Categorization Of Issues

As described in the *Scope* section to this plan, the startup planning process included a comprehensive evaluation of three broad input sources to assure that all significant issues for startup were identified. These sources included:

1. DSAT Observations and Findings - Hardware, program and process, and management issues that resulted from a thorough evaluation of the DSAT report.
2. CAL items and open inspection report items.
3. Self-Identified Issues - Hardware and other issues that management is tracking for resolution prior to plant startup.

The manner in which each of the inputs was factored into the plan is described below:

DSAT Observations and Findings

The DSAT report identified a number of program and process areas that were combined with other areas by the Startup Planning Team into the nine program and process areas listed below. The hardware-related issues were independently reviewed for inclusion into the startup plan. DSAT observations and findings were reviewed against the startup plan criteria, and placed into these nine categories:

1. Independent Oversight and Self Assessment
2. Corrective Action Program
3. Work control
4. Design Control and Configuration Management
5. Engineering Support
6. Plant Testing
7. Operational Experience Review
8. Procedural Control
9. Additional Management Issues

The program and process areas were then expanded to include specific areas to define performance improvement necessary for startup from CAL, open NRC inspection items, and from self-identified issues. The individual areas were then assigned to line managers to develop startup action plans for subsequent review and integration by the Startup Planning Team.

The action plans that address the nine major improvement areas, together with the material condition items and the startup action item list, constitute the startup plan. The action plans describe corrective actions and other changes to programs and processes that will be completed prior to startup to address the identified performance issues.

CAL and Inspection Reports

The CAL and NPPD responses were reviewed by the Startup Planning Team to identify any remaining open issues that would require resolution prior to startup. The Team concluded that the CAL responses had appropriately addressed the actions specified in the CAL and that each of the issues was adequately tracked for resolution prior to startup. The Team also discussed whether or not there were any larger issues stemming from the individual item review of the CAL responses. The conclusions indicated that there were several issues that should be addressed for further analysis and improvements in the Phase 2 or 3 performance improvement plans. These include providing additional barriers to personnel error (e.g., training), further improvements to the OER program, and improved technical support to resolve problems at the plant.

A review of open NRC inspection report items was conducted by the CNS Licensing organization, and the issues were evaluated as to those that required resolution prior to startup. The results from that review were presented to the Startup Plan Team for evaluation of their generic implications. The Team concluded that the identified issues were the correct ones for startup and that there was sufficient overlap between the open item tracking system and other open issues to provide assurance that all appropriate issues had been identified and would be addressed. For example, open issues on adequacy of procedures and configuration control were reviewed on the inspection item list, and these are separately addressed in startup action plans.

Self-Identified Issues

Management has identified a number of issues that are being tracked for completion prior to plant startup. These issues include several management-related issues that are contained in the Additional Management startup planning category, in addition to specific program, process and material condition issues that the Team addressed for startup. The review also examined generic implications of the identified items. The self-identified issues and their resolution are discussed below.

Program and Process Issues

1. Inspection Report Items:

The inspection and enforcement history prepared for the DSAT was reviewed by the Team. Based upon a trend of issues, the Team identified the need to improve the process for providing information to the NRC. While identification and

resolution of safety issues may also be an item, the team concluded that this is adequately addressed for startup in the plans addressing Corrective Action, Independent Oversight and Self Assessment, Operational Experience Review and Additional Management.

A weakness was identified in the ability to evaluate correctly a range of issues the first time, including 50.59 evaluations. The broader issue was determined to include potentially inadequate evaluations on operability evaluations (OEs). The action plans intended to address the OE program adequately address these issues for startup.

2. Self Assessment:

The Team reviewed evaluations of self assessments performed since 1991. The Team initially reviewed Radiological Safety Incident Report (RSIR) issues and determined them to be acceptable for startup. In addition, the Team reviewed the MOV assessment for any potential startup issues or other concerns not addressed. No additional startup items related to the MOV program were identified.

3. Open Condition Report Review:

A review was conducted of all significant CRs (categories 1 and 2) and other CRs that had been identified for pre-startup completion. There were 78 category 1and 2 CRs open, and approximately 175 category 1-3 CRs were identified for startup. The review of category 1 and 2 CRs revealed a number that were not significant according to 10CFR50, Appendix B. The Team also reviewed open CRs not on the startup list and evaluated them for significance, categorized them as appropriate, and determined whether they should be on the startup plan.

As a result of the CR reviews, 8 category 1 CRs were identified that had startup significance. These items will be closed prior to startup. There were no additional specific or generic issues identified.

4. Open QA items:

Past QA trend reports were reviewed by the Team. For the current quarter, adverse trends were identified in configuration management and in fire protection program implementation. The Corrective Action Program was identified as needing improvement in timely resolution of problems and root-cause determination. A specific off-gas system hardware problem was also identified. The team reviewed

previous Joint Utility Management Audits and QA reports; no additional startup items were identified.

The Team reviewed DSAT issue MRB-02 on QA audit frequency and ANSI 18.7. The current audit schedule appears to be in compliance with the NRC-accepted QA program since the reduction in audit frequency meets docketed commitments.

The Team also reviewed the results of the Corrective Action Review Board (CARB) addressing QC startup issues: low standards for procedures used in the field, a laborious procedure change process, and a commitment to have a vendor review the procedure change process. The Team also reviewed QA observations in maintenance and modifications, including independence, qualifications to identify when QC should be applied, implementation compliance, understanding of ownership (QA versus implementing organizations), and low common standards. A startup action plan was developed to address this issue. No additional startup issues were identified.

5. Field Coaching Team Report:

The Team met with the Field Coaching Team to discuss observations and potential startup issues. Industrial safety concerns were discussed as well as supervisor presence in the field. The Team discussed examples of industrial safety issues and the effectiveness of communication of management expectations. The Team reviewed procedure use and adherence, accountability for correction of problems, and the control of field documents. The main concerns of the Field Coaching Team are to assure that the valve lineup issues and independent verification requirements are correctly addressed for startup. The Team was satisfied that the issues identified are adequately addressed in the plans developed for startup.

6. Integrated Enhancement Plan:

The Integrated Enhancement Plan was reviewed by the Team. None of the action items in the plan were determined to be necessary for startup; however, they will be reviewed for inclusion in the short- and long-term plans.

7. Engineering Work Requests (EWRs):

The backlog of Engineering Work Requests (EWRs) was not reviewed by the Team, but an action plan was developed to assure prioritization of these items and establishment of appropriate goals for startup.

8. Design Criteria Document (DCD) Open Items:

The Team reviewed a report on design criteria documentation open items. A graded approach is used to categorize item significance with 1 and 2 being potential startup issues. Category 3 items have no safety, operability or reportability significance, and category 4 and 5 items are of lesser significance. While there were no open category 1 or 2 items, the Team identified a potential need in the short- and long-term improvement plans to establish trending of category 1 and 2 items.

9. Safety System Operability Review:

The Team addressed verification of the operability of safety systems in light of problems previously experienced with the maintenance program and the surveillance test program. The Team determined that the overall issue would be addressed through the following reviews:

a. System walkdowns (to address preventive and corrective maintenance backlog and outstanding item functional review).
b. Maintenance Work Practice Review.
c. The RPS and ECCS surveillance testing review.
d. Design verification of valve, switch, breaker and damper lineups and walkdowns of those lineups.

The Team reviewed the system readiness review checklists. The checklists were completed in the July-August time frame, and a startup action plan was developed. An additional action plan was also developed to establish multi-discipline team reviews of systems to complement this approach.

The Team reviewed the *Maintenance Work Practices Review* as part of the review of equipment operability as a result of issues associated with performing some maintenance actions without SORC-approved procedures. The initial report requires additional review of field work to determine that all MWRs were implemented correctly. This item is carried for closure on the Action Item List, Appendix A.

10. Program Health Cards:

The Team reviewed the program health card status for the sixty-one programs included in this effort. Evaluations have not been completed for the operability determination, oversight (SRAB, SORC, IRG), microbiologically induced corrosion, operability evaluation, Q List, design basis reconstitution (DBR), and configuration

management programs. In addition, the following programs were determined to have a low score, which would indicate potential problems that should be addressed: Appendix J, check valve, reliability and performance monitoring, vendor manuals, and relay setpoints. These low scores were confirmed by the team as appropriate, given the related issues identified by management and the DSAT.

A start-up action plan has been developed to address NPG program ownership and to establish clear accountability. The Startup Plan includes action plans to address significant startup-related program weaknesses identified in the health cards. The team determined that, outside of other actions being taken (for example, in response to enforcement actions or NPPD initiatives), no other actions are necessary before startup. Program enhancement will be addressed in the short- and long-term plans.

11. Operability Evaluations/Operability Determinations

The Team identified a concern regarding the lack of tracking of open operability determinations and evaluations and added an item to develop a startup plan to resolve this concern.

12. MOV Program:

The Team reviewed the MOV program. The main open issue is completion of IEB 89-10 testing during the next refueling outage. Clarification with the NRC is needed due to the delay in the next outage from the original schedule for the outage prior to the end of 1994. Other issues included resolving CS-5A maintenance and testing commitments and resolving any potential LER overthrust issues.

13. Primary Containment Root Cause Report

The Team reviewed the primary containment root-cause report and determined that all specific issues have been resolved. The report reinforces the need for the organization to recognize safety significance rather than straight compliance (e.g., extension of SORC training to other managers). It also addresses program ownership, consideration of acceleration of the DBR project, and the need for an improved CNS/NED interface agreement. These items are addressed in startup action plans.

Other Management Issues Reviewed

1. The most recent SALP report and INPO evaluation have been adequately reviewed and incorporated into the Integrated Enhancement Plan, which in turn was reviewed by the Team.

2. The Tim Martin staffing study was reviewed and no startup issues identified.

3. The Outage Effectiveness Evaluation was reviewed under Self Assessments.

4. The Failure Prevention, Inc. evaluation results were incorporated into the IEP, which in turn was reviewed by the Team as described above.

5. The Strategic Plan For Performance Improvement was incorporated into the IEP, which in turn was reviewed by the Team.

6. The MWR Backlog, open procedure changes, Nuclear Action Item Tracking items, Startup Issue List, LERs, and OERs were reviewed by system engineering with overview provided by the Team. No additional startup action items were identified.

Material Condition/Hardware Issues

The team specifically addressed material condition issues and establishment of appropriate management performance indicator targets. These would include the following:

1. MWR backlogs
2. Temporary Modifications
3. Red Arrow Log (Control Room instruments out of service)
4. Caution Tags
5. EWRs
6. CRs

The Team reviewed the DSAT field notes and identified hardware and material condition issues. The report was independently reviewed, and CRs are being generated for all hardware issues. The open items from this review will then be identified for startup and tracked accordingly. The DSAT material condition issues are contained in Appendix B.

V. Results of the Planning Process

Based upon the review process described above, the issues that must be resolved prior to startup in each of the nine categories have been determined. A summary of these issues, by category, is provided below. Action plans that address these issues are presented in Section VIII.

1. Independent Oversight and Self Assessment:

   - Revise the SRAB charter to address member independence and changes in membership, as required.
     - Evaluate 1993 self-assessment activities
     - Review the startup plan
     - Evaluate startup activities
   - Improve SORC effectiveness
     - Provide independent experts for mentoring.
     - Establish subcommittees to allow more effective use of member time and provide more focused reviews (e.g., procedures, design changes, special instructions)
     - Conduct training for members.
     - Minimize overlap of committee membership (SRAB, SORC, CRG).
   - Conduct independent QA assessments.
     - Startup action plans
     - CAL item closeouts
     - Closed category 1 and 2 CRs for adequacy of root cause and treatment of safety significance
   - Resolve concerns regarding the independence of the QC function and consistent application of QC requirements

2. Corrective Action Program, Planning and Performance Monitoring:

   - Corrective Action Program (CAP)
     - Clarify responsibility, authority and accountability for the CAP.
     - Review and disposition the CR backlog for startup.
     - Establish improved criteria for determining category 1 and 2 classifications for CRs and conduct appropriate training.
     - Improve root-cause analyses (depth, quality), and integrate it with a rechartered CRG function.

- NPG Planning
  - Initiate the 3-phase performance improvement planning, as described in this report.
- NPG Performance Monitoring
  - Establish performance monitoring for important management indicator backlogs, e.g., MWRs, EWRs, CRs, Temporary Modifications, Red Arrows, and Caution Tags, including setting standards, expectations and goals for startup, safety prioritization of backlogs, and performance monitoring of backlogs

3. Work Control

- Establish and implement a plan for integrated work control, planning and scheduling
  - Clarify responsibility, authority and accountability for work control.
  - Provide SRO screening of MWRs outside the Control Room.
  - Establish up-front Operations input to work priority and schedule.
- Implement an effective LCO tracking and work coordination interface system.

4. Design Control and Configuration Management:

- Conduct a plant configuration verification prior to startup.
  - Valve, switch, breaker, and damper lineup design verification
  - Valve, switch, breaker, and damper lineup walkdown
  - Modification review for lineup changes
- Identify and review priority vendor manuals.
  - Identify required PMs.
  - Update PMs as required.
- Modify the procedure for approval of configuration changes that affect the design to insure NED approval.
  - As-found (as-built) DCNs
  - Lineup changes
  - Require NED authorization for use of SORC-approved MWRs
  - Procedures
- Provide for an improved near-term capability, e.g., through augmenting the DBD staff, to provide more efficient and better-quality safety

evaluations and resolution of design-basis questions. Provide training to appropriate technical staff in locating design-basis information.

- Confirm technical adequacy of RPS and ECCS surveillance procedures.
- Review SORC-approved MWRs for potential issues.
- Change the calculation approval process to prevent issuance prior to modification installation.
- Review safety system readiness for operation.
  - Establish multi-discipline teams to walkdown selected systems to identify all open items, and validity check the MWR, OER, and other open item reviews.
  - Develop a new system engineering startup readiness review checklist and conduct additional system reviews prior to startup. Use the multi-discipline team reviews as a pilot for this effort.

5. Engineering Support:

- Improve NED support and station interface to assure timely resolution of operating problems.
  - Clarify the interface agreement.
  - Augment on-site NED support to support startup plan activities.
- Review and determine disposition of all OD/OEs including any cumulative effects.

6. Plant Testing:

- Complete resolution of the CAL pre-conditioning issues.
- Conduct a comparison of IST and surveillance tests with another BWR to determine program adequacy.

7. Operational Experience Review:

- Evaluate currently open OERs for startup significance.
- Conduct special operating experience search for startup issues following long shutdown.
- Resolve the reactor vessel thermal transient issue.

8. Procedural Control:

- Create a hierarchy of certain key procedures such that a reduction in the level of control provided by these key procedures can not be made in any sub-tier procedure without appropriate review and approval.

- Establish interim procedural controls for Special Instructions.
  - SORC approval.
  - Eliminate ability to isolate work boundary for personnel protection using special instructions (use clearance order process).
  - Validate and walkdown special instructions prior to SORC review.
- Screen the backlog of procedure changes for significant, startup-related items.
- Resolve the EPZ dose assessment model issue.
- Formalize an interim administrative process for handling surveillance tests and LCOs without allowed outage times.

9. Additional Management Issues:

- Resolve the lack of ownership of certain NPG programs.
- Provide nuclear safety awareness training to all employees.
- Establish an enhanced management field observation program.
- Address near-term improvements in the industrial safety program.
- Formalize a procedure for licensing submittals and commitment closure.

VI. Management-Related Improvements in the Startup Plan

Many of the startup action plans address important and immediate management improvements. These improvements are structured to address specifically the root causes identified from the DSAT report, which are:

- Management's ineffectiveness in establishing a corporate culture that encourages the highest standards of safe nuclear plant operation.

- Failure of management to establish the vision supported by adequate direction and performance standards to improve station performance.

- Failure of management to establish effective monitoring and failure to direct critical self assessment activities that recognize program and process deficiencies and make necessary improvements.

- An ineffective management development program has resulted in a lack of management and leadership skills necessary to ensure that

strong leaders and managers are available to fill key corporate and station positions.

The key aspects of the first three root causes identified by the DSAT relate to management capability in setting high standards, providing the vision and direction to improve station performance, and recognizing and correcting program and process deficiencies. Appropriate action plans have been categorized based upon improvements in each of these management deficiencies and listed below. The fourth root cause addresses the need to develop in-house capability to manage long-term performance improvement. In the short term, improved management capability is addressed by the addition of experienced managers to the NPG management team to enable the station to move forward with the required performance improvements.

Set High Standards

1. Establish standards, expectations and goals for startup (NPG Performance Monitoring)
2. Create a hierarchy of key procedures (Procedural Control)
3. Develop a new system engineering startup readiness review checklist (Design Control and Configuration Management)
4. Review and determine disposition of all OD/OEs, including any cumulative effects (Engineering Support)
5. Improve the Industrial Safety Program (Additional Management)
6. Provide safety awareness training to all employees (Additional Management)
7. Improve root cause analysis (CAP, Planning and Performance Monitoring)
8. Review and disposition the CR backlog for startup (CAP, Planning and Performance Monitoring)
9. Implement an effective LCO tracking and work coordination interface system (Work Control)
10. Screen backlog for significant procedure changes (Procedural Control)
11. Assure technical adequacy of design changes (Engineering Support)
12. Evaluate currently open OERs for startup significance (Operational Experience Review)
13. Conduct special OER search for startup from long outages (Operational Experience Review)

Provide the Vision and Direction to Improve Station Performance

1. Initiate the three-phase performance improvement plans (CAP, Planning and Performance Monitoring)

2. Establish performance monitoring of important backlogs (CAP, Planning and Performance Monitoring)
3. Establish an enhanced management field observation program (Additional Management)
4. Evaluate the Power Ascension Plan for integration with the Startup Plan (Additional Management)
5. Establish and implement a plan for integrated work control (Work Control)
6. Improve NED support and station interface to assure timely resolution of operating problems (Engineering Support)

Correct Deficiencies in Programs and Processes

1. Resolve the lack of ownership of certain NPG programs (Additional Management)
2. Revise the SRAB charter (Independent Oversight and Self Assessment)
3. Improve SORC effectiveness (Independent Oversight and Self Assessment)
4. Clarify responsibility, authority and accountability for CAP (CAP, Planning and Performance Monitoring)
5. Formalize a procedure for licensing submittals and commitment closure (Additional Management)

VII. Management of the Startup Plan

A plan manager is assigned responsibility for overall plan management, including monitoring the performance of the action plans and is accountable for reporting the performance results from the plan to management. The plan manager also control changes, additions and deletions to the startup plan.

VII.1. Responsibilities

Site Manager

The Site Manager, in conjunction with the Division Manager of Nuclear Engineering and Construction, Division Manager of Quality Assurance and VP-Nuclear, will assure that sufficient resources are provided to complete the startup plan satisfactorily. In addition, he will actively participate in establishing expectations for performance results with management, monitoring plan results, reviewing management presentations for the purpose of establishing accountability within the organization, and providing overall plan guidance, leadership, and monitoring.

Startup Plan Manager

The day-to-day management of the startup plan is assigned to a senior NPPD manager, who is responsible for assuring that the plan progresses satisfactorily. The startup plan manager is responsible for the following activities:

- Coordinating and preparing management reports for the management team,
- Assuring that plan activities are integrated effectively with the overall site schedule,
- Facilitating changes to existing action plans or the development of new plans as emerging issues develop,
- Establishing and managing the agenda for periodic management review meetings,
- Interfacing with Licensing and the NRC (as appropriate) to assure that any regulatory issues are resolved, and
- Coordinating and assuring the adequacy and acceptable closure of the action plans.

The startup plan manager assures that the action plans are scheduled, responsibility assigned, and resources available for each activity. Working with NPG management and with appropriate planning and scheduling organizations, he will progress the plan and develop required management reports.

Action Plan Managers

Each of the action plans has an assigned action plan manager. The responsibilities of the action plan manager are to review the action plan and ensure that it is implemented effectively. In reviewing the action plan, the assigned manager will verify that the action plan is implementable and will achieve its objectives.

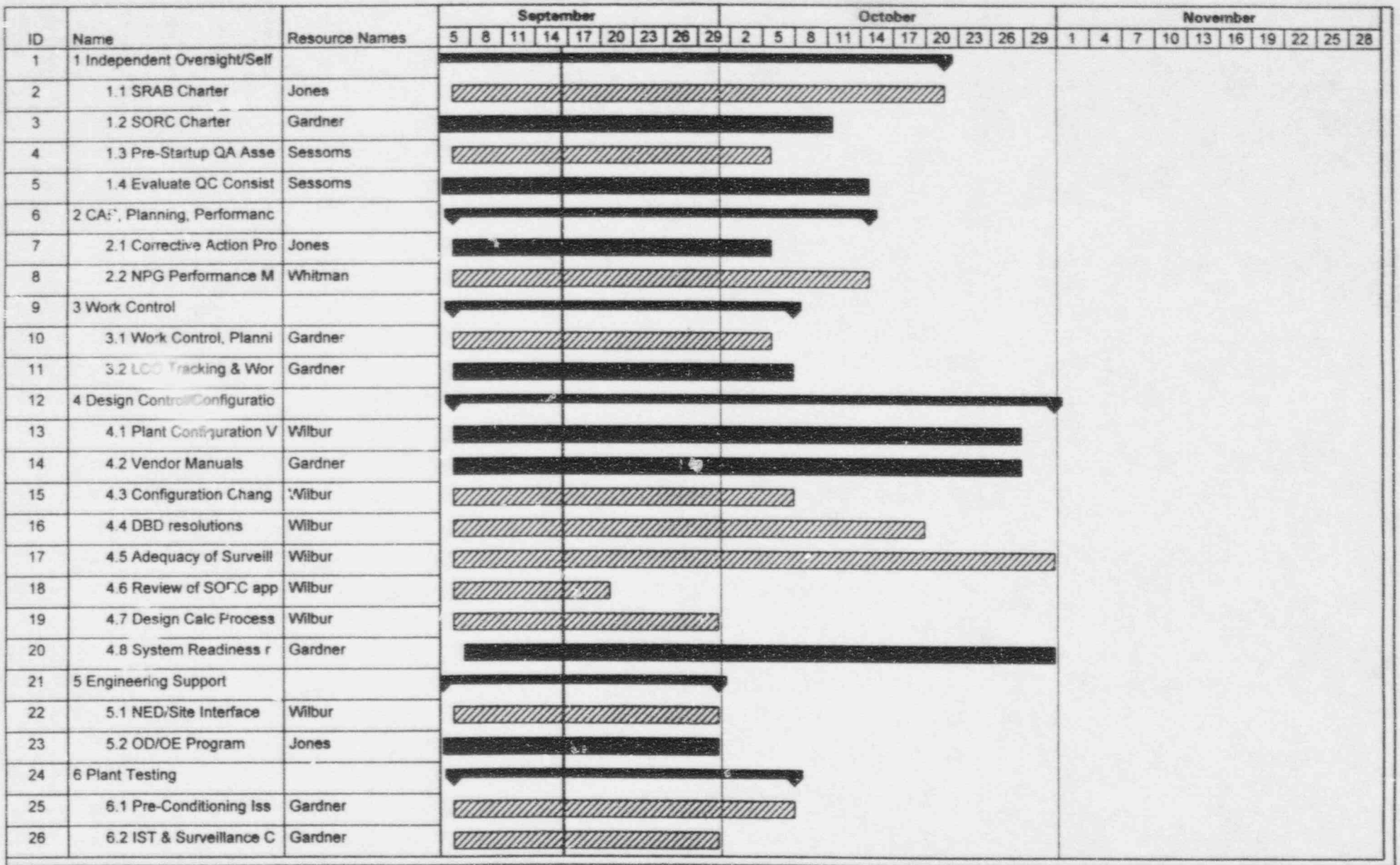
In cases where the action plan manager identifies the need to change the action plan, those changes will be submitted to the startup plan manager for review and approval by the Site Manager.

VII.2. Periodic Assessment

The NPPD management team (Site and Senior Managers), as assisted by the startup plan manager, will provide the focal point for review of startup plan effectiveness through a review of reports of completion of startup action plan activities. These reports will be provided in periodic management review meetings held to review plan results.

VII.3. Verification of Action Plan Closure

Reviews and documentation will be used to verify that the individual action plans are satisfactorily completed. The individual action plan managers are responsible for reporting satisfactory plan closure to the Site Manager and the management team. QA will independently assess the completion of plan actions.

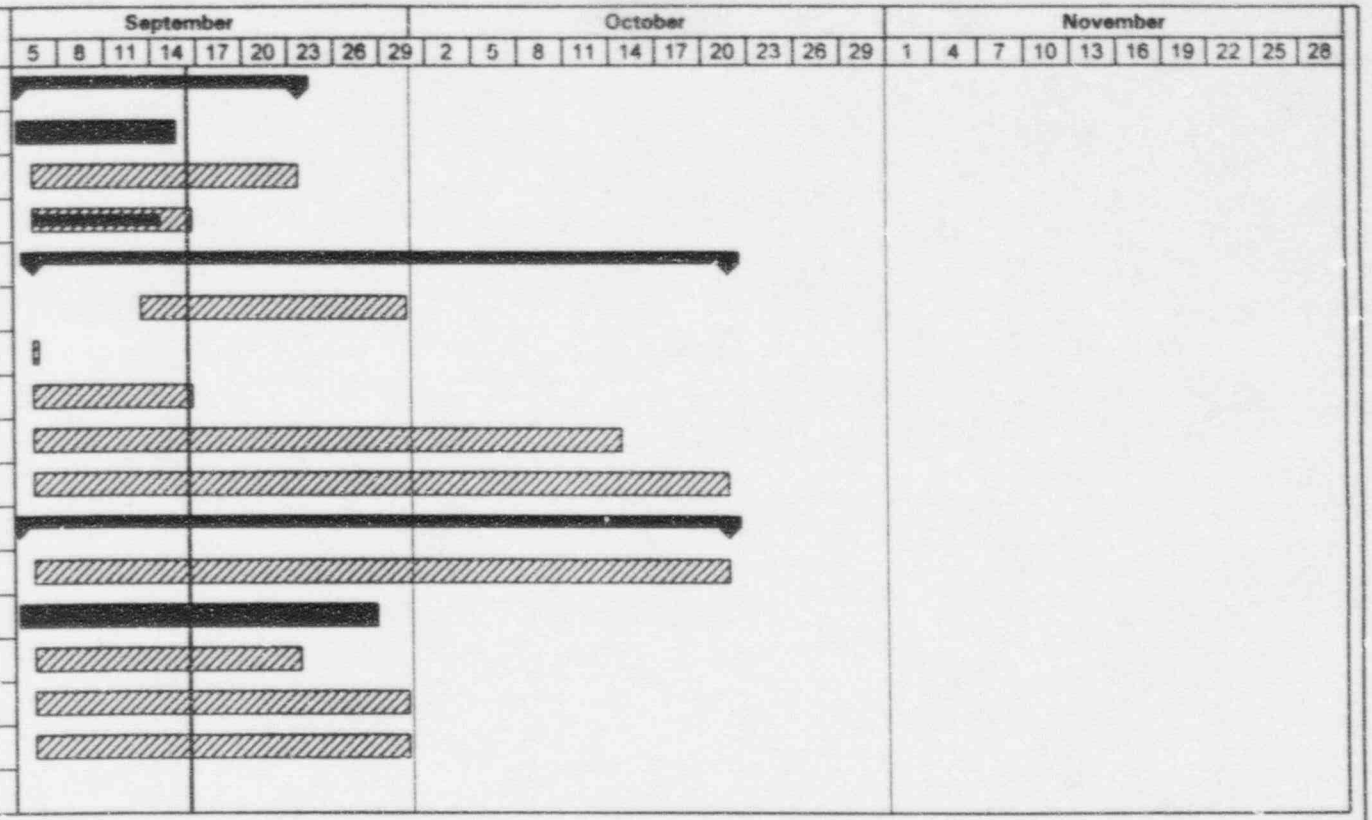


ID	Name	Resource Names
1	1 Independent Oversight/Self	
2	1.1 SRAB Charter	Jones
3	1.2 SORC Charter	Gardner
4	1.3 Pre-Startup QA Asse	Sessoms
5	1.4 Evaluate QC Consist	Sessoms
6	2 CAP, Planning, Performanc	
7	2.1 Corrective Action Pro	Jones
8	2.2 NPG Performance M	Whitman
9	3 Work Control	
10	3.1 Work Control, Planni	Gardner
11	3.2 LCO Tracking & Wor	Gardner
12	4 Design Control/Configuratio	
13	4.1 Plant Configuration V	Wilbur
14	4.2 Vendor Manuals	Gardner
15	4.3 Configuration Chang	Wilbur
16	4.4 DBD resolutions	Wilbur
17	4.5 Adequacy of Surveill	Wilbur
18	4.6 Review of SORC app	Wilbur
19	4.7 Design Calc Process	Wilbur
20	4.8 System Readiness r	Gardner
21	5 Engineering Support	
22	5.1 NED/Site Interface	Wilbur
23	5.2 OD/OE Program	Jones
24	6 Plant Testing	
25	6.1 Pre-Conditioning Iss	Gardner
26	6.2 IST & Surveillance C	Gardner

Project:
Date: 9/16/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

ID	Name	Resource Names
27	7 Operational Experience Re	
28	7.1 Experience Reviews	Jones
29	7.2 Special OER Search	Jones
30	7.3 Vessel Thermal Tran	Wilbur
31	8 Procedural Control	
32	8.1 Procedural Hierarchy	Jones
33	8.2 Special Instructions	Gardner
34	8.3 Procedure Backlog s	Jones
35	8.4 EPZ Dose Assessm	Mace
36	8.5 Surveillance review f	Gardner
37	9 Management	
38	9.1 Program Ownership	Jones
39	9.2 Nuclear Safety Awar	Mace
40	9.3 Management Observ	Gardner
41	9.4 Industrial Safety Issu	Mace
42	9.5 Licensing Submittals	Jones
43		



Project:
Date: 9/16/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

September 15, 1994 10:30 am

START-UP ACTION PLAN

ISSUE: Revise the SRAB charter; address member independence and revise membership

PROGRAM/PROCESS ISSUE CATEGORY: Independent Oversight and Self Assessment

SPONSOR: R. G. Jones/S. J. Jobe

ACTION PLAN MANAGER: R. G. Jones

DESCRIPTION OF ISSUE:

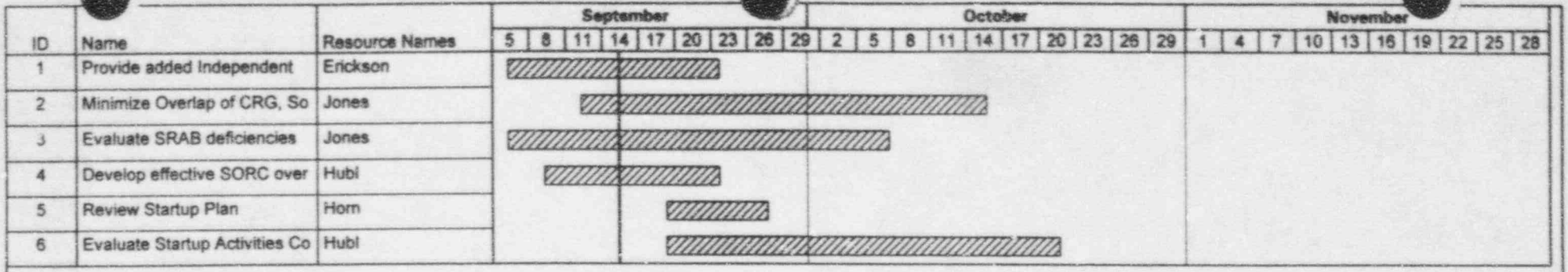
Concerns and improvements identified in the 1991 and 1993 self assessments, DSAT, and other Cooper-identified weaknesses concerning SRAB Charter and membership concerns have not been incorporated into SRAB procedures.

OBJECTIVE:

Ensure SRAB procedures and membership provide effective independent review, audit and oversight of NPG activities in order to ensure Cooper Nuclear Station is safely operated and maintained. Changes must ensure SRAB is self-critical and challenges line management.

ACTION:

1. Provide additional independent membership to SRAB.
2. Minimize overlap of CRG, SORC, and SRAB.
3. Evaluate deficiencies in SRAB performance and revise charter accordingly.
4. Develop an effective oversite of SORC.
5. Review of Startup Plan.
6. Evaluate completion of Startup Activities.



ID	Name	Resource Names
1	Provide added Independent	Erickson
2	Minimize Overlap of CRG, So	Jones
3	Evaluate SRAB deficiencies	Jones
4	Develop effective SORC over	Hubl
5	Review Startup Plan	Horn
6	Evaluate Startup Activities Co	Hubl

Project:
Date: 9/15/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

September 15, 1994 10:30 am

START-UP ACTION PLAN

ISSUE: Improve SORC Effectiveness

PROGRAM/PROCESS ISSUE CATEGORY: Independent Oversight and Self Assessment

SPONSOR: R. L. Gardner/S. C. Woerth

ACTION PLAN MANAGER: R. Gardner

DESCRIPTION OF ISSUE:

The independent oversight of SORC in meeting its responsibilities in accordance with Regulatory requirements needs improvement.

OBJECTIVE:

Improve independent oversight ability of SORC to ensure that an appropriate review is performed for all proposed additions, deletions, and changes to safety-related activities.

Enhance the process utilized by SORC to ensure sufficient independent oversight is maintained.

ACTION:

1. Provide a Nuclear Safety Training course to SORC members and alternates.

2. Establish a mentor to serve as a protagonist, purview SORC review items and assist in presentation preparation.

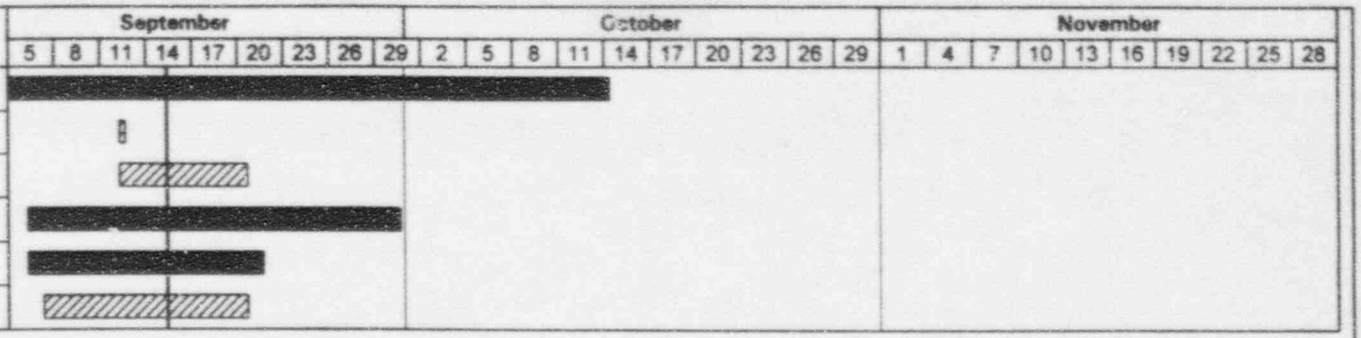
3. Revise Procedure 0.3 to more accurately describe SORC activities.

4. Implement SORC subcommittees and sponsors for review of procedures, design changes, special instructions.

5. Implement SORC Administrator to improve coordination and documentation.

6. Establish group to review other utility SORC organizations, membership, procedures and methods of meeting requirements.

ID	Name	Resource Names
1	SORC Training	Mace
2	Start Mentoring	Gardner
3	Revise Procedure 0.3	Sayer
4	SORC SubCommittees	Gardner
5	SORC Administrator Function	Gardner
6	Establish Review Group	Sayer



Project: SORC Upgrade
Date: 9/15/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

September 15, 1994 10:30 am

START-UP ACTION PLAN

ISSUE: Independent Assessment of Startup Action Plan, Confirmatory Action Letter, Condition Reports

PROGRAM/PROCESS ISSUE CATEGORY: QA Assessment

SPONSOR: R. A. Sessoms

ACTION PLAN MANAGER: D. R. Robinson

DESCRIPTION OF ISSUE:

This action plan does not pertain to an "issue". The attached Assessment Plan is provided to describe the specific activities of the Quality Assurance Division to conduct independent assessments of the Startup Action Plan; CAL response and actions; and Closed Category 1 and 2 Condition Reports.

OBJECTIVE:

To conduct the independent assessments as described above and provide timely reporting of results as appropriate. To ensure a quality startup plan and that significant issues are appropriately addressed prior to startup.

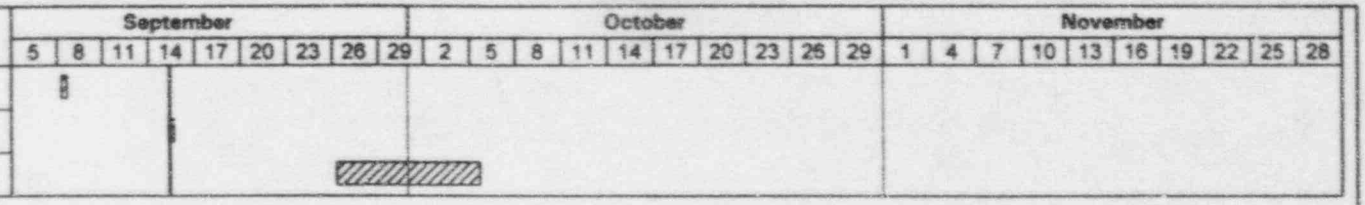
ACTION:

1. Assess the development and implementation of the Startup Action Plan.

2. Assess the adequacy of CAL responses and actions.

3. Assess the adequacy of disposition of Closed Category 1 & 2 Condition Reports.

ID	Name	Resource Names
1	Assess the development & im	Robinson
2	Assess the adequacy of CAL	Robinson
3	Assess the adequacy of disp	Robinson



Project:
Date: 9/15/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

September 16, 1994 3:23 pm

START-UP ACTION PLAN

ISSUE: Quality Control

PROGRAM/PROCESS ISSUE CATEGORY: Independent Oversight and Self Assessment

SPONSOR: R. A. Sessoms

ACTION PLAN MANAGER: G. E. Smith

DESCRIPTION OF ISSUE:

Quality Control inspections are not consistently specified or performed and personnel are not all adequately trained in QC Program implementation.

OBJECTIVE:

1. Provide increased consistency in the application of QC requirements.
2. Provide increased QC inspection for additional activities.
3. Impose limitations on the amount of persons reviewing and specifying QC requirements.
4. Coach/counsel QC personnel on new program requirements.

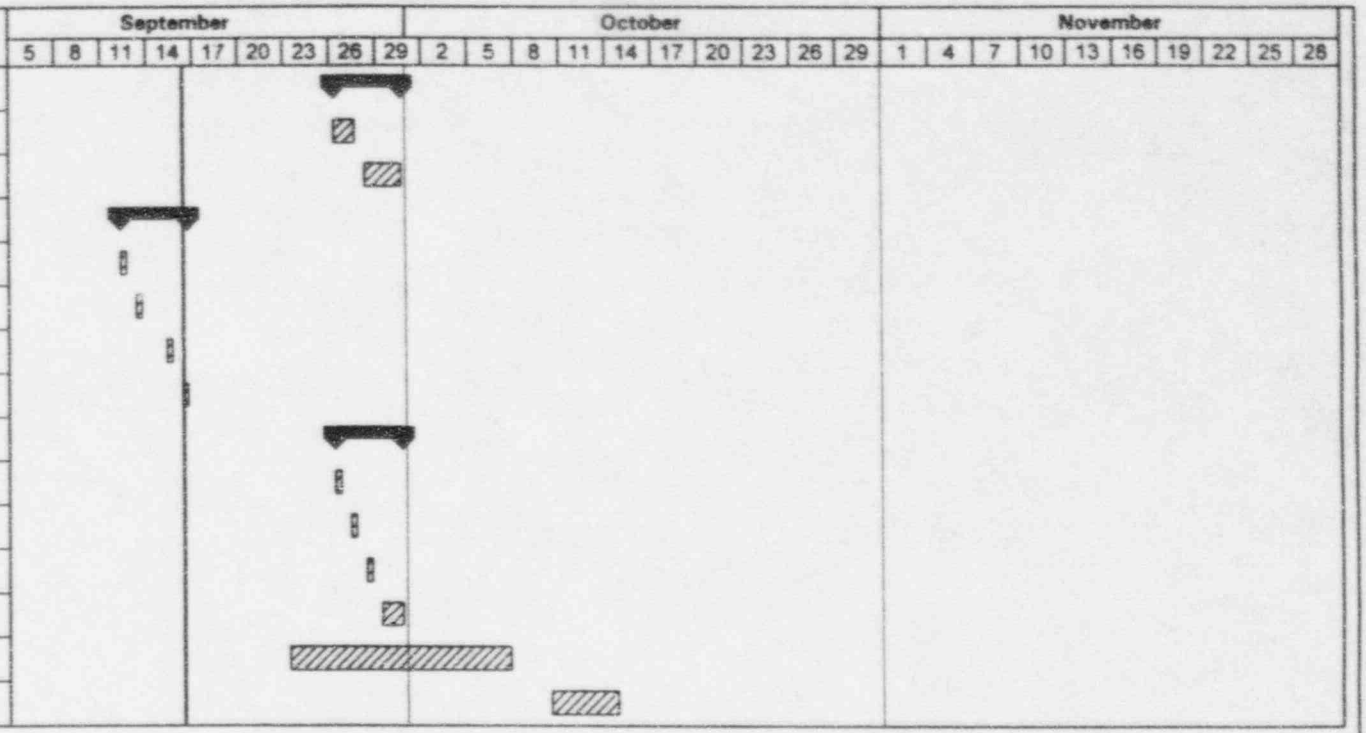
ACTION:

1. Develop and distribute listing of persons (titles) who will review and specify MWR instructions for QC application.
   - Identify personnel responsible for assignment and incorporation of QC inspections
   - Issue listing of personnel responsible for reviewing and specifying QC requirements on MWR special instructions
2. Revise QCP 12.5 to improve amount of QC and consistency of application.
   - Evaluate QC designation and assignment process from another utility (ANO)
   - Compare CNS QC process with the other utility's QC process

- Solicit input from CNS departments on QC application requirements
- Evaluate results and revise procedure

3. Revise QCP 12.6 to provide enhanced instructions to QC personnel.
   - Evaluate current detail of QC independence
   - Evaluate the procedural directions for discrepancy documentation
   - Solicit input from CNS departments on QC performance requirements
   - Evaluate results and revise procedure
4. Provide training sessions for persons affected by the QC Program enhancements.
5. Conduct effectiveness determinations to assure enhancements as intended

ID	Name	Resource Names
1	1 Develop and distribute listin	
2	1.1 Identify personnel re	Allen
3	1.2 Issue listing of perso	Allen
4	2 Revise QCP 12.5	
5	2.1 Evaluate process fro	
6	2.2 Compare CNS proce	
7	2.3 Solicit input on QC a	Allen
8	2.4 Evaluate results revi	Allen
9	3 Revise QCP 12.6	
10	3.1 Evaluate QC indepe	Allen
11	3.2 Evaluate discrepanc	Allen
12	3.3 Solicit input on QC p	Allen
13	3.4 Evaluate results revi	Allen
14	4 Provide training sessions	Allen
15	5 Conduct effectiveness deter	Allen



Project:
Date: 9/16/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

September 16, 1994 3:31 pm

START-UP ACTION PLAN

ISSUE: Corrective Action

PROGRAM/PROCESS ISSUE CATEGORY: Corrective Action Program

SPONSOR: R. L. Jones/S. J. Jobe

ACTION PLAN MANAGER: J. Flaherty

DESCRIPTION OF ISSUE:

Clarify responsibility, authority, and accountability for CAP, improve root cause quality and depth of analysis and corrective action to prevent recurrence. Also, review and disposition CR backlog and clarify criteria for category 1 and 2 CRs.

OBJECTIVE:

Use the dedicated Corrective Action Program group to provide clear management of the program and establish a self-critical root cause culture at CNS which ensures rigorous investigation and effective correction of all conditions adverse to quality.

ACTION:

1. Establish program manager with 5 CR team leaders with sole responsibility for program management.

2. Establish group mission, provide training, leading and/or mentoring investigation teams, perform backend reviews of completed root cause investigations and implement lessons learned for continued program improvement.

3. Conduct Senior Manager meeting to establish Corrective Action Program expectations and accountability.

4. Revise 0.5 series procedures to incorporate CAP organization and responsibilities and lessons learned feedback.

   4.1 Restructure CRG.

   4.2 Senior Management to determine CR category and set prioritization and assign accountability for evaluation.

5. Provide expectations to potential CARB members.

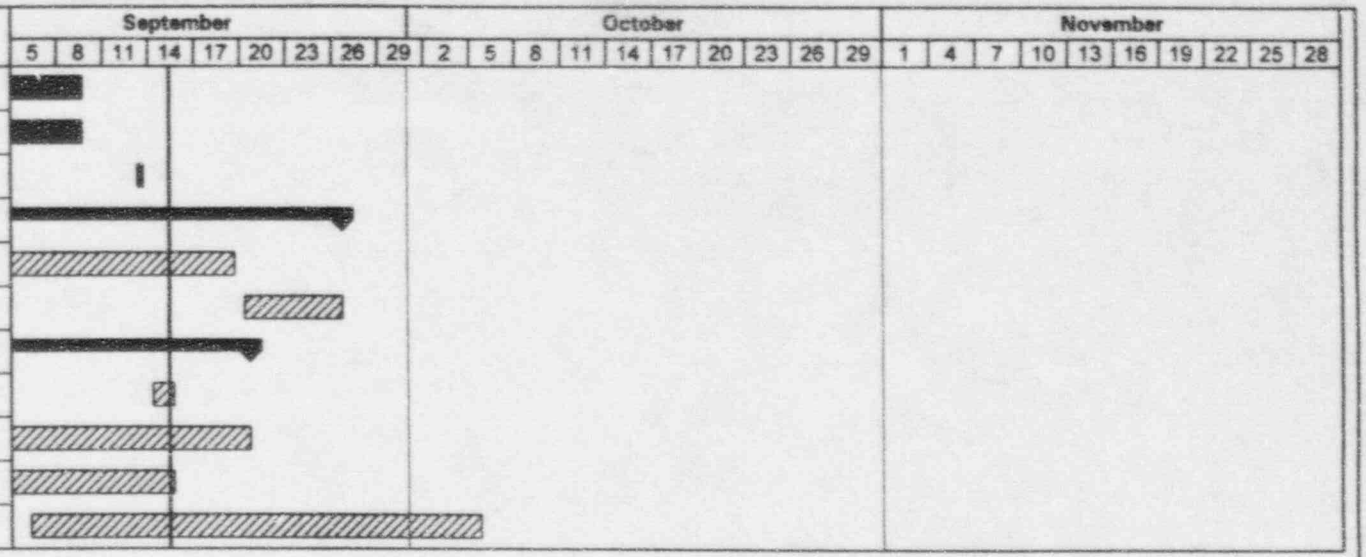
   5.1 Focus on ensuring the understanding of timely convening of a Condition Review Team, accurate root cause and corrective action.

   5.2 Provide additional management training.

6. Provide method for review, disposition, and management of the CAP backlog to support startup.

7. Revise the Condition Reporting Program Guidelines to ensure clear categorization of conditions. This will include a routine work feature for those issues requiring evaluation, tracking, or resolution but do not require apparent or root cause investigations.

ID	Name	Resource Names
1	Establish program mgr and in	Flaherty
2	Establish mission, train team,	Flaherty
3	Conduct Senior Manager me	Flaherty
4	Revise & approve 0.5 series	Gillan
5	Restructure CRG	Flaherty
6	Senior Management CR	
7	Provide expectations to CAR	Shrader
8	Focus CRT understandin	
9	Provide Management Tr	Yelkin
10	Disposition CR startup backlo	Shrader
11	Revise CR program guideline	Flaherty



Project: Corrective Action Program
Date: 9/15/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

September 16, 1994 4:16 pm

START-UP ACTION PLAN

ISSUE: Departmental Performance Indicator Goals/Monitoring

PROGRAM/PROCESS ISSUE CATEGORY: Corrective Action, Planning and Performance Monitoring

SPONSOR: D. A. Whitman

ACTION PLAN MANAGER: A. L. Dostal

DESCRIPTION OF ISSUE:

Determine performance criteria against which departmental goals will be measured.

REFERENCE: NPG Business Plan

OBJECTIVE:

To ensure that departmental goals not only accurately reflect management expectations for the Start-Up Performance Indicator program, but are also attainable.

ACTION:

1. Assess current program and data availability and industry programs
2. Establish startup performance indicators. For each indicator:
   - 2.1 Define data needs
   - 2.2 Assign responsibility
   - 2.3 Define report format
3. Establish goals
   - 3.1 Confirm CR goal of Average Days open and promptness of CR report
   - 3.2 Establish MWR backlog goal
   - 3.3 Establish EWR backlog goal

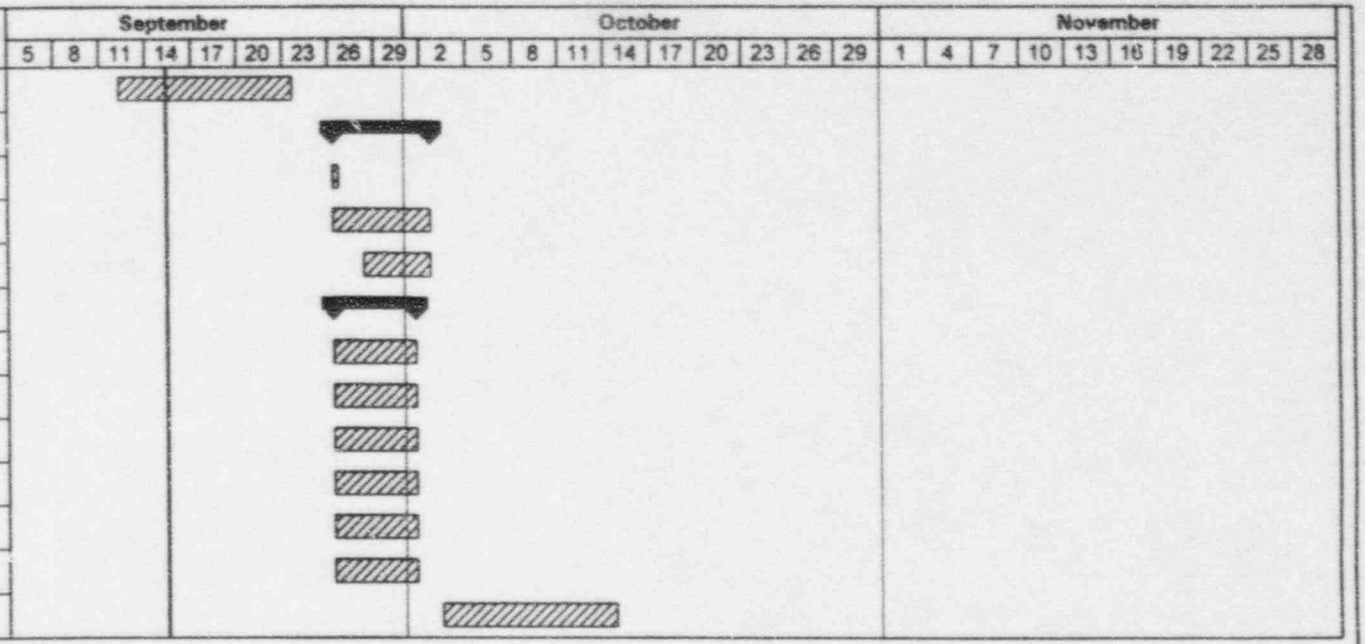
3.4 Establish Temp Mods backlog goal

3.5 Establish Red Arrow goal

3.6 Establish Caution Tag goal.

4. Start publishing requests weekly

ID	Name	Resource Names
1	1 Assess Current & Industry	Dixon
2	2 Establish Startup Performa	Dixon
3	2.1 Define Data Needs	
4	2.2 Assign Responsibility	
5	2.3 Define report format	
6	3 Establish Goals	
7	3.1 CR Goals	Flaherty
8	3.2 MWR Backlog goals	Estes
9	3.3 EWR Backlog goals	McClure
10	3.4 Temp Mods Backlog	Lynch
11	3.5 Red Arrow goals	Brungardt
12	3.6 Caution Tag log goal	Brungardt
13	4 Publish requests weekly	Dixon



Project: Performance Goals
Date: 9/15/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

September 15, 1994 7:28 pm

START-UP ACTION PLAN

ISSUE: Establish and implement a plan for integrated work control, planning, and scheduling

PROGRAM/PROCESS ISSUE CATEGORY: Work Control

SPONSOR: R. L. Gardner/E. M. Mace

ACTION PLAN MANAGER: M. Estes

DESCRIPTION OF ISSUE:

The existing processes for work package preparation, planning, and scheduling work do not sufficiently limit the potential for challenges to nuclear safety and adversely affect the ability of the Maintenance Department to function effectively.

OBJECTIVE:

Correct existing deficiencies in work package content, work coordination, and daily scheduling through implementation of a work process improvement plan.

ACTION:

1. Improve work planning/package preparation by:

   1.1 Adding experienced planners.

   1.2 Implementing a planning guide to control package content and format, and ensuring that planners address appropriate requirements when planning packages.

2. Improve work scheduling by:

   2.1 Adding experienced schedulers.

   2.2 Focusing on schedule adequacy/adherence.

   2.3 Developing a short-range look ahead by all work groups.

   2.4 Developing an improved short-range schedule.

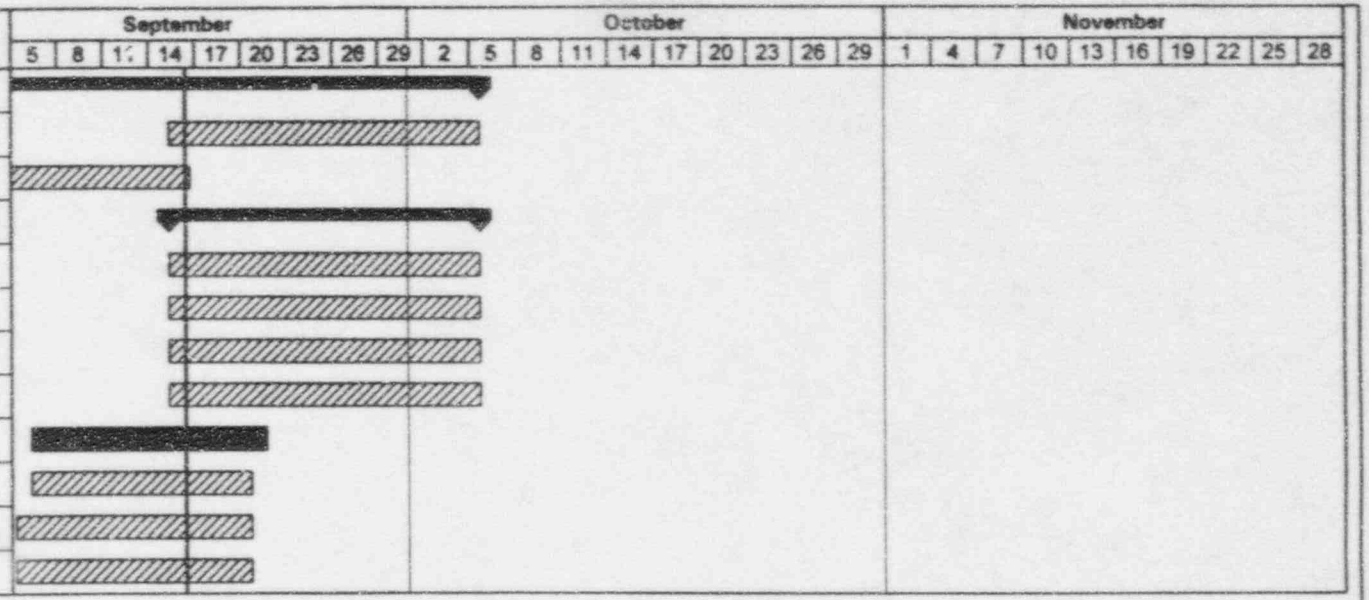
3. Provide operations control in establishing priorities for repair of equipment.

4. Establish a work control center, outside the control room, to allow an SRO to control work.

5. Establish divisionalized work control for the current forced outage.

6. Improve short-range work control by developing an interim schedule that can be used to transition to a system based 12-week rolling schedule. Focus on maintaining division and system separation, and coordination between groups to minimize the times equipment is removed from service.

ID	Name	Resource Names
1	Improve Work Planning/work	Unruh
2	Add experienced planner	
3	Implement planners guid	Unruh
4	Improve work Scheduling	
5	Add experienced schedu	
6	Focus on schedule adeq	
7	Develop short range look	
8	Develop improved short-	Hess
9	Develop Operations prioritizin	Hess
10	Establish work control center	
11	Establish divisionalized work	
12	Establish interim scheduling	Estes,Hess



Project: Work Control
Date: 9/16/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

September 16, 1994 3:30pm

START-UP ACTION PLAN

ISSUE: Implement effective LCO tracking and work coordination interface system

PROGRAM/PROCESS ISSUE CATEGORY: Work Control

SPONSOR: R. L. Gardner/E. M. Mace

ACTION PLAN MANAGER: R. Brungardt

DESCRIPTION OF ISSUE:

An LCO tracking system does not exist to provide the shift supervisor with guidance to assist in work authorization. Mode-dependent LCOs are not tracked. System/train related maintenance is not grouped on the schedule and LCOs are not identified by the schedule.

OBJECTIVE:

Improve tracking of technical specifications-related equipment that is out of service to limit challenges to safety systems caused by work coordination problems.

ACTION:

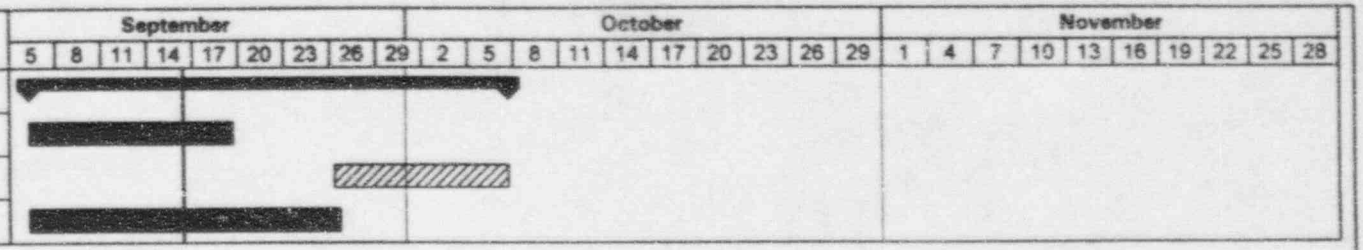
1. Establish an LCO tracking system that identifies equipment out-of-service that would cause entry into an LCO or would be a restraint to a division swap or mode change. Use this system to assist the shift supervisor in authorizing work.

    1.1 Revise STETS for LCO Tracking.

    1.2 Review outstanding open items.

    1.3 Review status of significant LCOs daily.

ID	Name	Resource Names
1	Establish LCO Tracking	
2	Revise STET for LCO tra	Hitzel
3	Review outstanding ope	Hitzel
4	Review status of signific	Hitzel



Project: LCO Tracking
Date: 9/16/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

START-UP ACTION PLAN

ISSUE: Plant Configuration Verification (1 of 2)

PROGRAM/PROCESS ISSUE CATEGORY: Design Control/Configuration Management

SPONSOR: R. L. Gardner

ACTION PLAN MANAGER: R. Brungardt

DESCRIPTION OF ISSUE:

Concerns noted with plant valve configurations, as well as other configuration control problems, indicate a potential configuration control concern with other components that are required to be in specific line-ups.

OBJECTIVE:

Determine if the standby alignment of the plant safety systems is properly specified such that, if called upon to automatically initiate, the systems will meet their design objectives.

ACTION:

1. Identify the expected valve, switch, breaker and damper positions for the RHR B Loop after it is auto-initiated into the LPCI injection mode and SGT system after it is auto-initiated into the accident mode.

2. Review the Elementary Diagrams for RHR Loop B and SGTS to determine if the valves, switches, breakers and dampers start in the expected standby mode; if the logic automatically re-aligns these components into the accident mode as expected; and if the logic will in any way prevent alignment into the accident mode.

3. Compare the normal (100% power lineup) standby position from valve and switch/breaker checklists, system operating procedures and operator knowledge against the required design position.

4. Screen discrepancies and resolve. Evaluate need to expand to other systems.

START-UP ACTION PLAN

ISSUE: Plant Configuration Verification (2 of 2)

PROGRAM/PROCESS ISSUE CATEGORY: Design Control/Configuration Management

SPONSOR: R. L. Gardner/K. C. Walden

ACTION PLAN MANAGER: R. Brungardt

DESCRIPTION OF ISSUE:

The DSAT team identified many examples of recently identified valve and switch mispositionings. They also identified that many valve lineup sheets had known deficiencies.

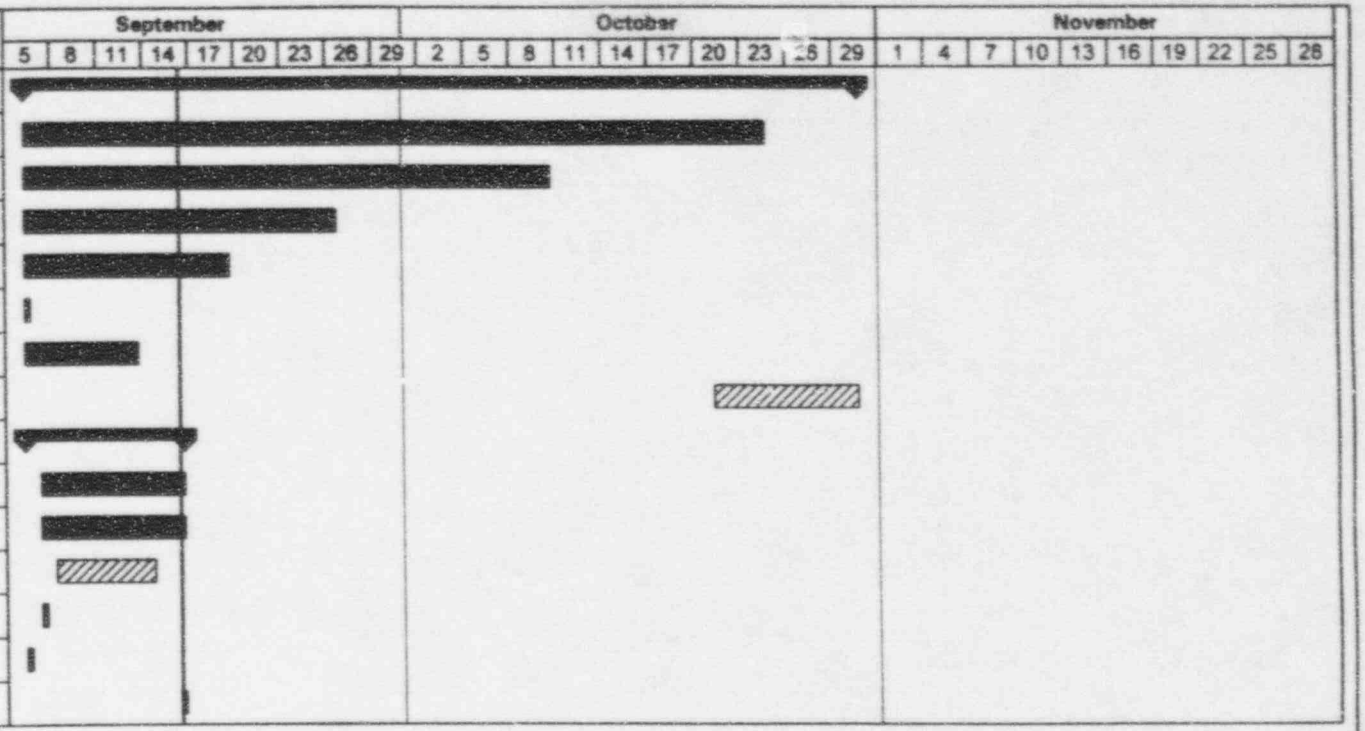
OBJECTIVE:

Perform valve, switch, breaker, and damper lineup walkdown and initiate corrective action for discrepancies.

ACTION:

1. Operations Department to perform valve, switch, breaker, and damper lineup walkdown, and initiate corrective action for discrepancies.
2. NED to perform review of past Design Changes against existing valve lists.
3. Review NED results and submit to Operations Department.
4. Operations Department field verify condition.
5. Operations Department generate TPCNs for affected procedures.
6. Operations Department perform valve position verification of TPCNs (verification of changes only).

ID	Name	Resource Names
1	1 Design Verification	
2	1.1 ID. expected RHR po	
3	1.2 ID. expected SBGT v	Freborg,Jeanneret,
4	1.3 Review RHR Loop B	Freborg,Jeanneret,Fi
5	1.4 Review SGTS elem.	Freborg,Jeanneret,Fi
6	1.5 Compare the normal	
7	1.6 Screen any identified	Freborg,Jeanneret,
8	1.7 Resolve startup discr	Freborg,Jeanneret,Fi
9	2 Plant Configuration Verificat	
10	2.1 Operations departme	Black
11	2.2 NED perform review	Fischer
12	2.3 Submit review to OP	
13	2.4 Operations departme	Black
14	2.5 TPCNs	Black
15	2.6 Verify TPCNs	Black



Project: Plant Configuration Verif.
Date: 9/16/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

START-UP ACTION PLAN

ISSUE: Identify and Review Priority Vendor Manuals

PROGRAM/PROCESS ISSUE CATEGORY: Design Control/Configuration Management

SPONSOR: R. L. Gardner/K. C. Walden

ACTION PLAN MANAGER: R. Foust

DESCRIPTION OF ISSUE:

DSAT noted a concern with the backlog of safety-related vendor manuals that have not been reviewed to identify PM requirements for associated components.

OBJECTIVES:

1. Resolve the DSAT concern by ensuring that those essential components associated with the backlogged safety-related vendor manuals are evaluated, if necessary, for inclusion in the PM program.

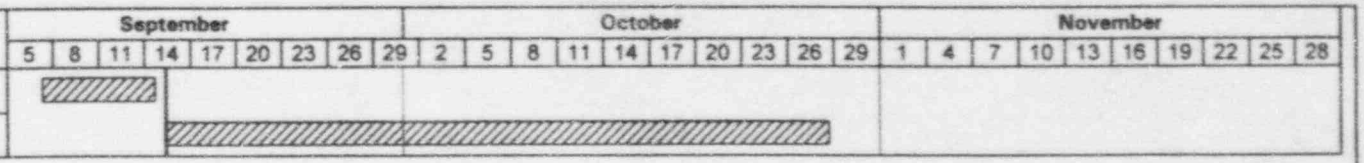
2. Add confidence to our ability to sustain plant operations by evaluating those components associated with certain non-safety-related vendor manuals, if necessary, for inclusion in the PM program.

ACTION:

1. Collect and compile all backlogged safety-related vendor manuals.

2. Identify new or different significant PM requirements. Make changes to appropriate PMs.

ID	Name	Resource Names
1	1 Compile Backlog Safety Ve	Hansen
2	2 Identify and Change PMs	Larson



Project: Vendc- Manuals
Date: 9/15/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

September 16, 1994 3:43 pm

START-UP ACTION PLAN

ISSUE: NED review of procedures and DCNs to ensure Configuration Control.

PROGRAM/PROCESS ISSUE CATEGORY: Design Control/Configuration Management

SPONSOR: R. E. Wilbur/K. C. Walden

ACTION PLAN MANAGER: G. S. McClure

DESCRIPTION OF ISSUE:

Configuration Control is not effectively maintained. Contributing factors are the need for greater involvement of NED in specific procedure changes that may affect design and the changing of drawings without adequate justification as to the effect on design. The specific concerns are the lack of positive control of:

1. valve/power supply line-ups that may be due to Procedure changes
2. operating conditions/parameters that may be due to Procedure changes
3. drawing changes made independent of the design change process.

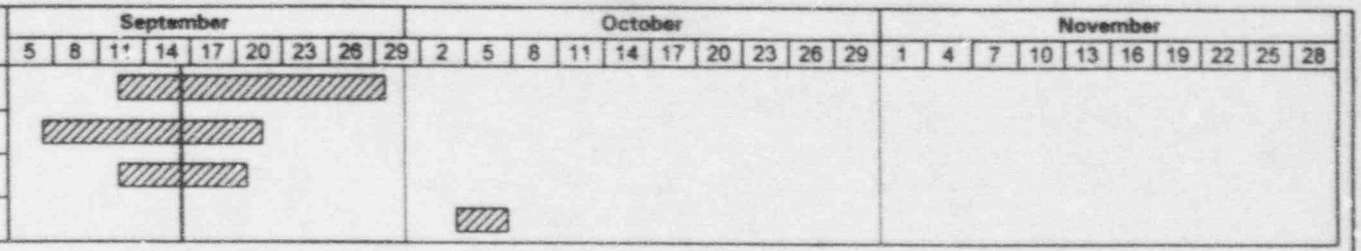
OBJECTIVE:

Provide mechanisms for assuring that changes to configurations reflect station design. This includes strengthening review of drawing changes and specific procedures.

ACTION:

1. Modify both CNS/NED DCN Procedures to require Engineering justification of reason for DCN, if not a Design Change.
2. Provide a screening process that identifies when a Procedure change requires NED review to assure the change does not affect the design basis.
3. Provide a screening process that identifies when an NED calculation requires a CNS review to assure the changes does not affect plant operation.
4. Provide training.

ID	Name	Resource Names
1	1 Modify CNS/NED DCN Pro	Hillstrom
2	2 Generate Screening Proces	Hillstrom
3	3 Provide a screening proces	Hillstrom
4	4 NED Training on CNS Proc	Hillstrom



Project:
Date: 9/16/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

September 15, 1994 8:00 pm

START-UP ACTION PLAN

ISSUE: Efficient Resolution of Design-Basis Questions

PROGRAM/PROCESS ISSUE CATEGORY: Design Control/Configuration Management

SPONSOR: R. E. Wilbur/K. C. Walden

ACTION PLAN MANAGER: W. L. Swantz

DESCRIPTION OF ISSUE:

Provide for a near-term capability, e. g., through augmenting the DBD staff, to provide more efficient resolution of design-basis questions and improve the quality of safety evaluations submitted for SORC approval.

OBJECTIVE:

Provide a more efficient method of responding to design basis questions and identifying design basis information and upgrade the quality, detail and accuracy of 10CFR50.59 evaluations before they are submitted to SORC for review and approval.

ACTION:

1. Add six (6) new senior engineering consultants to the Design Basis Group for twelve (12) months to focus specifically on responding to design basis questions and reviewing work from other groups to ensure that the design basis and requirements of 10CFR50.59 are met. Focus will be on evaluations associated with current /future DCs, STPs and SPs

2. Develop a simple one page Design Basis Information Request Form, with instructions on the back.

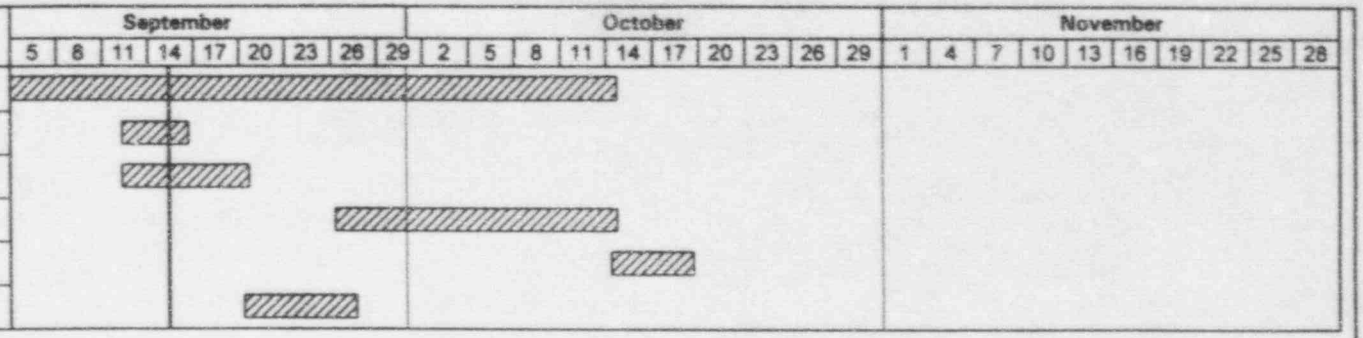
3. Develop a training session and guidance document on how to locate design basis information and distribute to appropriate technical staff.

4. Conduct training for appropriate technical staff on how to locate design basis information.

5. Solicit and evaluate formal feedback through discussion, and through a questionnaire distributed at the training session, on the Design Basis Information Request Form and explain its use.

6. Conduct a review to confirm that recent assessment, inspections, etc. resulted in high confidence level of capturing past 10CFR50.59 evaluation deficiencies.

ID	Name	Resource Names
1	1 Hire 6 Consultant Engineer	Boyce
2	2 Develop Design Basis Infor	Boyce
3	3 Develop training on Design	Boyce
4	4 Conduct training for technic	Boyce
5	5 Feedback from Design Basi	Boyce
6	6 Conduct review	Boyce



Project:
Date: 9/15/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

START-UP ACTION PLAN

ISSUE: Surveillance Procedure Adequacy

PROGRAM/PROCESS ISSUE CATEGORY: Design Control/Configuration Management

SPONSOR: R. E. Wilbur/K. C. Walden

ACTION PLAN MANAGER: W. L. Swantz

DESCRIPTION OF ISSUE:

Verify technical compliance of CSCS (ADS, CSS, HPCI, LPCI) and RPS surveillance procedures

OBJECTIVE:

Complete surveillance procedure validation for CSCS and RPS.

ACTION:

Perform detailed review of surveillance procedures for CSCS and RPS to verify testing is being conducted in accordance with CNS Technical Specifications, USAR, IST Program, and DCDs (as applicable). Review includes:

1. Review applicable documentation (including drawings) and yellow-line documents to provide an overview of testing performed.

2. Generate Surveillance Program Review Resolution Forms for deficiencies or concerns noted during review. Track forms to closure and provide daily/weekly updates to CFM Manager.

3. Complete Procedure Review Form for each procedure indicating:

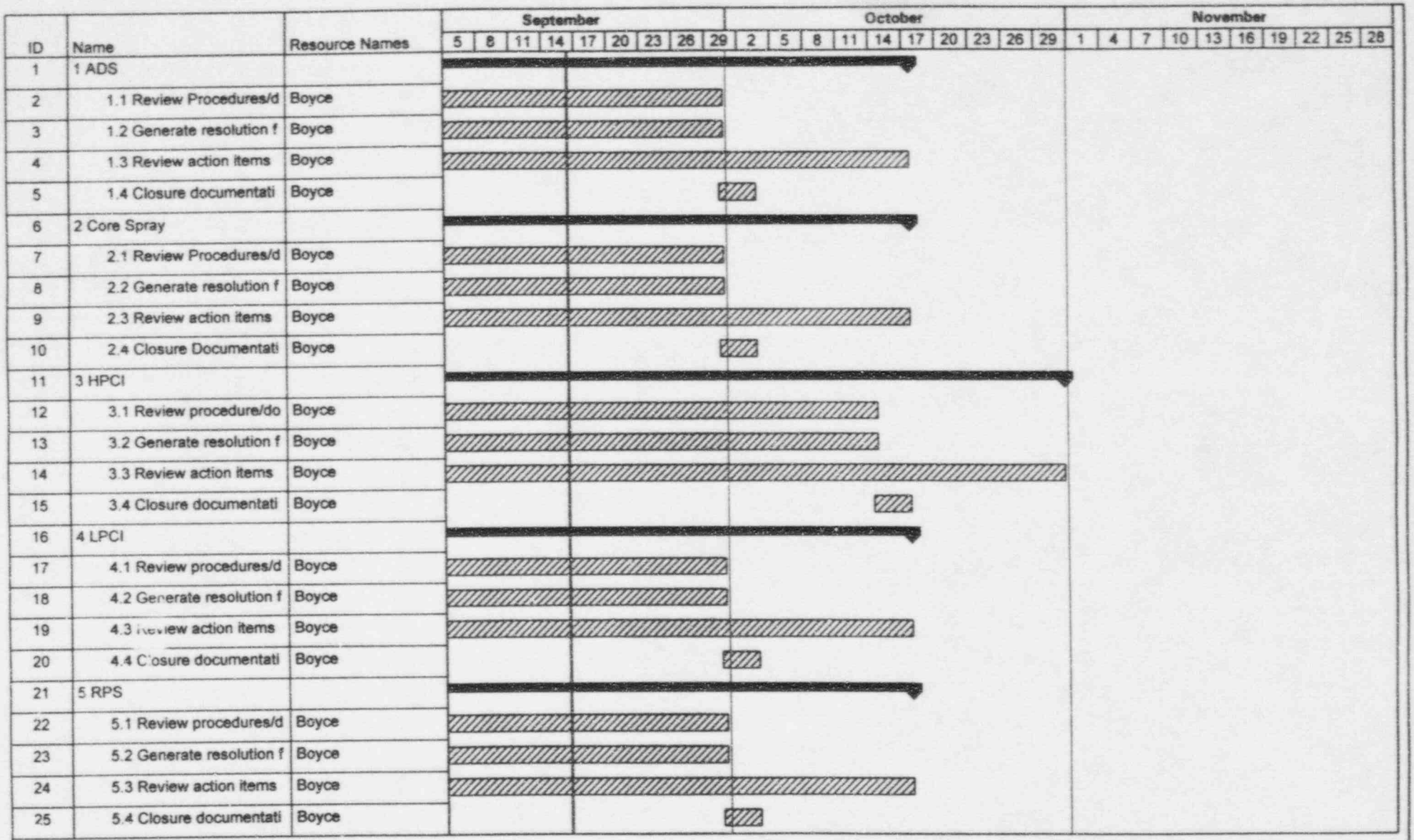
   * Review resolution forms submitted

   * Components tested & screened for operability concerns

   * Reference documentation and drawings

   * Technical Specification line items satisfied

- USAR testing requirements satisfied



ID	Name	Resource Names
1	1 ADS	
2	1.1 Review Procedures/d	Boyce
3	1.2 Generate resolution f	Boyce
4	1.3 Review action items	Boyce
5	1.4 Closure documentati	Boyce
6	2 Core Spray	
7	2.1 Review Procedures/d	Boyce
8	2.2 Generate resolution f	Boyce
9	2.3 Review action items	Boyce
10	2.4 Closure Documentati	Boyce
11	3 HPCI	
12	3.1 Review procedure/do	Boyce
13	3.2 Generate resolution f	Boyce
14	3.3 Review action items	Boyce
15	3.4 Closure documentati	Boyce
16	4 LPCI	
17	4.1 Review procedures/d	Boyce
18	4.2 Generate resolution f	Boyce
19	4.3 Review action items	Boyce
20	4.4 Closure documentati	Boyce
21	5 RPS	
22	5.1 Review procedures/d	Boyce
23	5.2 Generate resolution f	Boyce
24	5.3 Review action items	Boyce
25	5.4 Closure documentati	Boyce

Project:
Date: 9/16/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

September 16, 1994 4:16 pm

START-UP ACTION PLAN

ISSUE: SORC Approved MWRs and Subsequent Design Changes

PROGRAM/PROCESS ISSUE CATEGORY: Design Control/Configuration Management

SPONSOR: R. E. Wilbur/K. C. Walden

ACTION PLAN MANAGER: G. S. McClure

DESCRIPTION OF ISSUE:

SORC approved MWRs are sometimes used to expedite the installation of a modification. There have been two cases where the follow-up, formalized design change documented required changes to the original SORC approved MWR. Additionally, some of the design calculations were not prepared until the modification had been installed for over a year.

OBJECTIVE:

Provide added assurance that SORC approved MWRs used to implement modifications receive a higher level technical review to guard against design deficiencies or violation of design basis.

ACTION:

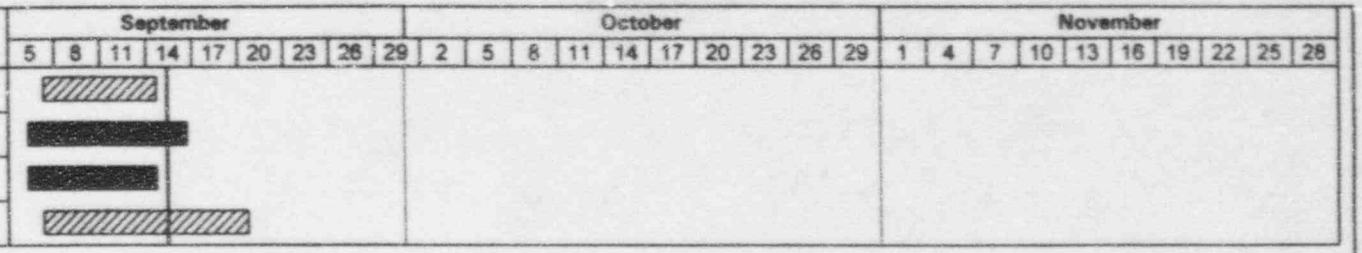
1. Identify level and type of any enhanced (ANSI N45.2.11) reviews required. Additional reviews by both NED and site personnel will be evaluated.

2. Verify procedures are adequate to assure that follow-up documentation is completed within 30 days or alternatively require justification for leaving the documentation open.

3. Changes to the CNS Engineering Procedure 3.4 will be made to incorporate the requirements determined above.

4. Review the outstanding SORC approved MWRs to assure there are no potential issues that would require additional modifications, changes or safety significant concerns.

ID	Name	Resource Names
1	1 Determine review requirem	Done
2	2 Verify procedure adequacy	
3	3 Generate PCNs procedure	
4	4 Review outstanding SORC	



Project:
Date: 9/15/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

September 16, 1994 7:03 am

START-UP ACTION PLAN

ISSUE: Inadequate Calculation Control Prior to Implementation

PROGRAM/PROCESS ISSUE CATEGORY: Design Control/Configuration Management

SPONSOR: R. E. Wilbur/K. C. Walden

ACTION PLAN MANAGER: G. S. McClure

DESCRIPTION OF ISSUE:

Current calculation process does not prevent the issuance of an approved calculation before its associated modification is installed in the plant. This can contribute to misunderstanding of "current" design.

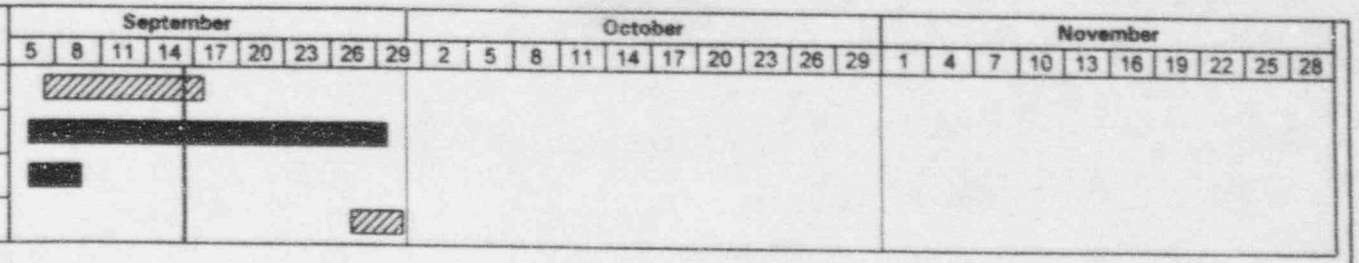
OBJECTIVE:

Ensure calculations that are approved prior to the associated field modification/implementation are appropriately identified.

ACTION:

1. Develop and implement a process for identifying calculations that are approved and not implemented in the field.
2. Approve PCN to Procedure 3.4.7 to Include Installation Status of Calculations.
3. Identify current calculations that have been approved, but are yet to be implemented, and revise revision status.
4. Provide Training on changes made by above PCN

ID	Name	Resource Names
1	Process for Unimplemented	Hillstrom
2	Develop PCN, proc. 3.4.7, ins	Hillstrom
3	Id. current Unimplemented C	Hotovy
4	Provide training on changes	Hillstrom



Project:
Date: 9/16/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

September 16, 1994 3:29 pm

START-UP ACTION PLAN

ISSUE: Multi-discipline Team System Readiness Reviews.

PROGRAM/PROCESS ISSUE CATEGORY: Design Control/Configuration Management

SPONSOR: R. L. Gardner/S. C. Woerth

ACTION PLAN MANAGER: S. C. Woerth

DESCRIPTION OF ISSUE:

The DSAT identified a number issues regarding the ability and resources in System Engineering to perform adequate reviews of systems. This review will provide a comprehensive check of the reviews that have been performed for the various programs (OERs, MWRs, CRs,etc) as well determine the thoroughness of original system engineer walkdowns. From these reviews, recommendations will be made to upgrade the checklists and to provide a multi-discipline review of the systems as the normal method for conducting these reviews in the future.

OBJECTIVE:

Complete Multi-discipline review of all open items and conduct walkdowns for the RHR and SBGT systems. Revise checklist for walkdowns and conduct multi-discipline reviews of all important systems prior to startup.

ACTION:

1. Perform Pilot Multi-Discipline system reviews.

    1.1 Identify scope of review for multi-discipline team, develop schedule for completion.

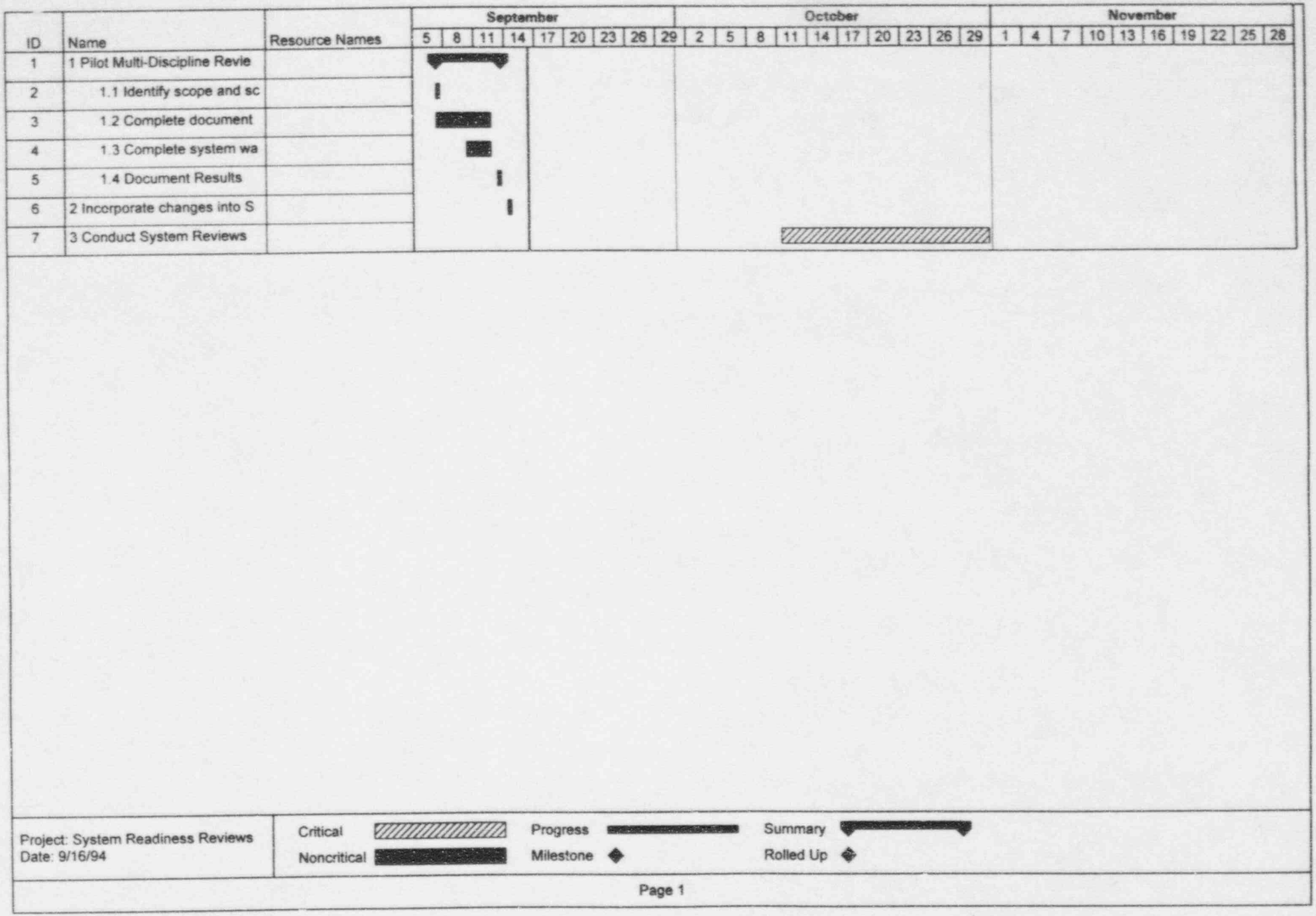
    1.2 Complete documentation reviews.

    1.3 Complete system walkdowns.

    1.4 Document results.

2. Based on results of above, identify changes needed for system checklists and incorporate changes.

3. Develop schedule and complete system multi-discipline reviews just prior to startup for important systems based on revised checklist.


ID
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Resource Names
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October
November
5 8 11 14 17 20 23 26 29
2 5 8 11 14 17 20 23 26 29
1 4 7 10 13 16 19 22 25 28
1 1 Pilot Multi-Discipline Revie
2 1.1 Identify scope and sc
3 1.2 Complete document
4 1.3 Complete system wa
5 1.4 Document Results
6 2 Incorporate changes into S
7 3 Conduct System Reviews
Project: System Readiness Reviews
Date: 9/16/94
Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

September 15, 1994 10:30 am

START-UP ACTION PLAN

ISSUE: Improve NED Site Support during Startup and Power Ascension (S/PA)

PROGRAM/PROCESS ISSUE CATEGORY: Engineering Support

SPONSOR: R. E. Wilbur/J. E. Lynch

ACTION PLAN MANAGER: S. McClure, R. Wenzl

DESCRIPTION OF ISSUE:

Improve NED support and station interfaces to assure timely resolution of operating problems.

- Clarify the interface agreement.
- Augment on-site NED to support start-up & power ascension

OBJECTIVE:

Provide a coordinated review of the NED/CNS Engineering functions and interfaces related to startup and power ascension, and develop an upgraded interface agreement better defining work function, and responsibilities

Provide augmented NED on-site support for CNS startup and power ascension activities.

ACTION:

1. Conduct NED/CNS Engineering Managers and Supervisors Interface Meeting to review current functions and interfaces to identify and upgrade existing Engineering functions/interfaces as required to support startup/power ascension.

2. Document the results of the above meeting in a startup interface agreement.

3. Identify any additional resource requirements to support assigned functions through startup.

4. Generate data base of industry experience and CNS experience of issues related to startup from long term outages.

5. Review the information from the data base to determine possible restart issues/problems to determine the type of technical support required from NED to support plant startup/power ascension.

6. Organize a multi-disciplined NED on-site startup team to augment NED on-site support for CNS startup and power ascension activities.

START-UP ACTION PLAN

ISSUE: Resolve the lack of program ownership in the NPG

PROGRAM/PROCESS ISSUE CATEGORY: Management

SPONSOR: R. G. Jones/R. L. Beilke

ACTION PLAN MANAGER: R. G. Jones

DESCRIPTION OF ISSUE:

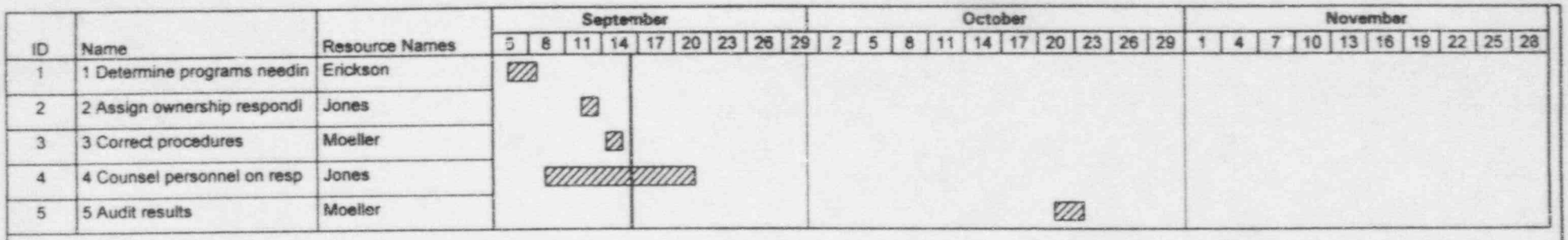
Some NPG programs lack ownership. These programs need to be identified and procedures changed to clearly provide one owner who has the overall responsibility and authority to carry out that respective program. This issue must be resolved so that programs can be effectively managed and proper accountability assigned.

OBJECTIVE:

Establish effective ownership for programs which affect reactor safety.

ACTION:

1. Determine which programs need ownership corrective action.
2. Assign ownership responsibilities.
3. Correct procedures as required.
4. Counsel selected personnel assigned program ownership on responsibilities.
5. Evaluate effectiveness of results.



ID	Name	Resource Names
1	1 Determine programs needin	Erickson
2	2 Assign ownership respondi	Jones
3	3 Correct procedures	Moeller
4	4 Counsel personnel on resp	Jones
5	5 Audit results	Moeller

Project: Program Ownership
Date: 9/16/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

September 16, 1994 3:57 pm

START-UP ACTION PLAN

ISSUE: Nuclear Safety Awareness

PROGRAM/PROCESS ISSUE CATEGORY: Management

SPONSOR: E. M. Mace/R. L. Beilke

ACTION PLAN MANAGER: J. Dutton

DESCRIPTION OF ISSUE:

The NPG has been ineffective in fostering and promoting a heightened sensitivity and awareness of Nuclear Safety.

OBJECTIVE:

Strengthen the NPG nuclear safety culture and establish high standards of safe, reliable nuclear plant operation.

ACTION:

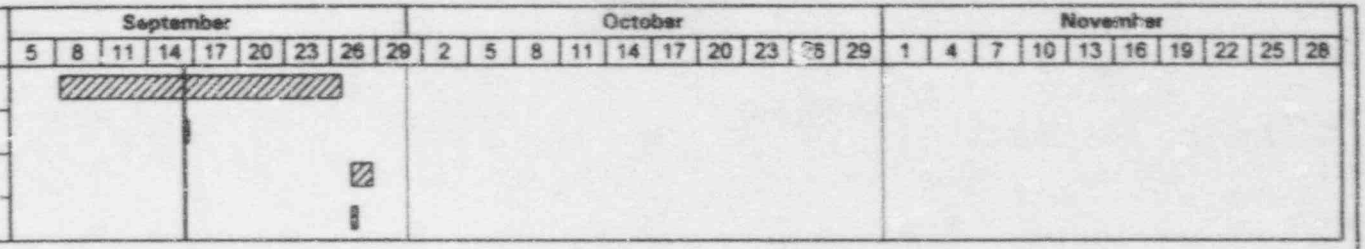
1. Provide SORC, Managers, System Engineers, Design Engineers, and Supervisors with comprehensive Nuclear Safety Culture training.

2. Develop Nuclear Safety Culture training for presentation to entire NPG.

3. Senior Managers present Nuclear Safety Training to their reporting personnel.

4. Conduct ongoing field observations and solicit feedback to determine effectiveness of training.

ID	Name	Resource Names
1	1 Managers Nuclear Safety C	Rotkvic
2	2 NPG Nuclear Safety Cultur	Rotkvic
3	3 Senior Managers present Tr	Dutton
4	4 Conduct Effectiveness Revi	Jones



Project:
Date: 9/16/94

Critical
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Progress
Milestone
Summary
Rolled Up

START-UP ACTION PLAN

ISSUE: Management Observations - Field Coaching Team Plus Management Observations

PROGRAM/PROCESS ISSUE CATEGORY: Management

SPONSOR: R. L. Gardner/R. L. Beilke

ACTION PLAN MANAGER: J. V. Sayer

DESCRIPTION OF ISSUE:

Management's involvement in the field is not sufficient to ensure work is maintained to high standards with respect to industrial safety, procedural adherence, and material conditions. As such, basic concepts in the operation of a nuclear power facility are not being communicated to the work force, nor are they well understood or practiced at CNS.

OBJECTIVE:

Increase Management and Supervisory involvement in the field in order to:

1. Assess station material conditions
2. Assess compliance with established radiological and industrial safety work practices
3. Assess compliance with station work documents
4. Coach and mentor personnel in the field
5. Re-enforce management's expectations and standards in the field
6. Improve organization communication channels

ACTION:

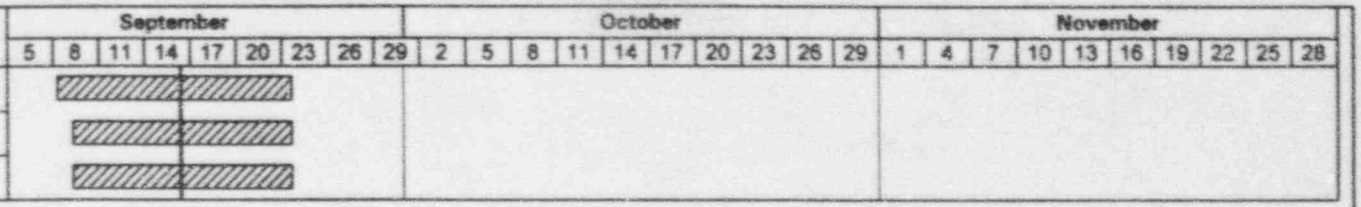
1. Develop manager/supervisor field observation checklist which assists managers/supervisors in accomplishing the objectives listed above.

2. Develop standard manager/supervisor field observation schedule which specifies

dates and blocks of time to conduct field observations. Include specific management issues to be reviewed with schedule.

3. Review with Field Coaching Team the objectives of the Start-up Issues Plan. The Field Coaching Team provides specific issues with regard to appropriate field knowledge of the Startup Issues Plan and manager/supervisor involvement in the field.

ID	Name	Resource Names
1	1 Develop Obsevation Check!	Beilke
2	2 Develop Schedule	Beilke
3	3 Field Coaching	Beilke



Project:
Date: 9/16/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

START-UP ACTION PLAN

ISSUE: Industrial Safety

PROGRAM/PROCESS ISSUE CATEGORY: Management

SPONSOR: E. M. Mace

ACTION PLAN MANAGER: H. Hitch

DESCRIPTION OF ISSUE:

Industrial safety practices in the station are considered a weakness. Management expectations regarding industrial safety are frequently ignored or otherwise not carried out by the employee population. Observations were sufficiently numerous to indicate that management is either not out in the plant observing or, if they are, are not regularly enforcing expectations.

OBJECTIVE:

One of the major objectives of the District is to protect its employees and the public from accidents. Whenever economically possible, the District will eliminate hazards from employee work areas. However, where hazards cannot be economically removed, it becomes the responsibility of each supervisor and employee to recognize these hazards and deal with them in a manner that will prevent accidents.

ACTION:

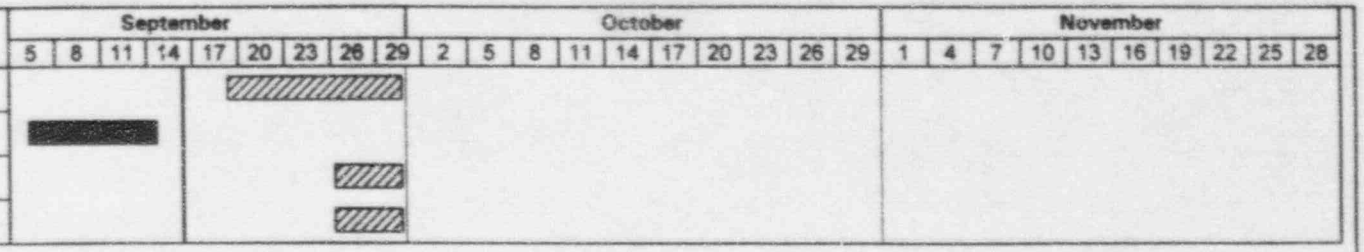
1. Provide industrial safety training to managers and supervisors.

2 CNS Directive 7 requires managers to monitor their areas of responsibility "no less than twice per week. In turn, department supervisors shall also be expected to implement a program which follows these same guidelines."

   2.1 Field Observations will be conducted by Managers during monitoring activities to provide feedback on progress or weaknesses noted. (CNS Procedure 0.11, and proposed new CNS Procedure 0.11, Management Site Inspection, Audit, and Field Observation Program.)

3. The regular General Office Safety and Risk Management Department will provide regular site assistance visits to strengthen the Industrial Safety Program and increase the industrial safety awareness level of CNS Managers and Supervisors.

ID	Name	Resource Names
1	1 Man/Sup Industrial Safety T	Alderman
2	2 Field Observations conduct	Alderman
3	3 General Office Safety & Ris	Alderman
4	4 Develop Specific Plan	Alderman



Project: Industrial Safety
Date: 9/16/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

September 16, 1994 3:59 pm

START-UP ACTION PLAN

ISSUE: Licensing submittals

PROGRAM/PROCESS ISSUE CATEGORY: Management

SPONSOR: R. L. Jones/R. L. Beilke

ACTION PLAN MANAGER: R. Godley

DESCRIPTION OF ISSUE:

Licensing submittals do not always supply sufficient identification, review and accountability for the correctness of information. Additionally, commitments that are embedded in licensing submittals are not clearly identified in internal NPPD documents with accountability for action. This has resulted in reduced credibility to outside agencies, enforcement actions and potential for important safety-related commitments to be missed.

OBJECTIVE:

Development of internal procedures and practices that assure that all licensing submittals contain accurate information and that all commitment made to external agencies are completed on time.

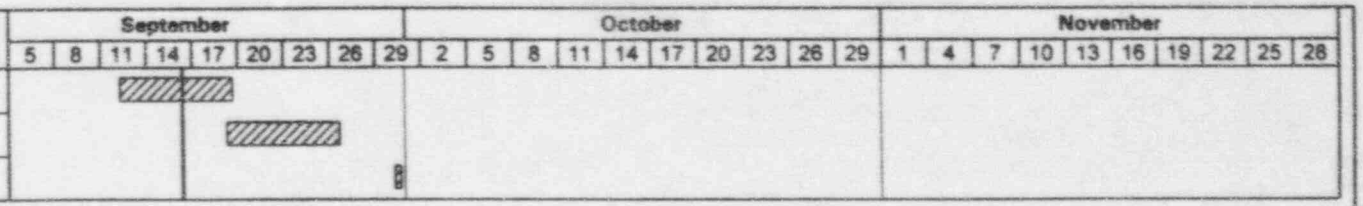
ACTION:

1. Review past problems and current procedures and practices in preparation of licensing submittals.

2. Identify changes to the current procedures and practices that will resolve these past problems. The new procedures should assure that the sources for information in licensing submittals are clearly identified to NPPD management, all commitments and accountable parties are clearly identified, and that commitments are entered into the commitment tracking system prior to signature.

3. Implement the improved practices and procedures for licensing submittals.

ID	Name	Resource Names
1	1 Assemble task group	Godley
2	2 Develop new procedure	Godley
3	3 Implement new procedures	Godley



Project:
Date: 9/16/94

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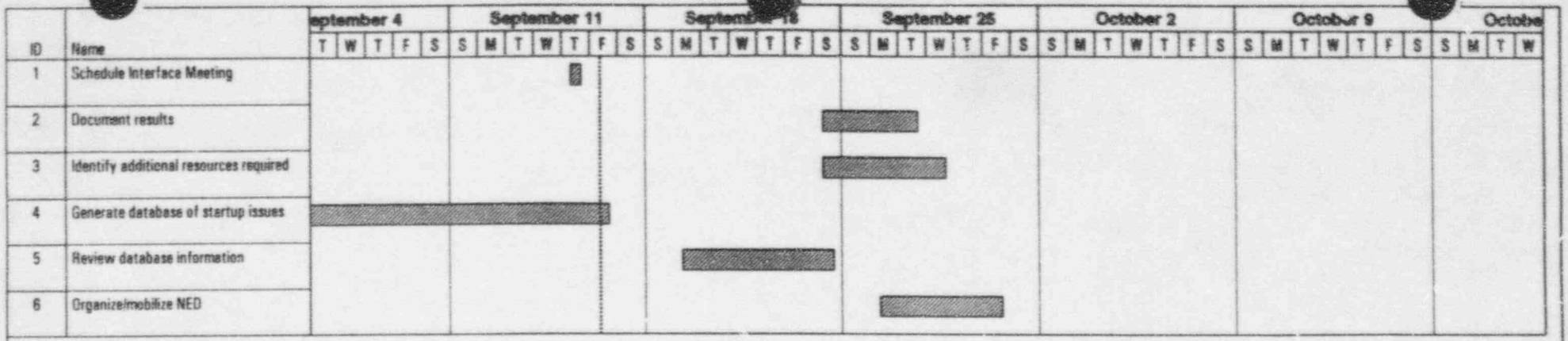


Project:
Date: 9/16/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

START-UP ACTION PLAN

ISSUE: OD/OE Review

PROGRAM/PROCESS ISSUE CATEGORY: Engineering Support

SPONSOR: R. G. Jones/J. E. Lynch

ACTION PLAN MANAGER: C. Moeller

OBJECTIVE:

Review ODs and OEs for degraded and nonconforming conditions that currently exist and assess startup significance.

ACTION:

1. Obtain listing of all ODs and OEs approved to date.

2. Determine status of documented condition.

   2.1 Cross reference each OD/OE to a CAP document or MWR.

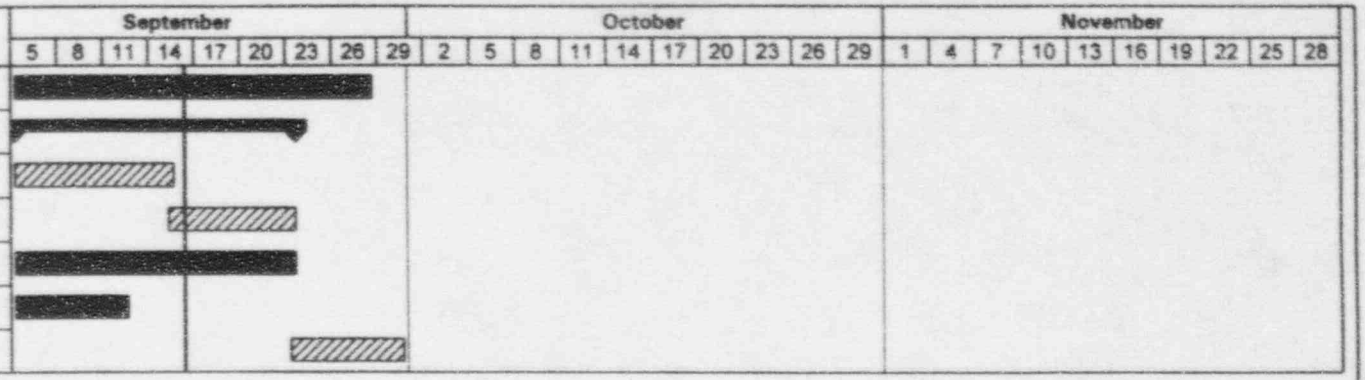
   2.2 Review status of CAP document or MWR to determine if documented condition has been resolved.

3. Review adequacy of "open" ODs/OEs for startup.

   3.1 Adequacy review will be by CNS Engineering or NED, depending on which organization supported the original OD/OE.

4. Evaluate "open" ODs/OEs for cumulative impact.

ID	Name	Resource Names
1	1 Obtain listing	Bowlby
2	2 Determine status	Bowlby
3	2.1 Cross reference to c	
4	2.2 Review status of cap	
5	3 Review adequacy (CNS En	Sanchez
6	4 Review adequacy (NED)	Gay
7	5 Evalute cumulative impact	Swantz



Project:
Date: 9/16/94

Critical
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Progress
Milestone
Summary
Rolled Up

September 16, 1994 8:16 am

START-UP ACTION PLAN

CATEGORY: Plant Testing

SPONSOR: R. L. Gardner/S. C. Woerth

ACTION PLAN MANAGER: S. C. Woerth, R. Brungardt

DESCRIPTION OF ISSUE:

NRC identified preventive and corrective maintenance which would preclude discovery of degraded conditions through scheduled testing. DSAT found insufficient guidance for evaluating potential preconditioning cases to determine whether system functionality concerns potentially exist due to past practices.

OBJECTIVE: Complete resolution of the CAL pre-conditioning issues.

ACTION:

1. Identify and revise station procedures which direct possible pre-conditioning of components:

2. Review and integrate surveillance and PM schedules as necessary to ensure potential preconditioning concerns due to scheduling of activities is precluded. This should be done by performing the following:

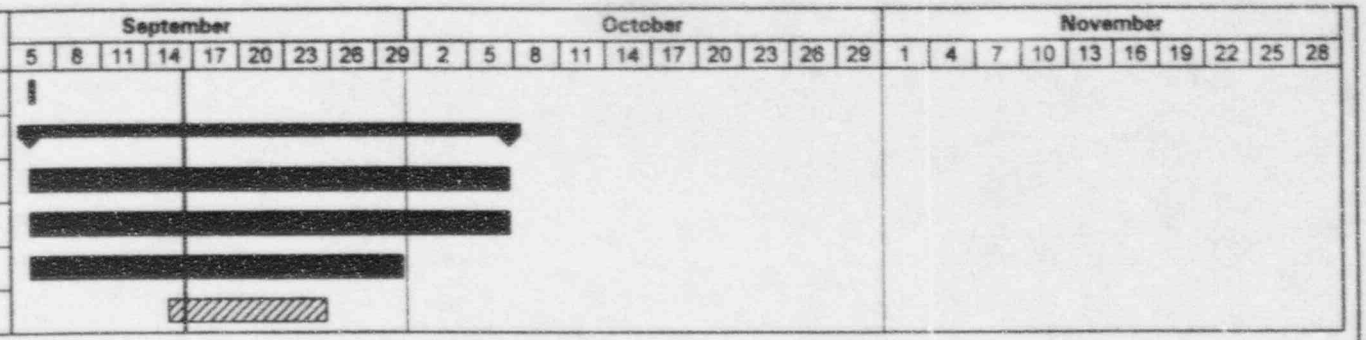
   2.1 Surveillance Coordinator (J. Peaslee) and Maintenance Planner/Scheduler (R. Alexander) jointly devise an interim plan for controlling performance of SPs and PMs to preclude preconditioning.

   2.2 Activate interim plan.

   2.3 Communicate requirements/limitations of interim plan to affected personnel and Management.

3. Include in GOT Training (Initial/Requal).

ID	Name	Resource Names
1	1 Identify/Revise Procedures	
2	2 Review & Integrate Schedul	
3	2.1 Devise interim plan f	Peaslee
4	2.2 Activate interim plan	Peaslee
5	2.3 Requirements/limitati	Peaslee
6	3 Include in GOT Training (Ini	Dutton



Project:
Date: 9/16/94

Critical
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Summary
Rolled Up

September 16, 1994 4:37 pm

START-UP ACTION PLAN

ISSUE: IST and Surveillance Testing

PROGRAM/PROCESS ISSUE CATEGORY: Plant Testing

SPONSOR: R. L. Gardner/S. C. Woerth

ACTION PLAN MANAGER: R. Brungardt

DESCRIPTION OF ISSUE:

Incomplete IST and Surveillance Testing program scope or inappropriate testing methods.

OBJECTIVES:

1. Verify IST program scope and testing adequacy by constructing the basis for component IST requirements and identifying discrepancies.

2. Conduct an evaluation of [types and numbers of] surveillance tests performed to determine program adequacy.

ACTION:

1. IST

   1.1 Complete development of ASME Section XI testing and inspection boundary identification and basis.

   1.2 Accelerate review of system components for testing requirements and development of testing basis which was previously scheduled as part of the third interval IST program update.

   1.3 Compare existing IST Program to the program basis requirements to identify discrepancies.

   1.4 Evaluate identified discrepancies to determine startup concerns.

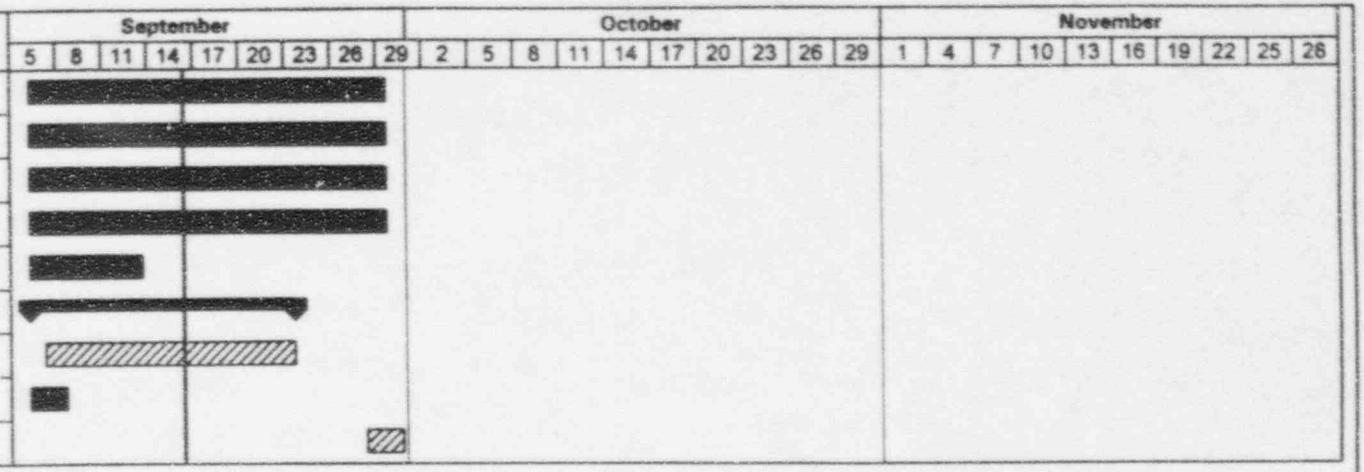
2. Surveillance

   2.1. Obtain of surveillance procedures for selected safety systems from two other BWRs.

   2.2. Compare the listing with CNS surveillance procedures for selected safety systems to identify if the number and types of tests performed at CNS appear to be appropriate.

3. Document review performance. Initiate corrective action for any items of concern noted during the review.

ID	Name	Resource Names
1	1 IST	
2	2 Complete development of A	
3	3 Accelerate review of syste	
4	4 Compare existing IST Progr	
5	5 Evaluate identified discrepa	
6	6 Surveillance	
7	6.1 Obtaining listing	Holm
8	5.2 Compare listing CNS	Holm
9	7 Document review performa	Holm



Project:
Date: 9/16/94

Critical
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Summary
Rolled Up

START-UP ACTION PLAN

ISSUE: Open OERs

PROGRAM/PROCESS ISSUE CATEGORY: Operational Experience Review

SPONSOR: R. L. Jones/S. J. Jobe

ACTION PLAN MANAGER: C. Moeller

OBJECTIVE: Evaluate current open OERs for startup significance.

ACTION:

1. Obtain listing of OER documents received subsequent to previous Stone & Webster review.

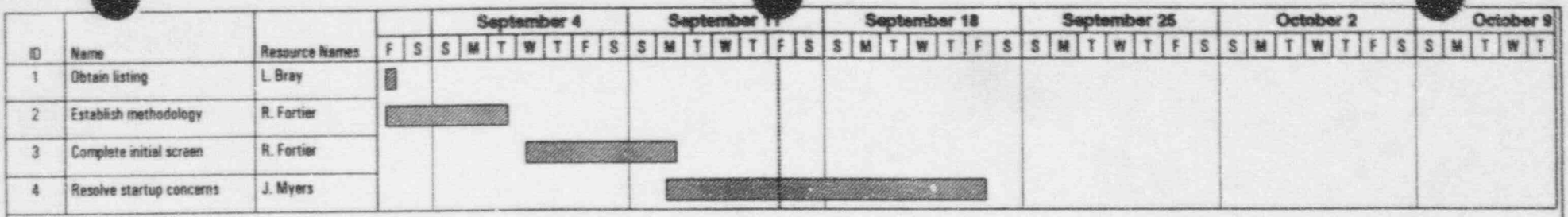
2. Upgrade previous review methodology to reflect current task.

3. Complete initial screen for possible startup signficance.

   3.1 Level 1 and 2 screening to be done by Stone & Webster.

4. Disposition potential startup issues identified by initial screen.

   4.1 OERs identified by Stone & Webster will be directed to the appropriate line organization for further evaluation. This review effort will be coordinated by the Technical Staff.



Project:
Date: 9/16/94

Critical
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Progress
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Summary
Rolled Up

September 15, 1994 10:30 am

START-UP ACTION PLAN

ISSUE: Startup Experience Following Extended Outages

PROGRAM/PROCESS ISSUE CATEGORY: Operational Experience Review

SPONSOR: R. G. Jones/S. J. Jobe

ACTION PLAN MANAGER: C. Moeller

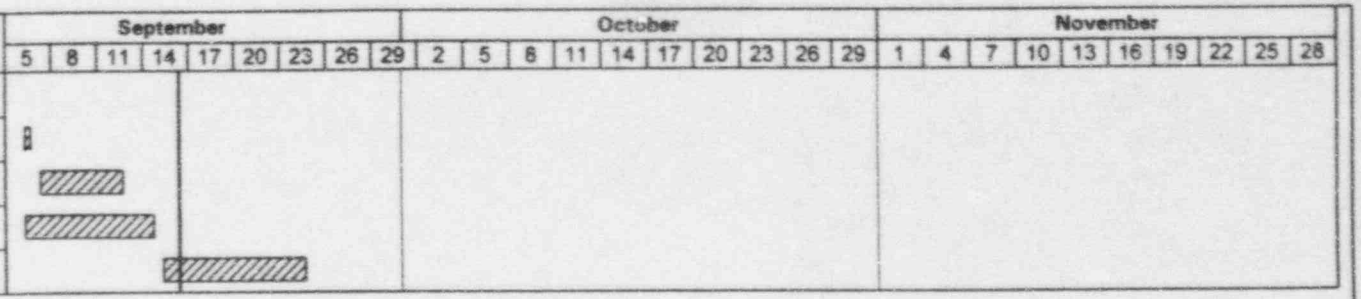
OBJECTIVE:

Conduct special operating experience search for startup issues following long shutdown.

ACTION:

1. Conduct search for industry lessons learned.
2. Obtain listing of CAP documents generated during CNS startups.
   - 2.1 Identify startup dates from extended outages (i.e., greater than 30 days) for last ten years.
   - 2.2 Identify CAP documents generated one week prior to two weeks following startup date.
3. Interview selected CNS personnel for input.
4. Assess INPO, CAP, and interview input for significant startup issues following long shutdown. Assessment to be conducted with at least one individual with SRO background.
5. Develop and schedule training and/or simulator scenarios to emphasis lessons learned.

ID	Name	Resource Names
1	1 Conduct Search	Moeller
2	2 Identify CAP Documents	Myers
3	3 Interview CNS Personnel	Myers
4	4 Assess Input	Myers
5	5 Develop and schedule traini	Shallenberger



Project:
Date: 9/16/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

September 16, 1994 4:15 pm

START-UP ACTION PLAN

ISSUE: Reactor Vessel Thermal Transient

PROGRAM/PROCESS ISSUE CATEGORY: Operational Experience Review

SPONSOR: R. E. Wilbur/S. J. Jobe

ACTION PLAN MANAGER: W. L. Swantz

DESCRIPTION OF ISSUE: Resolve the reactor vessel thermal transient issue.

OBJECTIVE:

Review the reactor vessel and attached piping thermal transients and determine that the thermal fatigue limits have not been exceeded and assure margin adequate for further operation exists.

ACTION:

1. Contacted Roger Reedy concerning code requirements on fatigue. Mr. Reedy stated that no Code Requirements had been violated.

2. All Fatigue Analyses for Class IN Piping have been reviewed. All piping has adequate margins to allow for the number of transients, which Cooper has experienced with the possible exception of the RF piping.

3. The Civil/Structural Group has performed a preliminary review of the RF Piping Fatigue Analysis. Based on this review, they feel that if the existing conservatism in the analysis were to be removed, that the RF piping could be shown to have a Usage Factor < 1.0 based on the number of transients, which Cooper has experienced with adequate margin to spare.

4. Neil Watts of Advent Engineering Services reviewed the CNS RF Piping Fatigue Analysis to help identify possible conservatism in the analysis. Mr. Watts will assist the NED Civil/Structural Group in re-evaluating the RF piping to show that there is still adequate margin in the RF piping, as well as the other IN piping.

5. NED is evaluating the CRD Mechanism Nozzle fatigue based on the thermal cycles observed to date.

6. Revise OE 94-000-050 to limit scope of discussion to technical evaluation. Remove section on long-term operability. Add discussion on long-term reporting requirements of T.S. Sect. 6.4., *this will remove CR 94-0599 resolution from the startup issues list.*

7. Vectra to incorporate the results of NEDC 94-208 into the attachments of the Operability Evaluation.

8. Add paragraph which deals with the impact of the Dec. 14, 1993, stratification event on CRD nozzles. Also mention that these nozzles should be considered a limiting component in vessel fatigue summary.

9. Final version of OE 94-000-050 prepared, checked and approved at GO.

10. Operability evaluation 94-000-050 and Attachments (fax copy) distributed to SORC by 9/15/94 a.m., with SORC convened on 9/16/94 a.m., (KES and GRT present) and expected approval no later than 9/16/94 p.m.

CONCLUSION: The long-term action plan for CR 94-599 will require and define the plan for monitoring and documentation of actual thermal cycles to ensure future operability of the primary system pressure boundary (require resolution prior to Cycle 17 startup). OE will be SORC approved on 9/16/94. No interim actions needed prior to startup.

START-UP ACTION PLAN

ISSUE: Develop procedure hierarchy to identify controlling procedures

PROGRAM/PROCESS ISSUE CATEGORY: Procedure Control

SPONSOR: R. L. Jones/E. M. Mace

ACTION PLAN MANAGER: C. R. Moeller

DESCRIPTION OF ISSUE:

There is no management position on which procedures take precedence over others.

OBJECTIVE:

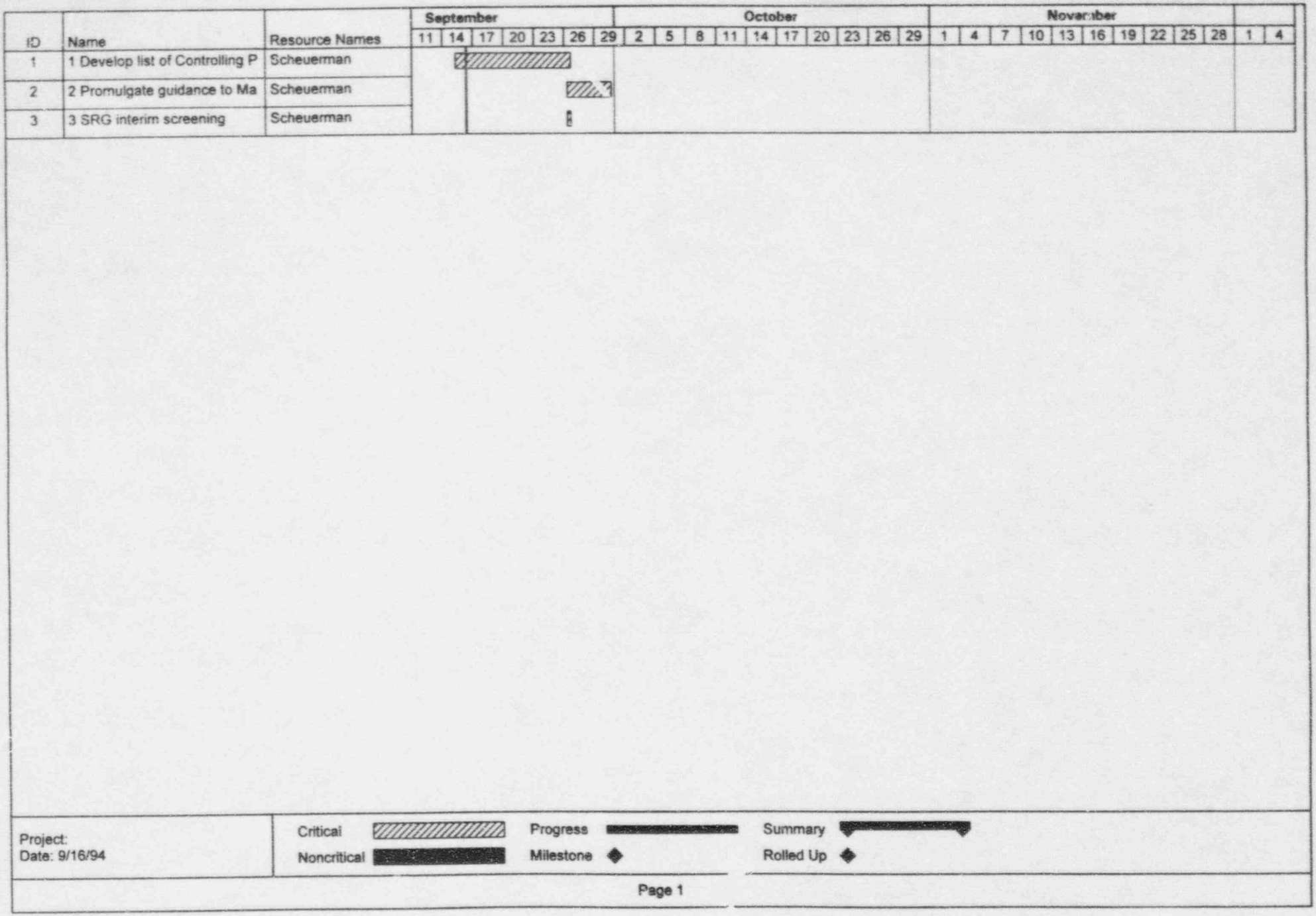
Identify all procedures which control and take precedence over other procedures. Screen lower level procedures for compliance with controlling procedures.

ACTION:

1. Develop list of controlling procedures utilizing procedure hierarchy process used at another utility (Nine Mile).

2. Promulgate procedure hierarchy guidance and procedure list to NPG Managers and Supervisors.

3. SRG provide interim screen for procedure revisions to ensure compliance with controlling procedures.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11 14 17 20 23 26 29 2 5 8 11 14 17 20 23 26 29 1 4 7 10 13 16 19 22 25 28 1 4
1 1 Develop list of Controlling P Scheuerman
2 2 Promulgate guidance to Ma Scheuerman
3 3 SRG interim screening Scheuerman
Project:
Date: 9/16/94
Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

START-UP ACTION PLAN

ISSUE: Special Instructions

PROGRAM/PROCESS ISSUE CATEGORY: Procedural Control

SPONSOR: R. L. Gardner/E. M. Mace

ACTION PLAN MANAGER: C. M. Estes

DESCRIPTION OF ISSUE:

Numerous problems have been experienced with the use of Special Instructions at CNS. Among these problems have been the absence of SORC approval, technical and procedural inadequacy of the instructions, and absence of adequate validation and walk-down of the instructions prior to their use. These deficiencies have resulted in a range of problems, from inadequate control of work to tripping or initiation of Engineered Safeguard Systems.

OBJECTIVE:

Develop procedural controls and methods that ensure work performed using Special Instructions is performed at a quality and safety level consistent with that of existing SORC approved procedures.

ACTION:

1. Ensure that all Special Instructions used on work that could have an effect on nuclear safety are reviewed and approved by the SORC.

   Status: Maintenance Procedure 7.0.1.2, Revision No. 2, dated August 27, 1994 contains a CAUTION statement after paragraph 8.1.2.3 that reads in part as follows; "SPECIAL INSTRUCTIONS to perform maintenance on system components and/or systems that could have an effect on nuclear safety shall be reviewed by SORC prior to issue." **THIS ACTION IS COMPLETED.**

2. Ensure that Special Instructions are not used to isolate work boundaries for personnel protection. This must remain within the exclusive authority of the Plant Clearance Order process.

Status: Maintenance Procedure 7.0.1.2 has been revised, (Rev. 2, 8/27/94) to include the statement in step 8.1.2.3.c.1.e.5 that requires that valve, breaker, or damper operation be performed per Procedure 2.0.1. (Conduct of Operations). In addition, Administrative Procedure 0.9, Rev. 15, dated 8/30/94, step 4.2.1 requires that Operations personnel be responsible for the generation and release of Clearance Orders and Caution Tag Orders. **THIS ACTION IS COMPLETED.**

(3) Validate and walk-down Special Instructions prior to SORC review.

Status: Procedure 7.0.1.2 under section 8.1.2.3 (Special Instructions) requires the Originator's Supervisor to evaluate all Special Instructions per the following criteria to determine if a technical walk-down is required prior to approval.

1) The Special Instructions are comprised of a long sequence of steps.

2) Special Instructions contain steps important to nuclear or personnel safety.

In addition, a MWR Special Instruction cover sheet, (M.P. 7.0.1.2, Rev. 2, Att. 3), is required for all MWR Special Instructions. This attachment requires sign off's for the "walk-down" activity as determined necessary by the originator's supervision. **THIS ACTION IS COMPLETED.**

September 15, 1994 10:30 am

START-UP ACTION PLAN

ISSUE: Screen backlog of procedure changes for significant items for start-up

PROGRAM/PROCESS ISSUE CATEGORY: Procedural Control

SPONSOR: R. G. Jones/E. M. Mace

ACTION PLAN MANAGER: C. Moeller

DESCRIPTION OF ISSUE:

There are ~ 400 procedures currently in the change process; ensure screening applied to these changes remain valid.

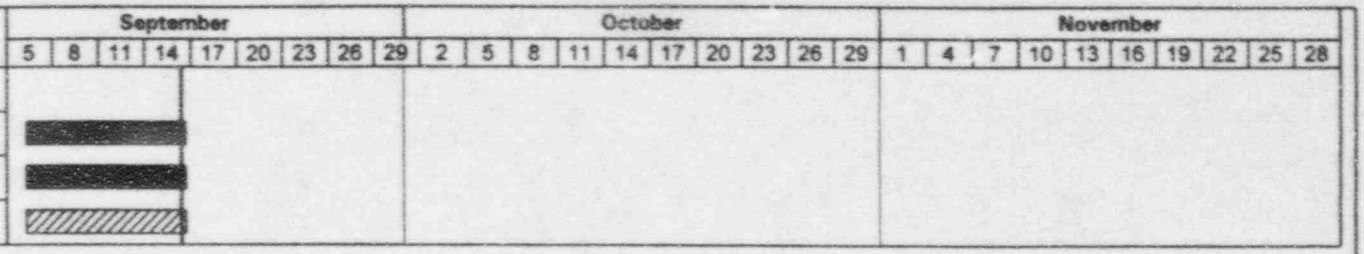
OBJECTIVE:

Identify all in-process procedure changes requiring approval prior to start-up or early in start-up sequence and ensure entry into tracking system.

ACTION:

1. Develop checklist of start-up related issues for screen.
2. Incorporate checklist into screen performed on future in-coming procedure changes.
3. Apply screen to assess validity of assigned priority.
4. Develop implementation schedule for start-up related procedures.

ID	Name	Resource Names
1	1 Develop Screen checklist	Scheuerman
2	2 Incorporate checklist for fut	Scheuerman
3	3 Apply screen to current PC	Scheuerman
4	4 Develop implementation sc	Scheuerman



Project:
Date: 9/16/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

START-UP ACTION PLAN

ISSUE: ADAM Changes

PROGRAM/PROCESS ISSUE CATEGORY: Procedural Control

SPONSOR: E. M. Mace

ACTION PLAN MANAGER: N/A

DESCRIPTION OF ISSUE:

Resolution of the impact of EPA-400 methodology on the atmospheric dispersion assessment model (ADAM)

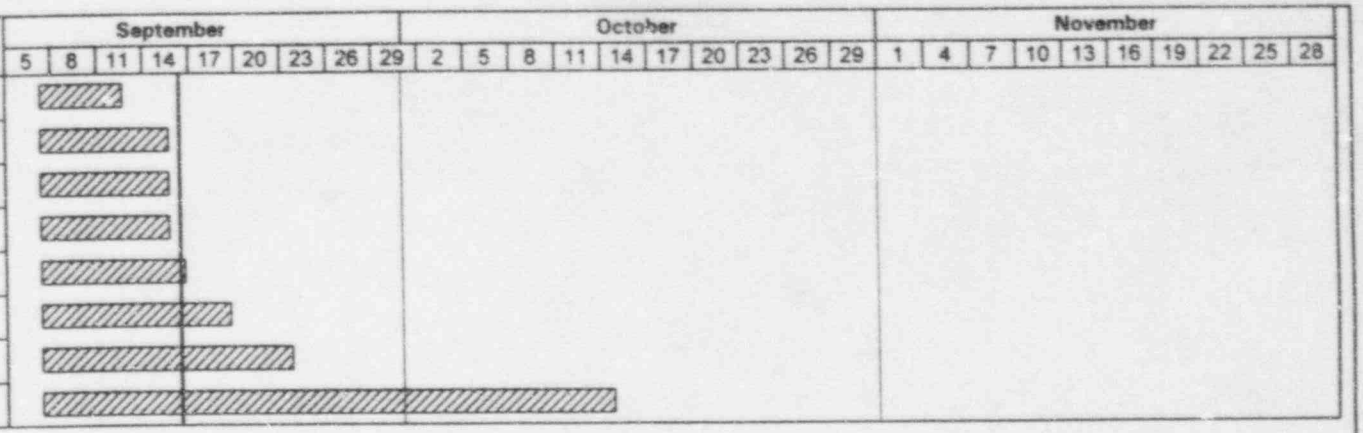
OBJECTIVE:

Purge ADAM (class "B" model, as defined in NUREG 0654) of all reference to dose, dose rate and any use there of for determination of PARs.

ACTION:

1. Complete ADAM code changes.
2. Revise ADAM section in EPIP 5.7.17.
3. Complete EAL revisions in EPIP 5.7.1.
4. Emergency Plan change submitted for SORC Review/Approval.
5. Emergency Plan Change submitted for SRAB Review/Approval.
6. Complete NRC submittal of Emergency Plan Change.
7. Emergency Plan printed and distributed.
8. Complete training for Dose Assessment personnel.

ID	Name	Resource Names
1	1 ADAM Code changes	Parks,McCain
2	2 EPIP 5.7.1 Revise ADAM s	Kelsay
3	3 EPIP 5.7.1 EAL revisions	Kelsay
4	4 Emergency Plan Change-S	
5	5 Emergency Plan Change-S	Krumland
6	6 Emergency Plan Change-N	Krumland
7	7 Emergency Plan Change-E	Krumland
8	8 Training for Dose Assessm	Wellman,Hayden



Project: ADAM Changes
Date: 9/16/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

START-UP ACTION PLAN

ISSUE: Method for handling surveillance test LCOs without allowed outage times

PROGRAM/PROCESS ISSUE CATEGORY: Procedural Control

SPONSOR: R. L. Gardner/E. M. Mace

ACTION PLAN MANAGER: R. Brungardt

DESCRIPTION OF ISSUE:

Administrative controls for allowed out-of-service times do not exist for Technical Specification instrument surveillances.

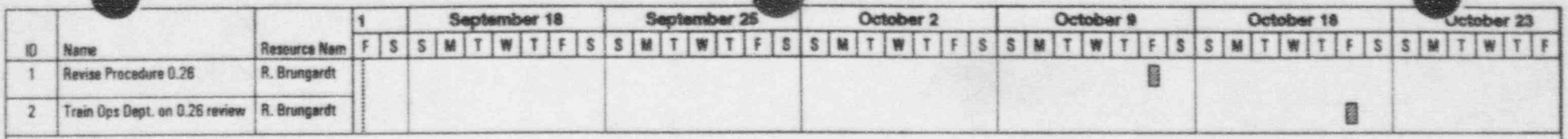
OBJECTIVE:

Provide administrative controls for allowed out-of-service times for Technical Specification instrument surveillances.

ACTION:

1. Revise Procedure 0.26 to implement administratively controlled out-of-service times for Technical Specification instrument surveillances.

2. Conduct Operations Department training on Procedure 0.26 out-of-service time revision.



Project:
Date: 9/16/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

START-UP ACTION PLAN

ISSUE: Resolve the lack of program ownership in the NPG

PROGRAM/PROCESS ISSUE CATEGORY: Management

SPONSOR: R. G. Jones/R. L. Beilke

ACTION PLAN MANAGER: R. G. Jones

DESCRIPTION OF ISSUE:

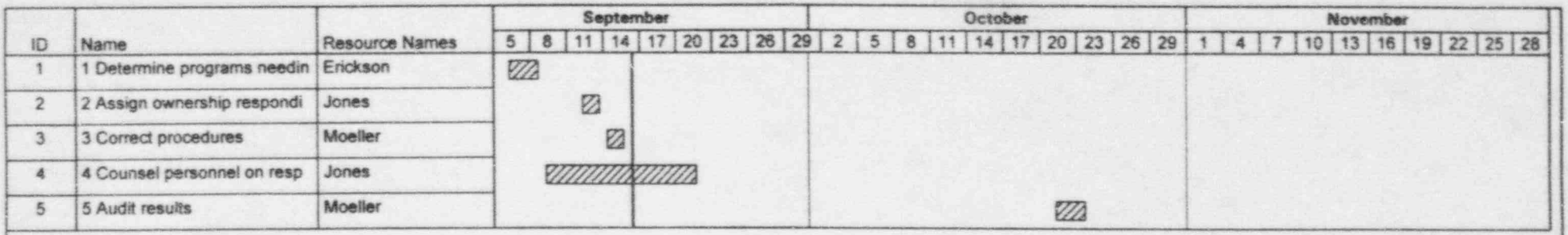
Some NPG programs lack ownership. These programs need to be identified and procedures changed to clearly provide one owner who has the overall responsibility and authority to carry out that respective program. This issue must be resolved so that programs can be effectively managed and proper accountability assigned.

OBJECTIVE:

Establish effective ownership for programs which affect reactor safety.

ACTION:

1. Determine which programs need ownership corrective action.
2. Assign ownership responsibilities.
3. Correct procedures as required.
4. Counsel selected personnel assigned program ownership on responsibilities.
5. Evaluate effectiveness of results.



ID	Name	Resource Names
1	1 Determine programs needin	Erickson
2	2 Assign ownership respondi	Jones
3	3 Correct procedures	Moeller
4	4 Counsel personnel on resp	Jones
5	5 Audit results	Moeller

Project: Program Ownership
Date: 9/16/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

September 16, 1994 3:57 pm

START-UP ACTION PLAN

ISSUE: Nuclear Safety Awareness

PROGRAM/PROCESS ISSUE CATEGORY: Management

SPONSOR: E. M. Mace/R. L. Beilke

ACTION PLAN MANAGER: J. Dutton

DESCRIPTION OF ISSUE:

The NPG has been ineffective in fostering and promoting a heightened sensitivity and awareness of Nuclear Safety.

OBJECTIVE:

Strengthen the NPG nuclear safety culture and establish high standards of safe, reliable nuclear plant operation.

ACTION:

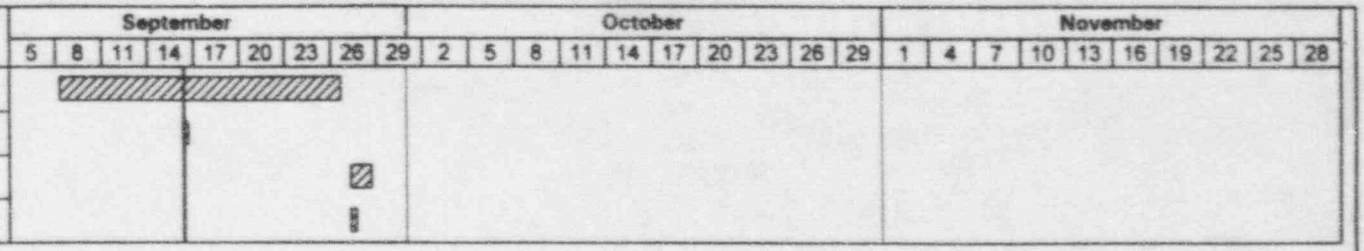
1. Provide SORC, Managers, System Engineers, Design Engineers, and Supervisors with comprehensive Nuclear Safety Culture training.

2. Develop Nuclear Safety Culture training for presentation to entire NPG.

3. Senior Managers present Nuclear Safety Training to their reporting personnel.

4. Conduct ongoing field observations and solicit feedback to determine effectiveness of training.

ID	Name	Resource Names
1	1 Managers Nuclear Safety C	Rotkvic
2	2 NPG Nuclear Safety Cultur	Rotkvic
3	3 Senicr Managers present Tr	Dutton
4	4 Conduct Effectiveness Revi	Jones



Project:
Date: 9/16/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

START-UP ACTION PLAN

ISSUE: Management Observations - Field Coaching Team Plus Management Observations

PROGRAM/PROCESS ISSUE CATEGORY: Management

SPONSOR: R. L. Gardner/R. L. Beilke

ACTION PLAN MANAGER: J. V. Sayer

DESCRIPTION OF ISSUE:

Management's involvement in the field is not sufficient to ensure work is maintained to high standards with respect to industrial safety, procedural adherence, and material conditions. As such, basic concepts in the operation of a nuclear power facility are not being communicated to the work force, nor are they well understood or practiced at CNS.

OBJECTIVE:

Increase Management and Supervisory involvement in the field in order to:

1. Assess station material conditions
2. Assess compliance with established radiological and industrial safety work practices
3. Assess compliance with station work documents
4. Coach and mentor personnel in the field
5. Re-enforce management's expectations and standards in the field
6. Improve organization communication channels

ACTION:

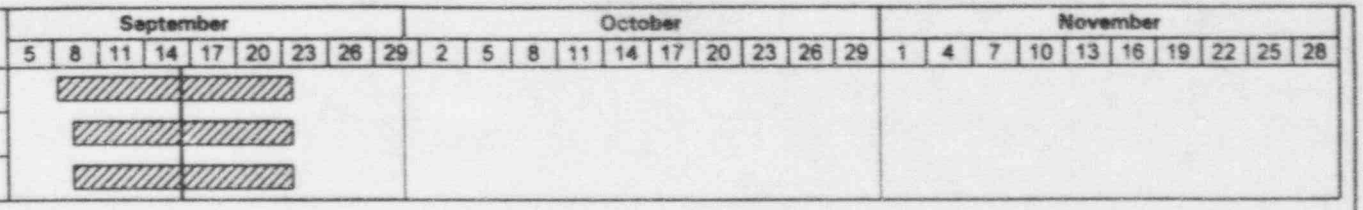
1. Develop manager/supervisor field observation checklist which assists managers/supervisors in accomplishing the objectives listed above.

2. Develop standard manager/supervisor field observation schedule which specifies

dates and blocks of time to conduct field observations. Include specific management issues to be reviewed with schedule.

3. Review with Field Coaching Team the objectives of the Start-up Issues Plan. The Field Coaching Team provides specific issues with regard to appropriate field knowledge of the Startup Issues Plan and manager/supervisor involvement in the field.

ID	Name	Resource Names
1	1 Develop Obsevation Checkl	Beilke
2	2 Develop Schedule	Beilke
3	3 Field Coaching	Beilke



Project:
Date: 9/16/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

September 15, 1994 10:30 am

START-UP ACTION PLAN

ISSUE: Industrial Safety

PROGRAM/PROCESS ISSUE CATEGORY: Management

SPONSOR: E. M. Mace

ACTION PLAN MANAGER: H. Hitch

DESCRIPTION OF ISSUE:

Industrial safety practices in the station are considered a weakness. Management expectations regarding industrial safety are frequently ignored or otherwise not carried out by the employee population. Observations were sufficiently numerous to indicate that management is either not out in the plant observing or, if they are, are not regularly enforcing expectations.

OBJECTIVE:

One of the major objectives of the District is to protect its employees and the public from accidents. Whenever economically possible, the District will eliminate hazards from employee work areas. However, where hazards cannot be economically removed, it becomes the responsibility of each supervisor and employee to recognize these hazards and deal with them in a manner that will prevent accidents.

ACTION:

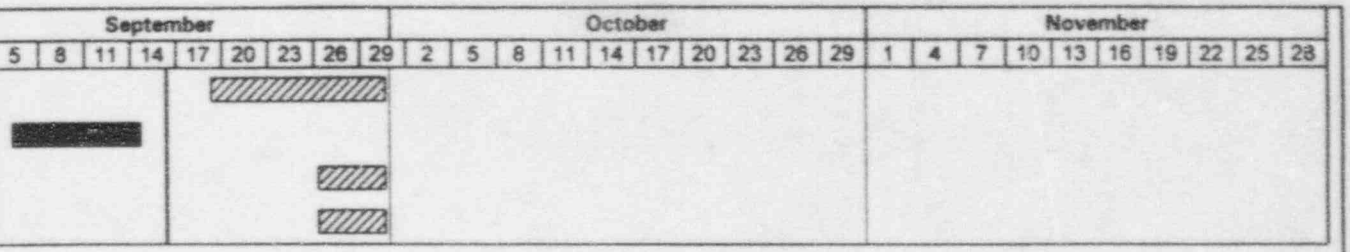
1. Provide industrial safety training to managers and supervisors.

2 CNS Directive 7 requires managers to monitor their areas of responsibility "no less than twice per week. In turn, department supervisors shall also be expected to implement a program which follows these same guidelines."

   2.1 Field Observations will be conducted by Managers during monitoring activities to provide feedback on progress or weaknesses noted. (CNS Procedure 0.11, and proposed new CNS Procedure 0.11, Management Site Inspection, Audit, and Field Observation Program.)

3. The regular General Office Safety and Risk Management Department will provide regular site assistance visits to strengthen the Industrial Safety Program and increase the industrial safety awareness level of CNS Managers and Supervisors.

ID	Name	Resource Names
1	1 Man/Sup Industrial Safety T	Alderman
2	2 Field Observations conduct	Alderman
3	3 General Office Safety & Ris	Alderman
4	4 Develop Specific Plan	Alderman



Project: Industrial Safety
Date: 9/16/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

September 16, 1994 3:59 pm

START-UP ACTION PLAN

ISSUE: Licensing submittals

PROGRAM/PROCESS ISSUE CATEGORY: Management

SPONSOR: R. L. Jones/R. L. Beilke

ACTION PLAN MANAGER: R. Godley

DESCRIPTION OF ISSUE:

Licensing submittals do not always supply sufficient identification, review and accountability for the correctness of information. Additionally, commitments that are embedded in licensing submittals are not clearly identified in internal NPPD documents with accountability for action. This has resulted in reduced credibility to outside agencies, enforcement actions and potential for important safety-related commitments to be missed.

OBJECTIVE:

Development of internal procedures and practices that assure that all licensing submittals contain accurate information and that all commitment made to external agencies are completed on time.

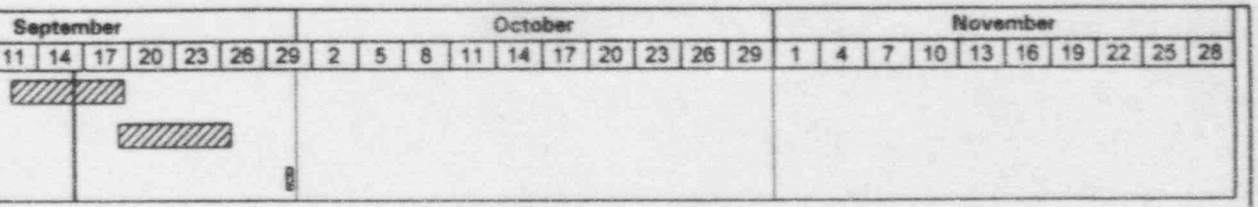
ACTION:

1. Review past problems and current procedures and practices in preparation of licensing submittals.

2. Identify changes to the current procedures and practices that will resolve these past problems. The new procedures should assure that the sources for information in licensing submittals are clearly identified to NPPD management, all commitments and accountable parties are clearly identified, and that commitments are entered into the commitment tracking system prior to signature.

3. Implement the improved practices and procedures for licensing submittals.

ID	Name	Resource Names
1	1 Assemble task group	Godley
2	2 Develop new procedure	Godley
3	3 Implement new procedures	Godley



Project:
Date: 9/16/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

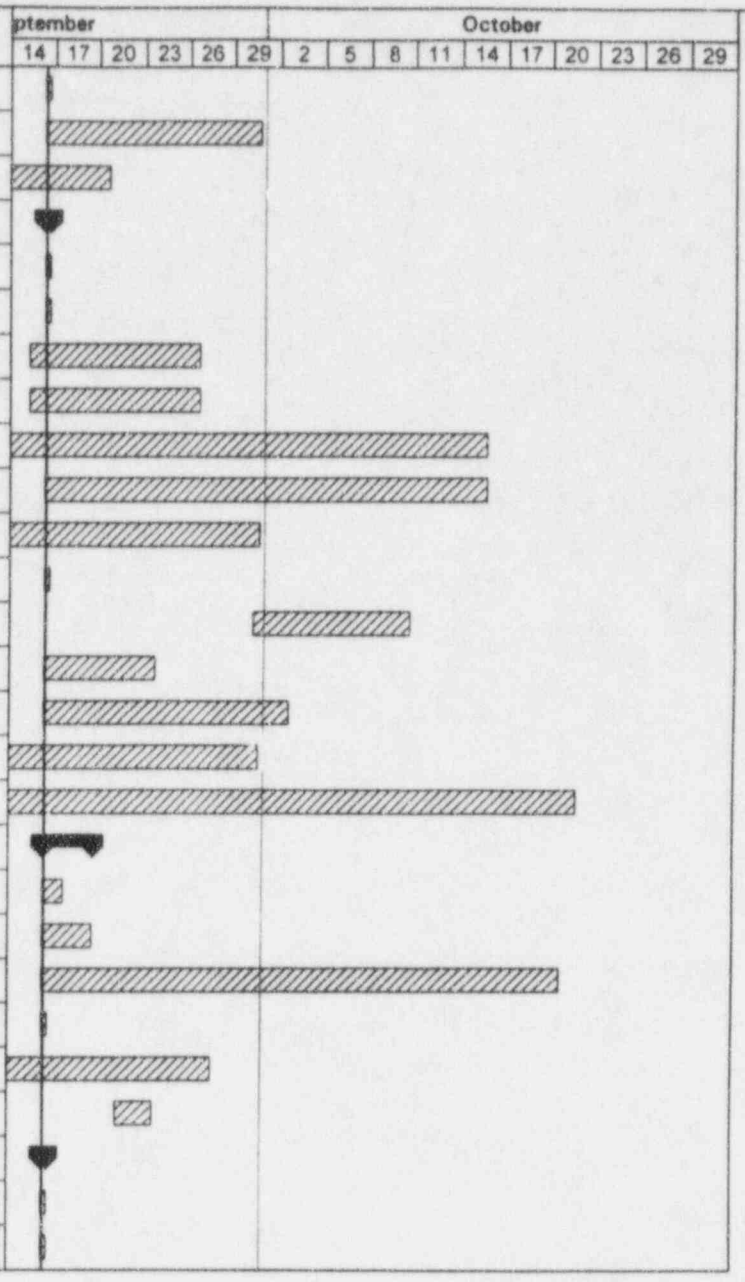
APPENDIX A - ACTION ITEM LIST

In addition to the action plans presented in the previous section, the Startup Plan Team identified a number of additional discrete action items that need to be addressed before startup. These items include review or close-out actions resulting from the team's effort in developing the plan or other discrete action items not warranting a full plan.

ACTION ITEM	ACCOUNTABLE
Evaluate DSAT field notes for long-standing equipment problems	E.M. Mace
Determine of control of spare parts for safety classification is a startup issue.	S.J. Jobe
Review DSAT material condition-hardware items for startup	E.M. Mace
Submit letter to NRC to clarify MOV testing schedule - Schedule - Letter	K. Almquist R. Godley
Resolve CS-5A maintenance and testing commitments.	K. Almquist
Determine if LERs contain any MOV overthrust issues	K. Almquist
Screen and correct APA-identified potential startup items. Ensure CRs are written when necessary	W.L. Swantz
Complete OER review; review for generic implications.	S.J. Jobe
Complete MWR Maintenance Work Practices Review, review results, and resolve recommendations.	E.M. Mace
Determine if action needs to be taken prior to startup for the "design change correcting the problem" issue.	S.C. Woerth

Evaluate the power ascension plan for integration with the Phase 1 startup plan. Include establishing management expectations for an error-free startup and other expectations.	E.M. Mace
Determine if action is needed to assure technical adequacy of design changes	K.C. Walden
Ensure specific issues are addressed in revised clearance order program - Non-operators operating equipment - Pull-to-lock protection use - Overriding danger tags - Independent verification	S.J. Jobe
DCNs for Control Room P&IDs and electrical one-line drawings	K.C. Walden
ECCS minimum flow supplemental response to IEB 88-04	S. McClure
Training of craft and crews for configuration control procedure changes - Valve operation guidance - Guidance document & affected procedures	T. Chard
Complete LER review	S.J. Jobe
Complete MWR review	M. Estes
Core Spray test mode vibration analysis	S. McClure
Convene management team to identify design changes that need to be completed prior to startup.	J. Gaussman
Complete cycle extension schedule and letter to NRC - Schedule - Letter	R. Jansky R. Godley

ID	Name	Resource Names
1	1 Evaluate DSAT notes for lo	E. M. Mace
2	2 Determine if spare part cont	S. J. Jobe
3	3 Review DSAT mat'l. conditi	E. M. Mace
4	4 Submit letter to NRC to clar	
5	4.1 Schedule.	K. L. Almquist
6	4.2 Letter.	R. C. Godley
7	5 Resolve CS-5A maintenanc	K. L. Almquist
8	6 Determine if LERs contain	K. L. Almquist
9	7 Screen/correct APA-identifi	W. L. Swantz
10	8 Complete OER review; revi	S. J. Jobe
11	9 Complete MWR MWP revie	E. M. Mace
12	10 Determine if action neede	S. C. Woerth
13	11 Evaluate power asc. plan f	E. M. Mace
14	12 Determine if action neede	K. C. Walden
15	13 Ensure specific issues are	S. J. Jobe
16	14 DCNs for Control Room P	K. C. Walden
17	15 ECCS minimum flow supp	M. S. McClure
18	16 Training craft/crews for co	
19	16.1 Valve operation gui	T. J. Chard
20	16.2 Guidance documen	T. J. Chard
21	17 Complete LER review.	S. J. Jobe
22	18 Complete MWR review.	C. M. Estes
23	19 Core Spray test mode vibr	M. S. McClure
24	20 Convene mngt. team to id	J. W. Gausman
25	21 Complete cycle extension	
26	21.1 Schedule.	R. A. Jansky
27	21.2 Letter.	R. C. Godley



Project: Action Item List
Date: 9/16/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

Material

15-Sep-94

BIN	seq	Text
M	CB-02	The station is living with a long-term equipment problem in the standby gas treatment system by blocking the filter housing viewing ports with tape.

Need Engineering to provide resolution (JEL).

M	CB-15	The neutron monitor system engineer was interviewed regarding his judgment on postponing implementation of SIL 564 until next refueling outage.

Need Engineering to determine implementation schedule (JEL).

M	CB-18	Spurious actuation of an electrical protection assembly (EPA) on the output of the RPS motor generator. Recurring unexpected half-scrams and containment isolation due to spurious tripping of RPS motor-generator protective relays.

Need Engineering to determine if DC- 93-095 corrected the problem.
DC 93-095 has not yet been implemented DC 93-095 will be implemented during the '95 Refueling

M	CB-20	Unexpected cycling of core spray minimum flow flow valves due to a long-standing problem with flow instrumentation (CB-20).

Engineering to determine if DC 93-095 corrected the problem (GSM).
MWR 94-2900

M	DK-02	SBGT A&B room- some trash on the floor, two equipment ID tags laying on a support.

UT Working
Priority 1

BIN	seq	Text
M	DK-02	RCIC area - two solenoid valves with yellow tape labels, painted plywood over hole in concrete mezzanine.

1. Found tape on operators for RCIC-AO-12 & RCIC-AO-13 valves had proper labeling in the form of valve tags removed tape from operators. (RB)

M	DK-02	Steam Tunnel entrance- Writing all over the hallways- needs painting.

UT Working
Priority 1

M	DK-02	Stairwell - Radio cable strung through penetration and tie-wrapped to piping and going down several floors.

Wrote CR to have antenna and cable removed 9/12/94.
(RB)

M	DM-08	The control room HVAC system was not classified as essential (PTM 94-14).

Engineering to determine resolution (JEL).

M	DM-08	Pressure guages on DG air start are not essential (PTM 94-14).

Engineering to determine proper classifcation (JEL).

M	DM-08	Marota Scientific Controls supplied valves to essential application not treated as safety-related were installed (see OD 94-063).

Engineering to determine proper classification (JEL).

BIN	seq	Text
M	DM-09	RHR HX divider plate indicators are pegged low due to plugging.

Need CR to document and resolve (JEL).

M	DM-09	Condenser 1A2 water box D/P line partially cloged due to silt.

See MWR's 94-2692 (status: Closed)
94-2787 (status: P Hold)

M	DM-09	SW pumps are rotated periodically due to silt buildup in them while not running.

Engineering to address (JEL).

M	DM-09	Intake structure sparger equipment problems have existed for some time and were only recently addressed.

Working out

M	DM-09	Service Water switches plugging with silt.

Engineering to address (JEL).

M	DM-09	CW flow transmiters indicate 0 GPM and Alert lights lit due to flow transmitter sensing line plugging (94-2206, 0064, 1907).

MWR's 94-2206, 94-0064, and 94-1097 are still open. (RB)

BIN	seq	Text
M	GW-09	Although many of the problems that could be corrected by updating drawings or databases have been addressed, station actions to correct physical problems (tagging, labeling, physical repairs, and procedure revisions) have sometimes not been timely. As of April 30, 1994, 111 Type 2 and 827 Type 4 items were still awaiting resolution. Also, as of April 30, there was a total of approximately 2,400 of the discrepancies awaiting resolution.

Resolution in progress (WLS).

M	GW-15	A review of RHR pump 1B test data noted that the pump had not achieved the reference value for a number of tests, with the differential pressure typically falling about 10 psi short of the reference value.

Need CR to document and resolve (JEL).

M	GW-15	During additional RHR system walkdowns, the system engineer noted a tygon tube that exited from under the insulation on the "A" heat exchanger and was tie-wrapped to a nearby service water drain line, leading to a floor drain. When questioning other personel about the purpose of the "gutter" the system engineer learned that there was a leak around a flanged connection on the heat exchanger that had existed since approxiamtely 1986.

Repairs initiated by MWR's 94-4377, 94-4491, 94-4510, 94-4639, 94-4640.
Additional Engineering Evaluation required for final resolution (JEL).

M	GW-15	It was later determined that the cause of the shutdown cooling isolations was leakage past the pump minimum flow valve, since the valve indicated closed, but was not fully seated.

Need CR to document and resolve (JEL).

BIN	seq	Text
M	GW-15	During a walkdown with the mechanical system engineer, the evaluator noted that differential pressure switch RHR-125B was reading off-scale high.

Need CR to document and resolve (JEL).

M	MDM-10	The control switch for main turbine bearing lift pump is in manual to prevent operation while the speed input to its control circuit is erractic.

Repaired by MWR 93-3128 closed 6-7-94
CTO 93-100 released 9-11-94 (RB)

M	MDM-10	The B RFP minimum flow valve leaks by its seat at 200 gpm and as a result is kept isolated.

Work completed under MWR 94-3411.

M	MDM-10	Caution tag guidiance not to bias RFC-MA-84A/B positive due to causing RFPs to not go into track and hold following a scram. This occured during scram 93-02.

NCR 93-265 answered this concern, a procedure has been completed, caution tags have been removed.
(RB)

M	MDM-10	Drywell F sump low level cutout switch doesn't reset until level is high.

DC being developed for next refueling outage (GSM).

M	MDM-10	A caution tag informs operators that operation of DGSA-V-37 or 38 with their PCV failing, could overpressurize the DG H&V air piping (6/18/94).

MWR 94-4667 (status P Hold)
94-4668 (status P Hold)

BIN	seq	Text
M	MDM-10	Because the demin water LCV leaks by the seat, it has been isloated requiring operators to manually open DW-34 prior to starting the Mechanical Vacuum Pump from the MCR.
Reviewing MWR - may be closed (CME)		
M	MDM-10	While operating at full power on January 19, 1994 the HPCI pump minimum flow valve unexpectedly opened during a surviellance test.
NCR 94-011 LER 94-001		
M	MDM-10	RHR HX outlet conductivity ANN bypassed.
Conductivity elements are normally valved out of service, stagnant water causes hi cond. Alarms. Only used for Steam Condensing Mode of RHR. Procedure 2.2.69.4 Covers valving in & enabling points for		
M	MDM-10	In shutdown Cooling (SDC) operations the RHR system heat exchanger outlet valve, which is not design to be throttled, is throttled to control cooling to avoid throttling of Service Water (SW) valves designed for this purpose.
CR 94-0598 generated to resolve issue. S/NO-07532		
M	MDM-10	More emphasis should be placed on minimizing the number of oil leaks in the plant.
Currently, containing oil leaks when pumps are run will write CR, evaluate & Fix oil leaks. Write level 2 CR. (CME)		
M	MDM-10	Because Vessel level injection valve NBI-SOV-738/739 leaks past seat, NBI-V-577A/B is isolated.
MWR's 94-3537 and 94-3801 corrrected problem.		

BIN	seq	Text
M	MGW-02	Monitoring of potential erosion of portions of the RHR system were not established as required by the modifications made to the flow trim on valves MO-27A/B and 34A/B.

Need Engineeing evalution to determine need (GSM).
Hillstrom working on, to be trasmitted later. (GSM).

M	MSV-03	Leakage in the REC (rector equipment cooling) piping has not been adequatlely monitored to minimize the potential for leakage and impact on plant operations.

Engineering to address issue (JEL).

M	MSV-03	Temporary Design Change (TDC) 91-116 (Cameras in Heater Bay) has been installed for greater than the established goal of six months. (RC-09)

Generate design change (GSM).
To be documented in DC 92-100 which is scheduled for the 1995 outage. Procedure 3.4.4 states a TDC

M	MSV-03	SCRAM discharge level transmitters installed with improper bolting and loose bolts on the RHR motor.

Engineering add CR references (JEL).

M	MSV-03	During B Loop shutdown cooling, flow turbulance caused 'chugging' sounds in the vicinity of the heat exchanger bypass valve, RHR-MO-66B. (GW-08)

MWR's 94-4181 and 94-4180 addressed this.

BIN	seq	Text
M	RA-09	Essential relays are not being tested or maintained on a regular basis. Per the EDAN report, these include 18 ground detection relays (50G) on 4160V buses 1F and 1G and Emergency Transformer overvoltage relays.

A CR was written for ground detection relays on the 4160 Volt Buses, this CR was generated on July 18, 1994, and was assigned as CR 94-0440, see attached NAIT and NCAP printout sheets. (GSM).

M	RB-12	Loud, possibly cavitation, noise at water box south of downstream of RF-28MV.

Need Engineering Evaluation (JEL).

M	RB-12	The contaminated area around the front standard is not marked on the floor with tape. This is the only exception noted.

Resolved.

M	RB-12	Two overheard troughs outside MVP room have drain hoses that end outside the sump barriers. If draining occurs this will result in unneccessary pooling in the corridor.

Need Engineering Evaluation (JEL).

M	RB-12	Condensate booster pump suction valves (chain operated) cannot be operated without standing on the pumps- poorly designed chain operator.

Need Engineering Evaluation (JEL).

M	RB-12	Numerous oil leaks noted on the Hydrogen Seal Oil Pump skid and condensate booster pumps.

Maintenance to provide resolution (CME).

BIN	seq	Text
M	RB-12	North water box condenser area is badly water stained.

Need Engineering Evaluation (JEL).

M	RB-12	A hose runs in the clean area parallel to the front standard contaminated area. It is not secured, the walkway is tight and no floor level barriers exist. This could result in this clean hose moving into the contaminated area.

Resolved.

M	RC-03	Designated smoking area located outside the mechanical maintenance shop with numerous ashcans within 15 feet of Oxygen and Argon gas bottle storage.

Resolved.

M	RC-14	Excessive failures of LLRTs on one valve with no apparant root cause or detailed evaluation.

Engineering to resolve, reference DR 93-0581, NCR 93-0218, and MWR 93-4521 (JEL).

M	SV-08	Approximately 250 terminations require repair.

Not fully inserted lug issue; tracked as a startup issue.

M	SV-14	The fuel pump (5L, #2 D/G) was replaced using special instructions and did not include torquing of the bolts.

Researching MWRs
Write CR to take care of closing MWRs (CME)

BIN	seq	Text
M	SV-14	Work performed on MWR 94-4203 and MWR 94-2923 on 8/2/94 to set the impeller clearance on the A service water pump was not in accordance with vendor specifications.

Write up as work was done. (CME)

M	SV-14	Work conducted to replace the exhaust manifold on the #2 diesel generator was not in accordance with the vendor specifications.

Need CR to document and resolve (CME).

M	SV-14	Contrary to the vendor specifications, the work crew did not tighten the bolts on "A" SWP coupling using a torque wrench . The bolting was not cleaned and lubricated prior to assembly and a tightening pattern was not used.

Write up as work was done. (CME)

M	SV-21	A degraded condition of the MO39B RHR motor operated valve, known to some station personnel, is not identified in the MWR system.

Need CR to document and resolve (JEL).

M	SV-22	Operability Determination No. 94-77 identifies lockwashers used on RHR pump motors A, B, C, and D were supplied as commercial grade on an essential purchase order and may not be qualified for use.

Need CR to document and resolve (JEL),

BIN	seq	Text
M	SV-22	Operability Determination No. 94-50 identifies that a 250 volt control relay was installed in place of a 125 volt control relay for the Auxilary oil pump on the HPCI pump.

Need CR to document and resolve (JEL).

M	SV-22	Operability Determination No. 94-58 indentifies that the relief valve installed on the Emergency Diesel Generator starting air system is undersized. Valve number DGSA-RV-15RV.

Need CR to document and resolve (JEL).

M	SV-22	Operability Determination No. 94-63 identifies various check valves installed in the NBI, RCIC, RR, MS and HPCI were not supplied safety related.

Need CR to document and resolve (JEL).

M	SV-23	The plant's corrective action did not include checking of other motor bolting on the remaining three RHR pump motors.

Corrected, reference MWR 94-4136 (RHR A), 94-4260 (RHR B), 93-2046 (RHR C), 94-4137 (RHR D), 94-4153 (CS A), 94-4154 (CS B).

M	WW-04	1. 'A' and 'B' Reactor Feed Pumps have numerous oil leaks. 2. 'A' Reactor Feed Pump oil conditioner has a thick layer of oze. 3. A rope is hanging from the overhead in the angle valve room.

Currently containing oil leaks, when pumps are run, will write CR & evaluate & fix oil leaks. Write level 2 CR. (CME)

BIN	seq	Text
M	WW-04	Air sampler and HP meter left on floor by drywell.

This is staging area access to the drywell. This equipment needs to be there to support the periodic drywell entries. Conducted during this Outage. No action to be taken. Equipment will be removed

M	WW-04	A container of refrigeration oil is located in the compressor housing.

Maintenance to resolve (CME).

M	WW-04	Welding cables are hung on a support in the HPCI room.

Maintenance to resolve (CME).

M	WW-05	1. 'A' Reactor Feed Pump inboard pump bearing seal is leaking approximately one drop every two seconds. 2. The HPCI skid area has at least six oil leaks. 3. Oil bags are located in several area sumps. 4. Core spray surveillance test pump in stairwell, oil on skid between pump and wall.

Maintenance to resolve (CME).

Nebraska Public Power District

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NLS940111
November 7, 1994

Mr. L. J. Callan
Regional Administrator
NRC Region IV
611 Ryan Plaza Drive
Suite 400
Arlington, Texas 76011

Subject: Progress on Improvements at Cooper Nuclear Station
NRC Docket No. 50-298

Dear Mr. Callan:

The public meeting of the NRC's Restart Panel on November 8, 1994 is an important milestone for the Cooper Nuclear Station. As the licensee, NPPD's responsibility for safely managing the operation of Cooper places the burden squarely on us to demonstrate to the NRC and the public that we are fulfilling that responsibility. To facilitate an open and productive dialogue with the Restart Panel, this letter provides my assessment of the challenges NPPD faces in improving performance and the progress made in meeting those challenges.

As you know, the major performance improvement challenges for Cooper relate to management's responsibility to set clear expectations and performance standards, to provide clear direction, and to hold personnel accountable for performance results. Management's failure to meet these responsibilities has led to the majority of the deficiencies NPPD is currently addressing. Although the safety consequences of our past management weaknesses have been isolated and limited, and there have been reductions in safety margins to some plant systems, the ultimate safety functions of those systems would have been satisfied. In addition, the material condition problems we have seen have not been significant.

Over the past 20 years, Cooper Nuclear Station has been a safe operating plant. However, it became increasingly evident that management had not instilled the type of questioning attitude and essential focus on safe plant operations necessary for achieving a high level of confidence such that safety issues would be consistently and promptly identified and completely resolved. This resulted in a decline in station performance and our subsequent concern that there may have been significant material condition issues associated with essential plant systems.

Even though the potential existed for an impact to safety from these deficiencies, our extensive reviews over the past months of surveillance and testing programs, operating experience use, and maintenance practices have demonstrated that former management practices did not result in significant material condition problems. In fact, many of the issues that we have

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recently identified, including design of the intake weir wall, containment penetrations, and some surveillance and testing deficiencies, have existed since original plant startup. Taken collectively, these circumstances lead us to conclude that the staff at Cooper, while very capable at operating the plant, placed too much confidence in the initial plant design and operating practices. The questioning attitude to challenge the adequacy of existing designs and practices was not sufficient to raise and resolve these issues earlier.

Several management practices clearly resulted in hardware deficiencies that reduced the design margin of plant systems. In assessing the extent of findings, we have bounded the potential impact of equipment degradation on the safety functionality of plant systems. We concluded that the most significant potential impact was associated with the diesel generators, their ability to shed non-safety loads, and implementation of vendor recommended upgrades and maintenance. Even with these deficiencies, our engineering analyses have shown that the diesel generators would still have performed their safety function.

Even though past management practices did not result in significant hardware problems, management did not aggressively identify and correct the causes of such problems. We have reviewed these areas and have implemented sound resolutions, several of which are discussed in this letter. These resolutions will eliminate unacceptable practices and establish processes and program controls to ensure that appropriate design margins will be maintained. Improving the safety ethic at Cooper has been our major thrust. It is for this reason that our major initiatives are management-related.

As further discussed below, we have brought in managers with significant experience in successfully changing culture and management practices at other utilities. The major tools used to accomplish this improvement and a status of our progress and plans are described below.

Management and Organizational Changes. Past management practices reflected a downward-directive management style with an overemphasis on power production. A clear vision of how to balance the potentially conflicting pressures of safety, production, and cost was absent. This promoted inefficiencies in management systems, work processes and practices, and it did not adequately address management development.

Real change in management capability must originate with senior management and carry through all levels of the organization, including replacing or moving individual managers as necessary. NPPD has demonstrated its commitment in this area and has established the critical mass of talent to drive organizational change and performance improvement. In addition to myself, we have a new plant manager, QA manager, safety assessment manager, plant engineering manager, licensing manager, and new manager for the corrective action program and operating experience review. We are actively recruiting new managers for engineering and construction, operations, planning and

scheduling, and on-site human resources. The new managers are providing the organization with leadership role models and setting high standards and expectations as the first step in performance improvement. This talent upgrade will enable us to create effective management development plans, including rotations, that will provide the management depth necessary to maintain high performance standards. We will continue to assess manager performance and will not hesitate to make additional changes that are necessary. The NPPD Board of Directors and executive management have consistently supported these decisions.

The recent plant personnel reorganization provides the needed focus on safe operations and has allowed a better use of our existing management talent. For example, we have replaced the operations supervisor with the best shift supervisor at Cooper. The site support manager has been temporarily assigned as operations manager until this position can be filled with a new hire. We have transferred I&C maintenance from operations to maintenance to allow the operations department to focus on its primary responsibility, and the former plant manager has been assigned as the manager of our consolidated maintenance department. We have also restructured plant engineering and created new engineering supervisory positions. Additional organizational changes are continuing at lower levels.

To affect the management changes needed, we have had to reexamine our performance standards and replace them with standards that are appropriate for a top-performing nuclear organization. By establishing fundamental changes in the management team's capabilities and management systems, we have directed our essential changes to:

- Establishing ownership and accountability throughout the organization to continually improve our performance.
- Learning from our performance results and industry experience to ensure we manage the change required, and
- Ensuring that performance problems are correctly identified and properly resolved.

To support these essential changes in standards, we are making the following changes in basic management skills that directly enable the behavior and performance results required:

- Make self assessment and problem solving an inherent management and organizational value such that instinctively, problems are identified and resolved and the generic implications with respect to safety are fully addressed.
- Establish higher expectations for performance, and communicate and ensure they are absorbed by managers such that they know what is expected and are accountable for their organization's performance.

Excuses for substandard performance are no longer acceptable.

- Develop a plan and criteria for success with the participation, buy-in, and ownership of the organization. The Phase 1 Performance Improvement Plan is the vehicle to demonstrate and develop this skill.

- Base the management systems upon clear responsibility, accountability and ownership of programs and processes for achieving high levels of performance, not upon downward direction of actions.

Corrective Action Program. A cornerstone of our performance improvement is the identification of problems and their satisfactory and timely resolution. In the past, Condition Reports (CRs) were not being written on all identified problems, corrective actions were not effective, and generic implications of problems were not identified. We have made significant progress in this area. The major increase in CR initiation rate is a testament to rising standards. To address the impact of CRs, we have elevated performance indicators for open CRs as a topic at regular management reviews, allowing us to prioritize and direct resources to resolving the important issues we face. We also are improving our ability to resolve CRs through the Condition Review Group and improving the CR closeout process by our management review through the Corrective Action Review Board. Our new corrective action program manager along with an increased staff are improving the quality and efficiency of corrective actions and are allowing us to reduce the backlog that has been created.

Conduct of Operations. We believe that an essential element of a top-performing nuclear organization is a singular focus on safe plant operations. Cooper has experienced and capable operators who have successfully operated the station despite problems associated with the management systems and work processes. We had not adequately focused plant resources on addressing operations issues. Improvement was needed in sensitivity to procedural controls, thoroughness of operability determinations, and conservative Technical Specification implementation.

Past operations were often compliance-oriented with too much emphasis on reliable production. The new management team, in conjunction with realigning responsibility and accountability for performance results, provides the appropriate balance between production and safety. For example, we have already made significant changes in critical areas including resolving the preconditioning issue, eliminating the ability to bypass engineering through SORC-approved Maintenance Work Requests (MWRs), and substantially upgrading ownership of key programs including work control and surveillance testing. In addition, we are focusing on Technical Specification compliance and allowed outage times for surveillance testing.

Independent Oversight. To achieve the performance results required, our organization must have an effective independent oversight capability. Our two oversight bodies, SRAB and SORC, were not effective in identifying and ensuring correction of safety issues and providing a broad overview of Cooper activities. To address needed changes, the membership has been revised, charters and direction established and expectations clearly communicated. This is leading to both SRAB and SORC becoming more effective at identifying the important safety issues for the station.

Effective oversight also depends on having an active QA organization. In the past, QA did not effectively assess line management performance, self-assessments or the safety ethic that existed in the organization. We have completed a self-assessment of needed improvements, and a plan has been developed to address performance improvement. QA is providing the needed confidence for long-term compliance, and their assessment function is continuing to improve.

Improved Critical Work Processes. To improve our performance, it is essential that our management work processes facilitate the efficient and effective achievement of the results we require. In the past, management systems to monitor performance indicators were ineffective. Basic work control processes did not support operations, and they introduced distractions to operators including challenges to divisional separation. The management and work processes also created challenges in reducing the corrective action backlog. A key improvement in Cooper Nuclear Station management processes is the implementation of performance monitoring of the work load in key plant organizations; these include operations, maintenance, and plant and design engineering.

Since workloads were not previously prioritized and appropriate goals for work backlogs and the efficiency of completing work were not established, we expect significant increases in work completion now that these new management systems are in place. A particular area where significant benefits will be achieved is work control. Our focused improvements in work control will reduce the work load on the Shift Supervisors, reduce challenges to safety due to multiple divisional outages, and increase safety system availability through to efficient scheduling of system outages for maintenance. These types of process improvements, when implemented at plants in similar conditions, have doubled work through-put by removing inefficiencies. These changes will significantly increase the station's ability to reduce our backlogs while simultaneously improving our safety performance.

Engineering Support. Shortcomings in our ability to solve problems promptly also evolved from management and control of our technical resources. The results were, in part, poor technical support, due primarily to a lack of focus and integration of our engineering resources at Columbus and at the site. A plan is being developed to solve this issue by:

1) Refocusing plant engineering on day-to-day system engineering and

operations needs,

2) Creating a strong on-site engineering and project management organization that will promote engineering ownership and accountability for plant performance results, and

3) Focusing the remaining engineers on discipline-oriented design engineering.

By mid-November, 1994, we will have implemented the interim stage of the engineering performance improvement and restructuring plan. This will allow us to focus our engineering staff on the important startup issues and to begin the longer-term process of strategically redefining the engineering role from design modifications to technical support for reliable operation and maintenance of the design basis. We have already enlarged the on-site design engineering staff to assist our operating staff.

Planning, Ownership and Accountability. As previously noted, a downward-directive management style was used at Cooper instead of one based on clear ownership and accountability to high standards and expectations. Improvement plans were either not implemented, or there was not a reliable method for confirming that desired results were achieved. The first crucial step has been to create a Phase 1 Performance Improvement Plan that clearly identifies our most important work activities. This plan is owned by line management, and accountability for results is being enforced by senior management. The Phase 1 action plans are key to teaching the staff the skills of ownership and accountability while simultaneously addressing those activities required to restart the plant. In addition, management processes, notably our management review meetings and new performance indicators, are now in place to establish and reinforce expectations by which we will live.

Looking ahead, our management team initiated the Phase 2 and 3 performance improvement planning in two off-site workshops to lay out clearly for our owners, employees and external parties where we are going from here and why. An initial version of the Phase 2 and 3 Plans will be issued in the near future.

Restart Readiness Program. To manage our return to power operation safely and effectively, we will use a Restart Readiness Program that provides the transition from our Phase 1 performance improvement activities to implementation of our power ascension plan. The Restart Readiness Program addresses how Cooper will use restart lists and schedules, Phase 1 action plans, DSAT findings, SET inspection findings, confirmatory action letter closeouts, and NRC Restart Panel conclusions regarding activities that will provide a consistent basis for determining restart readiness. The results of these efforts will be incorporated into final restart readiness determinations. In addition, issues such as plant material condition, miscellaneous hardware deficiencies, and organizational readiness will be assessed and dispositioned appropriately prior to startup.

Conclusion

I am pleased with the pace and results of the changes to date. NPPD executive management has been kept fully apprised, and they have been supportive of our efforts. In the next several weeks we will have additional indications of how rapidly these changes can produce the expected level of performance results, and the time frame for accomplishing key milestones, including resumption of plant operations. The NRC's SET assessment results are being integrated with our current plans and programs to ensure we are addressing all of the right issues. I will continue to provide periodic updates on our progress and significant issues as circumstances warrant.

Sincerely yours,

D. W. Mueller

D. H. Mueller
Site Manager

cc: U. S. Nuclear Regulatory Commission
Attention: Document Control Desk

Region Administrator
USNRC - Region IV

NRC Resident Inspector
Cooper Nuclear Station

NPG Distribution

Nebraska Public Power District
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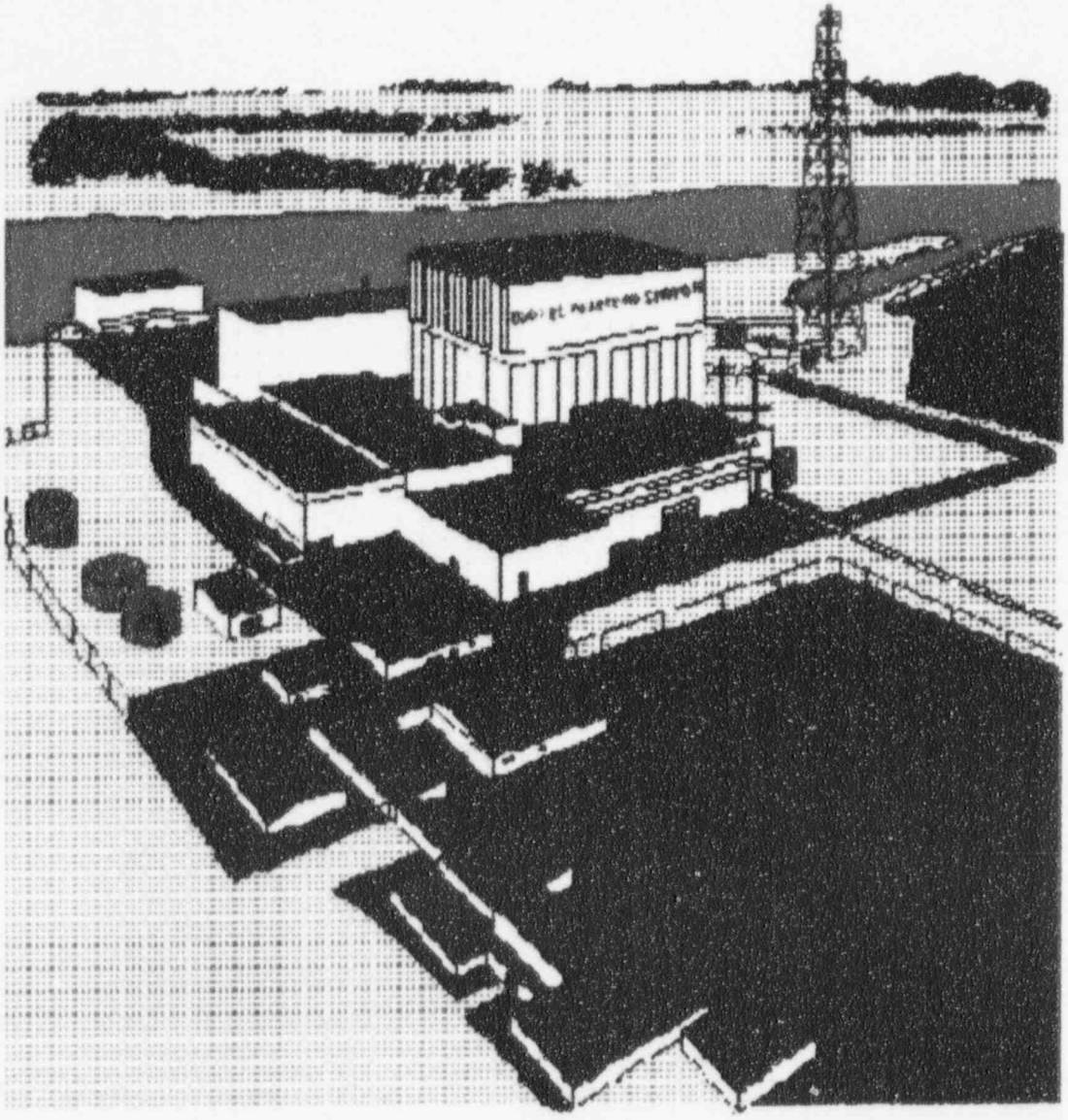

RESTART READINESS PROGRAM

REVISION 0

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COOPER NUCLEAR STATION

RESTART READINESS PROGRAM

November 8, 1994

(Revision 0)

APPROVED BY:

PLANT MANAGER — DATE 11/8/94

SITE MANAGER — DATE 11/8/94

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APPENDICES

PERFORMANCE IMPROVEMENT PLAN
RESTART READINESS PROGRAM

I. PURPOSE/DESCRIPTION

The purpose of the Restart Readiness Program (RRP) is to document the methodology being used by the Nebraska Public Power District (NPPD) to complete activities necessary to return Cooper Nuclear Station (CNS) to operation following the May 25, 1994, forced outage. The Restart Readiness Program addresses how CNS will utilize Restart Lists, Performance Improvement Plan (PIP) Phase 1 Action Items, Diagnostic Self Assessment Team (DSAT) findings, NRC Special Evaluation Team (SET) Inspection findings, NRC Confirmatory Action Letter (CAL) closeouts, and NRC Restart Panel conclusions regarding activities that will provide an objective basis for restart readiness. The results of each of these efforts are incorporated into final restart readiness determinations. In addition, issues such as plant material condition, miscellaneous hardware deficiencies, and organizational readiness will be assessed and appropriately resolved prior to restart.

The Restart Readiness Program provides a transition from Phase 1 PIP activities to implementation of the Power Ascension Plan. Phase 1 involves a planning process for significant issues that must be addressed prior to plant startup. Many of these significant issues have been identified in documents such as the Diagnostic Self-Assessment Team inspection, NRC Confirmatory Action Letters, open inspection report items, and management self-identified issues. Phase 1 actions were assigned to individual managers who are responsible for ensuring adequate closeout. NPPD considers all Phase I PIP Action Item objectives to be restart issues (see discussions in Section VII of this document and Appendix C). Some Phase 1 PIP Action Items, however, may result in long-term corrective actions that may not be completed prior to restart. These actions will be screened and bases documented for why they do not need to be included on the restart list.

Subsequent to restart, Phases 2 and 3 PIPs will be completed. These activities will ensure continued high quality performance. Phase 2 will address essential management actions that will be completed in the 2-3 month period following plant restart. Phase 3 will address long-term strategic planning. It will provide the framework for managing performance improvement actions that are essential for meeting long-term objectives for safety, production and economics. This phase will involve activities with planning cycles from one to several years. Phase 3 activities are focused on fundamental improvement strategies, and long-term deficiency recurrence control.

II. HISTORY

The following provides a brief chronology of significant events that are relevant to current restart readiness activities. These events have contributed to the basis for why certain restart actions and processes have been deemed necessary and appropriate.

5/25/94	Cooper Nuclear Station (CNS) enters a forced outage as a result of concerns regarding relay operability.
5/26/94	Public meeting at CNS between NPPD and the NRC to discuss Integrated Enhancement Plan.
5/27/94	NRC issues Confirmatory Action Letter (Rev. 0)
6/16/94	NRC issues Confirmatory Action Letter (Rev. 1)
7/1/94	NRC issues Confirmatory Action Letter (Rev. 2)
7/26/94	Power Ascension Plan, Rev. 0 issued
7/25 - 8/19/94	Diagnostic Self-Assessment Team (DSAT) inspection
7/28/94	NPPD Responds to Confirmatory Action Letter (Revs. 0, 1, and 2)
7/29/94	Management Meeting at NRC Headquarters
8/2/94	NRC addendum to Confirmatory Action Letter (Rev. 2)
8/2/94	Power Ascension Plan, Rev. 1 issued.
8/12/94	NPPD responds to Confirmatory Action Letter (Rev. 2 addendum)
8/15/94	NRC Special Evaluation Team inspection begins
8/26/94	Performance improvement briefing for NRC
9/1/94	DSAT Report issued
9/15/94	Nuclear Group Startup Plan (Rev. 1)
9/16/94	Enforcement Conference on CAL-related issues
10/6/94	Phase 1 Plan (Rev. 2)

III. DEFINITIONS

A. Emergent Work

All new work items that occur after Integrated Restart List issuance; and therefore, have yet to be restart screened and scheduled for completion.

B. Integrated Restart List

A detailed list of activities that must be completed prior to restart of CNS.

C. Summary Restart List

A list of restart issues based on Phase 1 Performance Improvement Plan objectives.

D. Open Items

Items that have the potential to affect components, subsystems, or system operations that must be screened, evaluated, and dispositioned. This dispositioning will result in a determination of whether or not the item is required to be resolved prior to restart.

E. Startup Issue

An item assigned to a responsible manager for closeout (prior to plant restart). These issues are maintained on the Summary or Integrated Restart List.

F. Final System Readiness Review

The process whereby System Engineers ensure the readiness of their assigned system by reviewing appropriate documents, restart criteria, field walkdowns, and other outstanding engineering/hardware issues.

G. Department Readiness Review

The process whereby Department Managers ensure the readiness of their area of responsibility by reviewing of items such as performance indicators, organization changes, personnel, and self-assessment of performance results.

H. Licensing Regulatory Closure

Verification by Licensing that all restart actions required by NPPD and the NRC have reasonable documentation and bases.

I. Program Readiness Review

An assessment by department program owners to determine the health and effectiveness of programs owned by that department. The results of this assessment will be incorporated into department readiness affirmations.

J. Site Readiness Review

A final-stage review by the Management Review Committee (MRC) and other senior District managers for restart readiness which involves integrated assessments of system and department readiness reviews, in addition to restart list closure, Phase 2 and 3 plans, and other ongoing self-assessments.

K. Performance Improvement Plan

A three phase document that summarizes processes, methodologies and bases for ensuring that performance at CNS improves.

L. Responsible Manager

The manager who is accountable for ensuring that a restart issue is satisfactorily completed.

M. Critical Systems List

Comprised of those systems that could contribute the greatest to safe and reliable operation of CNS.

N. Focus Programs List

CNS programs that have specific structure and purpose, and have been selected by management as being appropriate for performance monitoring.

IV. RESPONSIBILITIES

A. Site Manager

Principle manager responsible for review, approval, and implementation of the Restart Readiness Program and all revisions thereto.

B. Plant Manager

Principle manager responsible for review, approval, and implementation of the Power Ascension Plan and ensuring prompt revision as necessary.

C. Management Review Committee

A management team composed of the Plant Manager, Senior Manager of Safety Assessment, and Corporate Division Manager of Nuclear Engineering & Construction. The Plant Manager is the Chairman of the MRC. All MRC members are expected to be present during all MRC meetings where restart determinations are made. Exceptions to this expectation may only be granted by the MRC Chairman. The MRC has the primary responsibility for determining that items are appropriate for addition to the restart list, that self-assessments are satisfactory, and that organization performance has been improved to the point that restart of CNS is appropriate.

D. Responsible Manager

Manager accountable for ensuring that the item has been properly assigned and closed-out. The Responsible Manager (or designate) typically will present restart item screening conclusions and the restart item closeout presentation to the MRC.

V. RESTART READINESS PROCESS

The restart readiness process involves the collective review and assessment of events and activities, and associated resolutions to determine if CNS is ready to resume operation. The primary contributor to restart conclusions will be the satisfactory closeout of Phase I Action Items. As discussed herein, Phase 1 Action Item objectives provide the basis for the CNS Summary Restart List. More detailed restart issues are included in the Integrated Restart List. The addition or deletion of a restart item from these lists may occur only with the approval of the MRC. This process is similar to approaches recently used by other nuclear plants with similar deficiencies.

Also providing input into restart readiness decisions is the closeout of several self-assessment initiatives. Restart readiness self-assessments will be performed for critical systems, significant programs, and CNS departments. These self-assessments will utilize the results of Phase I Action Item closeouts as appropriate. The MRC will determine the acceptability of self-assessments and make a site readiness determination. Once it is concluded that the site is ready for restart, implementation of the Power Ascension Plan begins. The Power Ascension Plan provides direction regarding additional restart actions.

VI. PHASE I CLOSEOUT

Closeout of all Phase 1 activities was viewed by CNS management as necessary to demonstrate clearly that sufficient changes have occurred at CNS to address and to prevent recurrence of declining performance. The method of Phase 1 closeout, disposition of Phase 1 findings, and implementation of resultant corrective actions are discussed in Appendix A of this document.

VII. RESTART LIST

As discussed in the Phase 1 Performance Improvement Plan, the process used to identify restart action categories included a review of CAL items (and responses), open items, DSAT issues, SET issues, and NPPD-identified issues. Two levels of restart items exist at CNS. The Phase 1 Plan provides action items that broadly define restart item categories and documents responsible NPPD managers. The list of Phase 1 Action Item objectives is the Summary Restart List. The Summary Restart List is provided as Appendix C to this document. This list has been approved by senior management as the scope of actions that must be completed prior to restart. The second level of restart items, the Integrated Restart List, contains more detailed itemized descriptions of the specific activities that must be completed prior to restart. The Integrated Restart List also must be approved by the Management Review Committee. Approval of additions to these lists is addressed in Section VII.A below and Appendix D. Emergent restart issues will have a focused evaluation to determine whether they should be added to, or deleted from, the Integrated or Summary Lists. These lists are not intended to address routine issues that would normally be required by, for example, technical specifications, previous commitments to the NRC not specifically related to restart, and other activities designated by the Site or Plant Manager. Also, these lists do not include all issues that could be scheduled for completion during the outage. Many outage items may reasonably be rescheduled until post-restart if circumstances do not allow their completion prior to plant startup. See Appendices B and L for a flowchart on how NPPD will address outage work items. The restart categories addressed in the Phase 1 PIP are:

- Independent Oversight and Self-Assessment: roles and responsibility of SRAB, SORC, QA and QC and organizational self-assessment.
- Corrective Action Program, Planning and Performance Monitoring: problem identification, root cause analysis, planning and issue resolution, performance monitoring and follow-up.
- Work Control: identification, tracking, planning and scheduling.
- Design Control and Configuration Management: plant design change control, clearance program, valve lineups, and drawing control.

- Engineering Support: roles, responsibilities, and support to operations and maintenance.
- Plant Testing: IST, surveillance, post-maintenance testing, and preconditioning.
- Operational Experience Review (OER).
- Procedural Control: technical quality, procedure changes, and procedure adherence.
- Additional Management Issues: issues that are not specifically addressed in individual program and process categories.

A. Development of Restart Items List

1. Identification of Restart Items

Restart items generally evolve from material condition issues, ongoing NRC inspections, and NPPD assessment activities. Potential restart items also may evolve from employee input to supervisors, through CNS management's review of Performance Improvement Plan activities, or from other self-assessment or improvement processes. In this light, CNS has developed a Potential Restart Item Form which may be submitted by any NPPD employee (to the MRC) who believes that an item should be evaluated by the MRC for restart implications. Restart Items may be addressed by the MRC individually or as a group. Inclusion or exclusion of a group of items is appropriate only if the activities are similar based on the following factors:

- Safety significance, and
- extent of condition, and
- source (e.g., hardware issues, process issues, maintenance work requests, etc.).

A more detailed discussion of the process used for submittal of this form is provided in Appendix D. Specific restart item identification builds upon the same screening criteria utilized in the Phase 1 Plan. The screening criteria are repeated below for convenience.

Level I Screening Evaluation:

Issues were evaluated to identify potential safety or operability concerns. These issues were automatically categorized as restart items.

Level II Screening Evaluation:

Issues that were not categorized as restart items during the Level I screening evaluation were reassessed to determine if they still should be considered restart items. Satisfying any of the following criteria qualifies the item as a restart item. An event or finding must be categorized as a restart item if the event or finding involves or could reasonably lead to:

- an event, component failure, deficiency, or condition that could result in operation in an LCO Action Statement, or
- failing to perform a required surveillance test or other license requirement or meet a commitment to an outside agency, or
- failure of power production equipment that could result in a plant transient, derating, or plant shutdown, or
- conditions that have resulted in repetitive safety system equipment failures, or
- potential licensing basis deficiencies requiring maintenance to restore to conforming conditions (i.e., deficiencies in safety-related or other qualified equipment, e.g., EQ, Appendix R, or seismic), or
- potential design basis deficiencies, i.e., deficiencies in safety-related equipment or other technical specification equipment not in conformance with the USAR, or
- deficiencies in configuration management programs, processes, engineering analysis codes, or documentation that have, or could have, a reasonable likelihood of affecting equipment operability, or
- conditions that may create an unacceptable potential for an unplanned radioactivity release to the environment or discharge effluent to the environment which is in excess of limits.

B. Development of the Outage Maintenance Schedule

Maintenance work for the current outage is controlled in accordance with an outage schedule that contains maintenance work that must be completed prior to plant restart. In addition to meeting the technical specification requirements for equipment operability, the schedule will contain other maintenance activities that satisfy at least one of the eight Level II startup criteria stated above. Decisions to add hardware items to the approved startup schedule are controlled as described in the flowchart provided in Appendices B and D. These flowcharts describe how potential restart issues are screened and closed-out.

C. Closeout of Restart Items

The following provides a standardized format for addressing Integrated Restart List items.

1. Closeout Documentation

The Responsible Manager for each Summary Restart List item must maintain the master set of documentation for issue closeout. The following closeout process applies to Phase 1 Action Plan items and other significant issues as directed by the MRC. All other issues, e.g., Maintenance Work Requests, Condition Reports, Nuclear Action Item Tracking issues, etc., will be closed using normal station processes. The documentation will be maintained in a binder containing information in the following format:

A. Summary:

- Explain why issue is closed/objectives satisfied.

B. Closeout Actions:

- Actions taken to closeout each Action Plan step.
- Why actions envelope the "extent of condition."

C. Results

- Performance Improvements in general.
- Any measurable indications/examples of improvement.

D. Follow-up Actions

- Actions to ensure continuation of improvements.

Attachments: Supporting documentation verifying closure of each Action Plan step.

1. Index
2. Action Plan
3. Gantt chart with status pages (if appropriate)
4. Support documentation; e.g., QA inspections, procedure changes, cover pages of documents and applicable pages.

Approvals: (signatures)

VIII. SELF-ASSESSMENT

A key to ensuring restart readiness is an effective self-assessment program. Self-assessments will determine the readiness for start-up and therefore, better ensure successful subsequent operations. Structured self-assessments will be performed for Department Readiness, Program Readiness, and System Readiness. This is accomplished through the conduct of pre-milestone and periodic management assessments of performance and readiness effectiveness reviews. The collective perspective of the Management Review Committee will provide the necessary focus on critical work activities, synergistic effects, and issues that need to be resolved to support the objectives of the readiness review.

A. OBJECTIVES

Structured self-assessments will be conducted which will achieve the following objectives:

- Ensure that there are effective communications between station management and staff to assure that important issues are well-understood, facilitate teamwork, and instill a continued sense of ownership of the issues and results,
- Ensure that significant performance or other emergent issues identified during the outage are resolved satisfactorily,

- Define a path for continued performance improvement through linkage of assessment results that are appropriate for longer-term resolution in the Phase 2/3 Performance Improvement Plans.

1. Conduct of Self Assessments

Self-assessment at CNS will provide the cornerstone for determining readiness for restart and evaluating the effectiveness of long-term improvement results. It also provides mechanisms for ensuring that momentum gained from processes, management, and culture changes continues. To be effective, self-assessments must be part of an environment that reinforces performance improvement as a way of doing business and must create the change mechanisms that will improve performance and sustain it at a high level.

The MRC will review self-assessments to ensure that the following issues are addressed:

- A vision of required organizational performance, clearly stated and shared by the organization.

- Ownership and accountability by organizational members to achieve the objectives through managed improvement. For example, the Phase 1 Plan assigns responsibility and accountability to action plan managers for completion of necessary improvement activities.

- A value system that promotes the proactive identification and correction of problems by empowered individuals. The management team provides management expectations and guidance necessary to ensure that managers can succeed.

- A focus on operational readiness by using performance criteria established to measure assessment results. This is provided by the restart performance measures developed in the Phase 1 Plan and readiness review criteria.

2. Readiness Reviews

In addition to completing Summary Restart List issues, and Integrated Restart List item-specific restart items, there are five broad areas that will have a readiness review prior to restart. These areas were selected to complement other assessment mechanisms, e.g., performance reports, Phase 1 Plan assessments, and QA oversight. The following provides a discussion of specific areas and the intended scope of assessments:

a. **Management Effectiveness**

- Evaluate the adequacy of surveillance test scheduling to ensure there are adequate checks, responsibility assignments, and control.
- Ensure that a startup schedule is available which reasonably sequences activities necessary to support plant startup.
- Determine the status and acceptability of operating experience review for any unresolved SOER and OER issues.
- Review the outstanding commitment assessment results to determine that all appropriate items have been resolved.

b. **Operations Effectiveness**

- Review the effectiveness of the operability verification process to track, communicate and resolve operability issues.
- Evaluate the nature and extent of operations issues, including a backlog review of maintenance, engineering, and temporary modifications. Evaluate the potential for these to impact the objective of an error-free start-up.
- Assess outstanding equipment clearances to ensure that any operability issues are identified and resolved.
- Evaluate simulator training results for operating crews for startup.
- Evaluate post-maintenance tests, plans and schedules to ensure that tests are completed successfully.

c. **Maintenance Effectiveness**

- Ensure that staffing is adequate to support startup shift work requirements.

- Evaluate key plant system performance issues and determine risk associated with remaining open maintenance or modification activities.

d. **Support Effectiveness**

- Ensure that adequate engineering support is provided to support shift work requirements and operability determinations.

- Ensure that adequate shift staffing is provided for RP, chemistry and QA/QC to support start-up.

e. **Engineering Effectiveness**

- Ensure that engineering analyses are prompt, accurate and address the issue, and support shift work requirements, reactor engineering and operability determinations.

f. **Power Ascension Plan**

- Ensure that the Power Ascension Plan assigns designated personnel to manage plant startup activities through completion of power ascension. Several Power Ascension Plan activities also support restart readiness action closeout. This activity may be accomplished through other self-assessments.

g. **System Restart Readiness**

- Prior to restart, each responsible system engineer will review the status of each system as indicated in Appendix E and will affirm restart readiness of the system to support safe and reliable restart and full power operation. The objective is to assess collectively and document system readiness from a hardware standpoint, to support management restart decisions, to reinforce ownership for system performance and improvement with system engineers, and to lay the foundation for post-restart work/improvement prioritization. Appendix E provides a list of systems that must go through the System Restart Readiness process, summarizes applicable criteria, and provides the form that will be used.

As discussed in the Phase 1 Plan, the process requires both an initial multi-disciplined assessment of system status and a final assessment and affirmation (signature) by the System Engineer prior to restart. See Appendix E. Incomplete activities at the time of the final system readiness assessment will be identified to the MRC and their impact on restart determined. The System Engineer must prioritize those remaining items and determine whether inclusion into the Phase 2 or Phase 3 Plan is appropriate. Technical specification systems will be verified operable before entry into a mode where they are required to be operable.

- Walkdowns will be conducted to assess material condition. Specific emphasis will be placed on systems that are safety significant and important to plant reliability. Walkdowns at system operating temperature and pressure will be conducted as appropriate to confirm appropriate system restoration.

- System engineers will confirm that the material condition of the system; the completion of walkdowns; the completion of the review of information related to significant recurring or repetitive equipment problems; development, implementation, and completeness of actions to address them; and the establishment of compensatory measures (as appropriate) for post-restart items/issues.

- System readiness assessments will be reviewed by the system engineer's supervisor, SORC, and the MRC as indicated in Appendix E. System readiness affirmations also will provide input into department readiness affirmations discussed in Section VIII.A.2.h below, and into the overall Management Review Committee's assessment of site readiness.

h. **Department Restart Readiness**

- Prior to restart, managers responsible for each major functional department indicated in Appendix F will affirm restart readiness of that department's ability to support an error-free startup and safe and reliable operations. This will ensure department completion of assigned restart actions; ensure that programs, processes, organization, and personnel/management capability are sufficient to support

safe and reliable operation; ensure that post-restart work and improvement efforts are sufficiently defined, prioritized, scheduled, and controlled; and ensure that appropriate post-restart assessments and monitoring processes are in place.

- Final department readiness affirmations will be reviewed by the MRC. Reviews by SORC and other cognizant managers will be input into the overall Management Review Committee site readiness assessment.

i. **Program Readiness Assessments**

- Program owners will assess the health and effectiveness of programs owned by that department. The results of this assessment will be incorporated into the department readiness affirmations.

  Past problems with programs at CNS resulted in part from unclear ownership, process control weaknesses, and technical program inadequacies. This program assessment is an important element of CNS performance improvement in that each program owner must establish clear accountability and responsibility for his/her programs. To ensure a consistent, thorough method of assessing site programs, specific assessment guidance has been developed (see Appendix H). This guidance and the list of programs that will be assessed are provided in Appendix H.

- Program owners are expected to provide periodic summaries of identified program weaknesses from internal and/or external evaluations, trending, and corrective action documents. Results of these assessments should be documented and recommended actions will be evaluated by the MRC for restart implications and/or appropriate long-term enhancements.

j. **Site Readiness Assessment**

- The overall site readiness assessment will consist of a "program rollup" of several interfacing and overlapping inputs. These include the system and department readiness affirmations described above, the closeout/disposition of all restart list items, the review of organization and personnel

adequacy and other input from personnel and management. See Appendix I.

- The MRC will review and evaluate both the individual inputs and the rollup of these inputs and provide, in consultation with the Site Manager, a recommendation to the Vice-President Nuclear for restart authorization. The MRC readiness assessment will be completed before initial mode change. Preliminary or intermediate assessments will be conducted as determined appropriate by the MRC, SORC, the Site Manager, or the Vice-President Nuclear. The SRAB also may review site readiness for initial mode change as it deems appropriate.

- A Power Ascension Plan has been prepared and approved by senior CNS management. This document provides specific requirements for startup management, preparing plant hardware, and methodologies that will be used during the actual startup process.

3. Review of Self-Assessment Results

The review of the results of the management self-assessments to assure that organizational performance meets expectations for plant restart will be performed by the MRC. This review provides the vehicle for establishing and reinforcing expectations with assigned managers, receiving feedback on organizational performance results, and obtaining early feedback on corrective action for performance deficiencies or emergent issues that may impact performance results.

The schedule for the completion of assessments and presentations to the MRC will be controlled by the Phase 1 Project Manager or designate. This individual will ensure that review briefings are scheduled, assist in clarifying assessment processes and requirements, and track and assign further assessments (or other actions) which may evolve from management review of the results.

IX. QA OVERSIGHT

Independent oversight of the Restart Readiness Program will be conducted by the Quality Assurance Division through assessments of selected Phase 1 Action Plans, scheduled audits, and specific evaluations of significant emerging issues. Audits in progress and scheduled will emphasize evaluation of identified and potential areas of weakness within the scope of the respective audit. Assessments and surveillance activities will be planned and implemented to focus on evaluation of field performance and operational activities executed to correct identified deficiencies and prepare the plant for return to safe power operation.

APPENDIX A - PHASE 1 CLOSEOUT

NUCLEAR POWER GROUP PHASE 1 PLAN CLOSEOUT REPORT

PURPOSE AND SCOPE

NUCLEAR POWER GROUP
PHASE 1 PLAN CLOSEOUT REPORT
PURPOSE AND SCOPE

The purpose of the Nuclear Power Group Phase 1 Plan Closeout Report ("Closeout Report") is to identify and summarize the actions that have been taken at Cooper Nuclear Station (CNS) to resolve the issues identified in the Phase 1 Plan. The Phase 1 planning process involved a comprehensive evaluation of issues identified in numerous sources including NRC enforcement actions, the Diagnostic Self Assessment Team (DSAT) Report, the Confirmatory Action Letter (CAL), and issues self-identified by CNS management. Based on a comprehensive evaluation and screening of the issues identified in these various documents, the Startup Plan Team responsible for development of the Phase 1 Plan identified the subset of management, program/process, and material condition issues that required resolution prior to startup. The Phase 1 issues are addressed in the Plan's three constituent parts: (1) the Phase 1 Action Plans; (2) Material Condition Items; and (3) the Phase I Action Item List. Lists of the three sets of issues are included in Enclosures 1, 2, and 3, below.

The Closeout Report will assess the effectiveness of the actions undertaken at CNS to closeout each of the issues addressed in the Phase 1 Plan. In sum, the purpose of the assessment is to determine whether the issues set forth in the Phase 1 Action Plans, list of material condition items, and Phase 1 Action Item List have been effectively addressed -- or remain barriers to safe plant restart. In addition, the assessment will gauge whether actions have been taken to clearly communicate management's expectations regarding the Phase 1 improvement initiatives.

The Closeout Report will be structured first, to describe the purpose, development, and scope of the Phase 1 Plan. An assessment of the actions taken at CNS to closeout the issues set forth in each part of the Phase 1 Plan will be summarized in the Closeout Report. A more detailed, issue-by-issue explanation of the actions taken to close out the Phase 1 issues included in the Action Plans, List of Material Condition Items, and Action Item List will be available in matrices found in Appendices A, B, and C of the Closeout Report. In addition, closure packages for each of the Phase 1 Action Plans -- containing documentation verifying closure of each action plan step -- will be available for review at CNS.

ENCLOSURE 1

PHASE 1 ACTION PLAN

Action Plan ID #	Issue
1.1	Revise the SRAB Charter; Address Member Independence and Revise Membership
1.2	Improve SORC Effectiveness
1.3	Independent Assessment of Startup Action Plan, Confirmatory Action Letter, and Condition Reports
1.4	Quality Control
2.1	Corrective Action
2.2	Departmental Performance Indicator Goals/Monitoring
3.1	Establish and Implement a Plan for Integrated Work control, planning, and Scheduling
3.2	Implement Effective LCO Tracking and Work Coordination Interface System
4.1	Plant Configuration Verification (1 of 2)
4.1	Plant Configuration Verification (2 of 2)
4.2	Identify and Review Priority Vendor Manuals

4.3	NED Review of Procedures and DCNs to Ensure Configuration Control
4.4	Efficient Resolution of Design-Basis Questions
4.5	Surveillance Procedure Adequacy
4.6	SORC Approved MWRs and Subsequent Design Changes
4.7	Inadequate Calculation Control Prior to Implementation
4.8	Multi-discipline Team System Reviews
5.1	Improve NED Site Support during Startup and Power Ascension (S/PA)
5.2	OD/OE Review
6.1	Pre-Conditioning
6.2	IST and Surveillance Testing
7.1	Startup Experience Following Extended Outages
7.2	Open OERs
7.3	Reactor Vessel Thermal Transient
8.1	Develop Procedure Hierarchy to Identify Controlling Procedures
8.2	Special Instructions

8.3	Screen Backlog of Procedure Changes for Significant Items for Startup
8.4	ADAM Changes
8.5	Method for Handling Surveillance Test LCOs Without Allowed Outage Times
9.1	Resolve the Lack of Program Ownership in the NPG
9.2	Nuclear Safety Awareness
9.3	Management Observations - Field Coaching Team Plus Management Observations
9.4	Industrial Safety
9.5	Licensing Submittals

ENCLOSURE 2

MATERIAL CONDITION ISSUES

The following list of material condition issues can be found in Appendix B of the Phase 1 Action Plan:

- Service Water switches plugging with silt.
- Low pegging of RHR HX divider plate indicators due to plugging.
- 111 Type 2 and 827 Type 4 open items; 2400 discrepancies unresolved (tagging, labeling, physical repairs,procedure revisions).
- Tygon tube "gutter" to address leak around flanged connection on "A" RHR HX.
- RHR pump 1B failure to achieve reference value for number of test (e.g., dP @ 10 psi short of reference value).
- Cause of shutdown cooling isolations was leakage past pump minimum flow valve that indicated closed but was not fully seated.
- Caution tag informing operators that operation of DGSA-V-37 or -38 with failing PCV could overpressurize DG H&V air piping.
- Unexpected opening of HPCI pump minimum flow valve during surveillance testing at full power (1/19/94).
- Leakage past seat in Vessel level injection valve NBI-SOV-738/739; isolation of NBI-V-577A/B.
- Control switch for main turbine bearing lift pump is in manual to prevent operation while the speed input to its control circuit is erratic.
- 200 gpm leakage by the seat of the B RFP minimum flow valve, which is kept isolated as a result.
- Due to leakage by the seat of the demin water LCV, it is isolated. This requires operators to manually open DW-34 prior to starting the Mechanical Vacuum Pump from the MCR.

- Caution tag guidance not to bias RFC-MA-84A/B positive due to causing RFPs not to go into track and hold following a scram (93-02).
- Monitoring of potential erosion of portion of RHR system not established as required by modifications made to flow trim on valves MO-27A/B and 34A/B.
- Leakage in REC piping not adequately monitored.
- Installation of SCRAM discharge level transmitters with improper bolting.
- During B Loop shutdown cooling, flow turbulence caused "chugging" sounds in vicinity of HX bypass valve, RHR-MO-66B.
- Failure to test or maintain essential relays on a regular basis, including 18 ground detection relays (50G) on 4160V buses 1F and 1G and Emergency Transformer overvoltage relays.
- Two overhead troughs outside MVP room have drain hoses that end outside sump barriers, creating potential for pooling in corridor.
- Possible cavitation noise at water box south of downstream of RF-28MV.
- Excessive failures of LLRTs on one valve without apparent root cause or detailed evaluation.
- Approximately 250 terminations require repair.
- Work to replace exhaust manifold on #2 DG was not in accordance with vendor specifications.
- Contrary to vendor specifications, bolts on "A" SWP coupling were not tightened with a torque wrench, bolting was not cleaned and lubricated prior to assembly, and tightening pattern was not used by work crew.
- Work performed on MWR 94-4203 and MWR 94-2923 (8/2/94) to set impeller clearance on A service water pump not in accordance with vendor specifications.
- Fuel pump (5L, #2 D/G) replaced using special instruction that did not include torquing of bolts.

- Degraded condition of MO39B RHR MOV is not identified in the MWR system. Operability Determination No. 94-50 identifies installation of 250V control relay in place of 125V control relay for Auxiliary oil pump on HPCI pump.

- Operability Determination No. 94-58 identifies installation of an undersized relief valve on the EDG starting air system (DGSA-RV-15RV).

- Operability Determination No. 94-63 identifies that various check valves installed in the NBI, RCIC, RR, MS, and HPCI were not supplied safety-related.

- Operability Determination No. 94-77 identifies lockwashers used on RHR pump motors A,B,C, and D were supplied commercial grade on an essential purchase order and may not be qualified for use.

- The plant's corrective action did not include checking other motor boltings on the three remaining RHR pump motors.

ENCLOSURE 3

PHASE 1 PLAN ACTION ITEM LIST

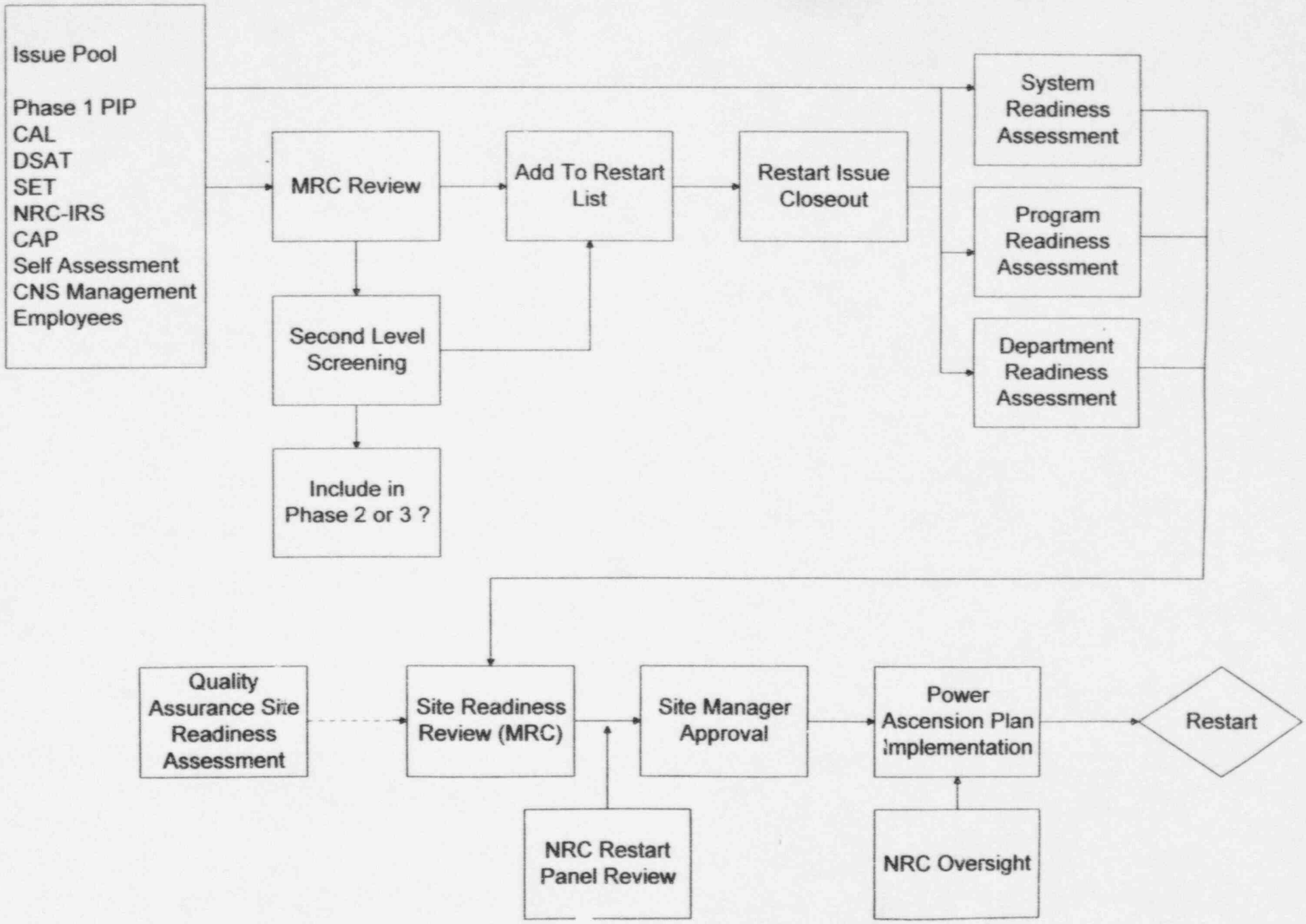
The following items are delineated in Appendix A of the Phase 1 Plan:

- Determine whether control of spare parts for safety classification is a startup issue.
- Submit letter to NRC to clarify MOV testing schedule.
- Resolve CS-5A maintenance and testing commitments.
- Complete OER review and determine generic implications.
- Resolve recommendations from MWR Maintenance Work Practices Review.
- Determine whether action is necessary prior to startup for the "design change correcting the problem" issue.
- Evaluate the power ascension plan for integration with Phase 1 Plan, including establishing management expectations (e.g., for error-free startup).
- Determine whether action is necessary to ensure technical adequacy of design changes.
- Ensure that specific issues are addressed in revised clearance order program: (1) non-operators operating equipment; (2) pull-to-lock protection use; (3) overriding danger tags; and, (4) independent verification.

APPENDIX B - RESTART READINESS PROCESS FLOW CHART

Appendix B

CNS READINESS REVIEW PROGRAM



APPENDIX C - SUMMARY RESTART LIST

COOPER NUCLEAR STATION

SUMMARY RESTART LIST

The following provides the CNS Summary Restart List. This list addresses broad actions that must be completed prior to restart. They are the framework for the Phase 1 Performance Improvement Plan. A more detailed list, the Integrated Restart List, provides a detailed listing of specific activities that must be completed prior to CNS restart.

1. **Revise the SRAB charter; address member independence and revise membership**

   Ensure SRAB procedures and membership provide effective independent review, audit and oversight of NPG activities to ensure Cooper Nuclear Station is safely operated and maintained. Changes must ensure SRAB is self-critical and challenges line management.

2. **Improve SORC effectiveness**

   Improve independent oversight ability of SORC to ensure that an appropriate review is performed for all proposed additions, deletions, and changes to safety-related activities.

   Enhance the process utilized by SORC to ensure sufficient independent oversight is maintained.

3. **Independent Assessment of Startup Action Plan, Confirmatory Action Letter, Condition Reports**

   To conduct the independent assessments as described above and provide timely reporting of results as appropriate. To ensure a quality startup plan and that significant issues are appropriately addressed prior to startup.

4. **Quality Control**

   1. Provide increased consistency in the application of QC requirements.

   2. Provide increased QC inspection for additional activities.

   3. Impose limitations on the amount of persons reviewing and specifying QC requirements.

4. Coach/counsel QC personnel on new program requirements.

5. **Corrective Action**

Use the dedicated Corrective Action Program group to provide clear management of the program and establish a self-critical root cause culture at CNS which ensures rigorous investigation and effective correction of all conditions adverse to quality.

6. **Departmental Performance Indicator Goals/Monitoring**

To develop management tools to obtain and monitor challenging goals for key station performance indicators.

7. **Establish and implement a plan for integrated work control, planning, and scheduling**

Correct existing deficiencies in work package content, work coordination, and daily scheduling through implementation of a work process improvement plan.

8. **Implement effective LCO tracking and work coordination interface system**

Improve tracking of technical specifications-related equipment that is out of service to limit challenges to safety systems caused by work coordination problems.

9. **Plant Configuration Verification (1 of 2)**

Determine if the standby alignment of the plant safety systems is properly specified such that, if called upon to automatically initiate, the systems will meet their design objectives.

10. **Plant Configuration Verification (2 of 2)**

Perform valve, switch, breaker, and damper lineup walkdown and initiate corrective action for discrepancies.

11. **Identify and Review Priority Vendor Manuals**

Determine if the backlogged safety-related vendor manuals/vendor manual changes and certain non-safety related vendor manuals/vendor manual changes have recommended PMs that should be addressed prior to startup.

12. **NED review of procedures and DCNs to ensure Configuration Control**

Provide mechanisms for assuring that changes to configurations reflect station design. This includes strengthening review of drawing changes and specific procedures.

13. **Efficient Resolution of Design-Basis Questions**

Provide a more efficient method of responding to design basis questions and identifying design basis information and upgrade the quality, detail and accuracy of 10CFR50.59 evaluations before they are submitted to SORC for review and approval.

14. **Surveillance Procedure Adequacy**

Complete surveillance procedure validation for CSCS and RPS.

15. **SORC Approved MWRs and Subsequent Design Changes**

Provide added assurance that SORC approved MWRs used to implement modifications receive a higher level technical review to guard against design deficiencies or violation of design basis.

16. **Inadequate Calculation Control Prior to Implementation**

Ensure calculations that are approved prior to the associated field modification/implementation are appropriately identified.

17. **Multi-discipline Team System Reviews**

Complete multi-discipline review of all open items and conduct walkdowns for the RHR and SBGT systems. Revise system checklist for walkdowns and conduct multi-discipline reviews of all critical systems prior to startup.

18. **Improve NED Site Support during Startup and Power Ascension**

Provide a coordinated review of the NED/CNS Engineering functions and interfaces related to startup and power ascension, and develop an upgraded interface agreement better defining work function, and responsibilities

Provide augmented NED on-site support for CNS startup and power ascension activities.

19. **OD/OE Review**

Review ODs and OEs for degraded and nonconforming conditions that currently exist and assess startup significance.

20. **Pre-Conditioning**

Complete resolution of the CAL pre-conditioning issues.

21. **IST and Surveillance Testing**

1. Verify IST program scope and testing adequacy by constructing the basis for component IST requirements and identifying discrepancies.

2. Conduct an evaluation of [types and numbers of] surveillance tests performed to determine program adequacy.

22. **Startup Experience Following Extended Outages**

Conduct special operating experience search for startup issues following long shutdown.

23. **Open OERs**

Evaluate current open OERs for startup significance.

24. **Reactor Vessel Thermal Transient**

Review the reactor vessel and attached piping thermal transients and determine that the thermal fatigue limits have not been exceeded and assure margin adequate for further operation exists.

25. **Develop procedure hierarchy to identify controlling procedures**

Identify all procedures which control and take precedence over other procedures. Screen lower level procedures for compliance with controlling procedures.

26. **Special Instructions**

Develop procedural contrc s and methods that ensure work performed using Special Instructions is performed at a quality and safety level consistent with that of existing SORC approved procedures.

27. **Screen backlog of procedure changes for significant items for start-up**

Identify all in-process procedure changes requiring approval prior to start-up or early in start-up sequence and ensure entry into tracking system.

28. **ADAM Changes**

Purge ADAM (class "B" model, as defined in NUREG 0654) of all reference to dose, dose rate and any use there of for determination of PARs.

29. **Method for handling surveillance test LCOs without allowed outage times**

Provide administrative controls for allowed out-of-service times for Technical Specification surveillances.

30. **Resolve the lack of program ownership in the NPG**

Establish effective ownership for programs which affect reactor safety.

31. **Nuclear Safety Awareness**

Strengthen the NPG nuclear safety culture and establish high standards of safe, reliable nuclear plant operation.

32. **Management Observations - Field Coaching Team Plus Management** Observations

Increase Management and Supervisory involvement in the field in order to:

1. Assess station material conditions
2. Assess compliance with established radiological and industrial safety work practices
3. Assess compliance with station work documents
4. Coach and mentor personnel in the field
5. Re-enforce management's expectations and standards in the field
6. Improve organization communication channels

33. **Industrial Safety**

One of the major objectives of the District is to protect its employees and the public from accidents. Whenever economically possible, the District will eliminate hazards from employee work areas. However, where hazards cannot be economically removed, it becomes the responsibility of each supervisor and employee to recognize these hazards and deal with them in a manner that will prevent accidents.

34. **Licensing Submittals**

Development of internal procedures and practices that assure that all licensing submittals contain accurate information and that all commitment made to external agencies are completed on time.

27. **Screen backlog of procedure changes for significant items for start-up**

Identify all in-process procedure changes requiring approval prior to start-up or early in start-up sequence and ensure entry into tracking system.

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34. **Licensing Submittals**

Development of internal procedures and practices that assure that all licensing submittals contain accurate information and that all commitment made to external agencies are completed on time.

APPENDIX D - POTENTIAL RESTART ITEM EVALUATION FORM

RESTART WORK ITEM ADDITION BASIS CHECKLIST

RESTART ITEM IDENTIFIER: _____

Check the basis for adding the item to the Restart List. The absence of a mark indicates that the item should not be added to the Restart List. If no criterion is satisfied, this form still must be completed and signed by the Responsible Manager.

Level I Screening Evaluation:

_____ Issues were evaluated to identify potential safety or operability concerns. These issues were automatically categorized as restart items.

Level II Screening Evaluation:

Issues that were not categorized as restart items during the Level I screening evaluation must be reassessed to determine if there are other reasons for considering them restart items. Satisfying any of the following criteria qualifies the item as a restart item.

If an event or finding involves or could reasonably lead to:

_____ an event, component failure, deficiency or condition that could result in operation in a LCO Action Statement, or

_____ failing to perform a required surveillance test or other license requirement or meet a commitment to an outside agency, or

_____ failure of power production equipment that could result in a plant transient, derating, or plant shutdown, or

_____ conditions that have resulted in repetitive safety system equipment failures, or

_____ potential licensing basis deficiencies requiring maintenance to restore conforming conditions (i.e., deficiencies in safety-related or other qualified equipment, e.g., EQ, Appendix R, or seismic), or

_____ potential design basis deficiencies, i.e., deficiencies in safety-related equipment or other technical specification equipment not in conformance with the CNS USAR, or

_____ deficiencies in configuration management programs, processes, engineering analysis codes, or documentation that have, or could have, a reasonable likelihood of affecting equipment operability, or

_____ conditions that may create an unacceptable potential for an unplanned radioactivity release to the environment or discharge effluent to the environment which is in excess of limits.

Based on the above, the issue should____/should not____ be added to the Restart List.

_____ _____

Screened By Date

_____ _____

Responsible Manager Signature Date

RESTART WORK ITEM ADDITION/DELETION FORM

Retain____ Add____ Delete____

RESTART ITEM IDENTIFICATION (RESTART LIST#, WORK DOC.#, SYS, ETC.)	RESTART ITEM OWNER
	ADDITION/DELETION INITIATOR

ITEM/WORK DESCRIPTION

REASON FOR ADDITION/DELETION

EVALUATION

Cognizant System
Engineer/Supervisor Signature_____ Date_____

-or-

Cognizant Manager Signature_____ Date_____

MANAGEMENTREVIEW COMMITTEE (MRC) APPROVAL

MRC Approval Signature_____ Date_____

For Group items, list all applicable documents.

APPENDIX E - SYSTEM READINESS ASSESSMENT

PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

SYSTEM READINESS ASSESSMENT

The following activities will occur as part of the final stage system readiness reviews.

Final System Readiness review (See attached form)

1. The System Engineer will review and affirm that for the subject focus system:

   a. The system readiness review is complete with any concerns resolved.

   b. System Engineer material condition walkdowns on focus systems are complete.

   c. Emergent items since completion of Rev. 0 of the Restart List have been properly dispositioned as restart or non-restart.

   d. Reviews of information related to recurring equipment/system problems (adverse trends) have been completed and a plan to address open items is in place -- compensatory measures have been established, as appropriate.

2. Engineering Manager, Plant Manager and Site Manager approval have been obtained.

SYSTEM READINESS REVIEW CHECKLIST

SYSTEM NAME

SYSTEM ENGINEER REVIEW SUMMARY (The System Engineer shall initial each item below to confirm reviews are complete)

_____ System open Maintenance Work Requests
_____ Plant Temporary Modifications
_____ Preventative Maintenance
_____ ACT items
_____ System Walkdown performed
_____ Nuclear Action Item Tracking

REMARKS (The System Engineer can provide any additional relevant information deemed necessary to provide a complete summary of system readiness)

System Engineer Signature _____ Date _____

ENGINEERING MANAGEMENT REVIEW & APPROVALS

Supervisor Signature _____ Date _____

Engineering Mgr Signature _____ Date _____

COMMENTS:

PLANT MANAGER APPROVAL

_____ _____
Plant Manager Date

SITE MANAGER APPROVAL *

_____ _____
Site Manager Date

* Required if comments noted

Critical System List

PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

Critical Systems List

1. Service Water
2. Control Rod Drive
3. Core Spray
4. Electrical Equipment
5. Residual Heat Removal
6. Reactor Core Isolation Cooling
7. Primary Containment
8. Main Steam
9. Diesel Generator
10. High Pressure Coolant Injection
11. Nuclear Boiler Instrumentation
12. Instrument Air
13. Standby Gas Treatment
14. Reactor Equipment Cooling
15. Primary Containment Isolation System
16. Reactor Protection System
17. Heating & Ventilation (Essential)
18. Standby Liquid Control
19. Neutron Monitoring
20. Automatic Depressurization
21. Radiation Monitoring
22. Turbine Generator Controls
23. Switchyard

APPENDIX F - DEPARTMENT READINESS ASSESSMENT

PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

Department Restart Readiness Assessment

Departments in the General Office and at CNS will conduct an assessment of actions needed to support department readiness for restart, addressing areas indicated below. Readiness will address both hardware and software considerations for restart and beyond. The overall objective of this effort is not just to ready the plant and site for a moment in time, but to lay the foundation to carry CNS forward with effective operations beyond restart.

Applicability

- Site Manager direct reports and their direct reports.
- Corporate Division Manager of Nuclear Engineering and Construction

Department Manager Readiness Assessment and Affirmation

- Organization responsibilities and functions defined.
- Programs and processes sufficient to support restart.
- Restart Items verified to be complete.
- Personnel/management evaluation complete and short-term personnel/organization actions complete.
- Necessary department training complete.
- Standdowns and communication plan complete; effectiveness assessed.
- Post-restart items identified and understood; workoff plan established; performance indicators in place, and periodic monitoring/assessment established.
- Phase 2 and 3 Plans on schedule for development/implementation
- Assessment and performance monitoring processes in place -- preliminary positive feedback.

Department Manager Review of Above Items With Site Manager

- Feedback, expectations, and coaching.
- Status and process assessed.
- Restart readiness affirmed.
- Post-restart efforts defined and controlled.

Affirmation of department restart readiness is provided by the attached form.

MANAGEMENT VERIFICATION FOR STARTUP

DEPARTMENT _____ DEPARTMENT MANAGER _____

In addition to G.O.P. 2.1.1.1 requirements, the following items have been reviewed to ensure no open items will impact safety on plant startup:

Signature

1. All department open items reviewed including:
   - Maintenance Work Requests _____
   - Condition Reports _____
   - Commitment/Open Item Tracking _____
   - Procedure Changes _____
   - Training _____
   - Open OER Documents _____
2. Any other items considered important to safety. _____

I verify readiness to Startup and have completed an extensive walkdown of plant systems. The plant is ready to return to power operation. Any comments are noted below:

COMMENTS:

_____ _____
DEPARTMENT MANAGER DATE

REVIEWED:

_____ _____
SENIOR MANAGER DATE

_____ _____
* SITE MANAGER DATE

* Required if comments noted

APPENDIX G - LICENSING READINESS

PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

LICENSING REGULATORY CLOSURE AFFIRMATION

1. The Licensing Manager shall ensure that reasonable documentation exists to verify completion of all restart actions agreed upon between the NRC and NPPD.

2. The open license tracking items have been reviewed and determined acceptable for startup.

3. All open commitments to outside regulatory agencies have been reviewed and determined to be acceptable for startup.

Exceptions:

_____

Licensing Manager

_____

MRC Approval

APPENDIX H - PROGRAM READINESS ASSESSMENT

Program Readiness Assessment

PROGRAM: _____

PROGRAM OWNER: _____

I. Program Ownership and Definition

A. Is ownership clearly defined: If so, where?

B. Do any portions of the program involve split ownership? If so, explain:

C. List procedures that define and/or implement the program.

D. Are organizational interfaces clearly defined in implementing procedures? If not, explain:

E. Based on the above, describe any necessary procedure changes or actions which need to be taken.

II. Potential Consequences of Plant Restart With Undetected Weaknesses in This Program.

A. Does the program impact nuclear safety, plant reliability, regulatory compliance, or plant operation? (If no impact, no further evaluation may be necessary for restart.)

If there is an impact, provide reference to Restart List screen.

III. Program Health and Effectiveness

A. What performance indicators exist for the program?

B. Do backlogs exist? If so, are they being adequately managed? How?

C. Describe the health of the program and bases for this determination. Consider external and internal evaluations within the past 18 months and overall performance indicators.

IV. List of Actions Recommended For Restart or Post-Restart/Bases for This Recommendation:

V. Restart Conclusion:

Program is adequate for restart. ☐

Program is adequate for restart, but requires long-term improvements. ☐

Program is not adequate for restart. ☐

_____ ____/____/____
Evaluator Date

_____ ____/____/____
Department Manager Date

PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

FOCUS PROGRAM LIST

Cooper Nuclear Station

1. Operability Determinations
2. Surveillance Testing/LCO Tracking
3. Plant Labeling
4. Calibration Program
5. Operating Experience Reviews
6. Corrective Action Program
7. Oversight Programs (SRAB/SORC)
8. Assessment (Quality Assurance)
9. Industrial Safety
10. Records Management
11. Radwaste Storage and Disposal
12. In-service Inspection
13. In-service Testing
14. Appendix J Testing
15. Check Valves
16. Welding
17. Erosion/Corrosion
18. Snubbers
19. Commercial Grade Dedication

FOCUS PROGRAM LIST (CONT)

Cooper Nuclear Station (cont)

20. Shelf Life
21. Reliability and Performance Monitoring
22. Shift Technical Advisor Program
23. Vendor Manuals
24. Systems Engineering
25. MIC Monitoring and Mitigation
26. Operability Evaluations
27. Equipment Data File
28. Predictive Maintenance
29. Preventative Maintenance
30. QA Audit/Surveillance Program
31. QA Supplier Audit Program
32. Quality Control
33. Work Control

PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

FOCUS PROGRAM LIST

Nuclear Engineering and Construction Division (NECD)

1. Instrument Setpoints
2. Equipment Qualification
3. Equipment Classification
4. Fire Protection - Appendix A/R
5. Meter Banding
6. Relief Valve Setpoints
7. Temporary Shielding
8. Seismic Qualification
9. Design Change Program
10. Relay Setpoints
11. Fuse and Breaker Coordination
12. Load Studies (AC/DC/DG)
13. Pipe Hangers
14. MOV Program
15. Probabilistic Risk Assessment
16. Design Basis
17. Configuration Management

PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

FOCUS PROGRAM LIST

Training

1. Instrument & Control
2. Mechanical Maintenance
3. Electrical Maintenance
4. Chemistry
5. Health Physics/Radiological Support
6. Engineering Support
7. Simulator Certification
8. Shift Supervisor
9. Licensed Operator Requalification
10. Shift Technical Advisor
11. Reactor Operator
12. Senior Reactor Operator
13. Station Operator

APPENDIX I - SITE READINESS ASSESSMENT

PERFORMANCE IMPROVEMENT PLAN - RESTART READINESS PROGRAM

Site Readiness Assessment

The Management Review Committee shall consider the following in providing its affirmation to the Site Manager.

- Organization and Personnel Readiness
- Systems Readiness
- Department Readiness
- Outage Closure
- Restart List Closure
- Post-restart Plans Established
- Assessments Complete
- Other

SITE READINESS ASSESSMENT FORM

ROLL UP AND REVIEW OF SITE READINESS ASSESSMENTS
(Principal Areas to be Reviewed)

* Organization and Personnel
* System Readiness
* Department Readiness
* Program Readiness
* Outage Closure
* Restart List Closures
* Post Restart Plans
* Assessments
* Other (Specify)

REVIEW AND APPROVAL FOR INITIAL MODE CHANGE

MRC REMARKS

(MRC can provide any additional relevant information deemed necessary to complete this site readiness review for mode change.)

SORC REMARKS

(SORC can provide any additional relevant information deemed necessary to complete this site readiness review for mode change.)

(MRC Chairman and SORC by their signature will affirm that the above and any other relevant areas have been reviewed and that each supports mode change)

MRC Chairman Approval _____ Date _____

SORC Approval _____ Date _____

REVIEW AND APPROVAL FOR SITE CRITICALITY

MRC REMARKS

(MRC can provide any additional relevant information deemed necessary to complete this site readiness review for mode change.)

SORC REMARKS

(SORC can provide any additional information deemed necessary to complete this site readiness review for mode change.)

(MRC Chairman and SORC by their signature will affirm that the above and any other relevant areas have been reviewed and the Full Site Readiness Assessment completed such that each supports mode change.)

MRC Chairman Approval _____ Date _____

SORC Approval _____ Date _____

APPENDIX J - CROSS REFERENCE OF DSAT FIELD NOTES AND PHASE 1 PLAN

DSAT FIELD NOTES NOT INCORPORATED
INTO THE PHASE 1
PERFORMANCE IMPROVEMENT PROGRAM

FIELD NOTE	SUPPLEMENTAL INFORMATION
WW-27	All
WW-25	All
WW-21	All
WW-20	All
WW-15	Guidance on when system lineups should be conducted
WW-13	All
WW-06	All
WW-02	All
RB-11	Phase 2/3 Plans on AOT Phase I only covers instrumentation
RB-09	Guidance on when periodic valve lineups are required
RB-05	All
DM-09	Phase 2/3 Plans
RB-02	Phase 2/3 Plans
DM-08	Example 5
DM-07	All
DM-01	All
DM-11	Example 7
DM-10	Examples 2, 6, Causes 1,3
WW-26	Phase 2/3 Plans
SV-23	Examples 1, 2, 3 Phase 2/3 Plans
SV-22	Example 1 and Overall Description
SV-21	Example 3
SV-18	All
SV-16	Examples 2, 3, 5, Phase 2/3 Plans
SV-15	All
SV-12	All
SV-07	Phase 2/3 Plans to address rework, work arounds, and increased out-of-service times
SV-04	Phase 2/3 Plans

FIELD NOTE	SUPPLEMENTAL INFORMATION
SV-06	All
SV-01	Description - Phase 2/3 Plans
RC-13	All
RC-14	All
RC-12	All
RC-05	All
RC-04	Threshold for what constitutes a DC, and MWR 94-006 item
RC-02	All
WW-18	All
WW-03	All except dose assessment model items
SE-16	All
SE-15	All
SE-14	All but QC item
SE-13	All
SE-12	All
SE-09	All
SE-08	All
SE-05	All
SE-07	All
SE-04	All
SE-03	All
SE-02	All
SE-01	All
RC-15	TPCN, PCN items
RC-10	All
RC-06	All
RC-01	All
JD-12	All
JD-10	All
JD-09	All

FIELD NOTE	SUPPLEMENTAL INFORMATION
JD-08	All
JD-01	Examples 1, 4, 6, 8, 9, 10 Causes 1, 2, 3, 4
DK-06	All
DK-05	Examples 2, 3
DK-01.1	Examples 2, 3, 4, 6, 7
DB-01	Phase 2/3 Plans
WW-17	Verify captured by DM-09
WW-14	All except for work control/special instructions
RA-10	Review examples to verify drawing corrections OK
RA-09	Examples 1, 2, 3
RA-08	All
RA-05	Phase 2/3 Plans
JC-02	All
JC-01	All
GW-19	Description, Programmatic and Management Phase 2/3 Plans
GW-18	Example 4
GW-17	Examples 2, 3
GW-16	All
GW-15	Examples 1, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
GW-14	All
GW-13	All
GW-12	All
GW-11	All
GW-10	Phase 2/3 Monitoring
GW-09	Examples 1, 2, 3, 4. Phase 2/3 Drawing Change Program plans, correction of previous deficiencies, etc.
GW-05	All
GW-04	All
GW-03	All
GW-02	All

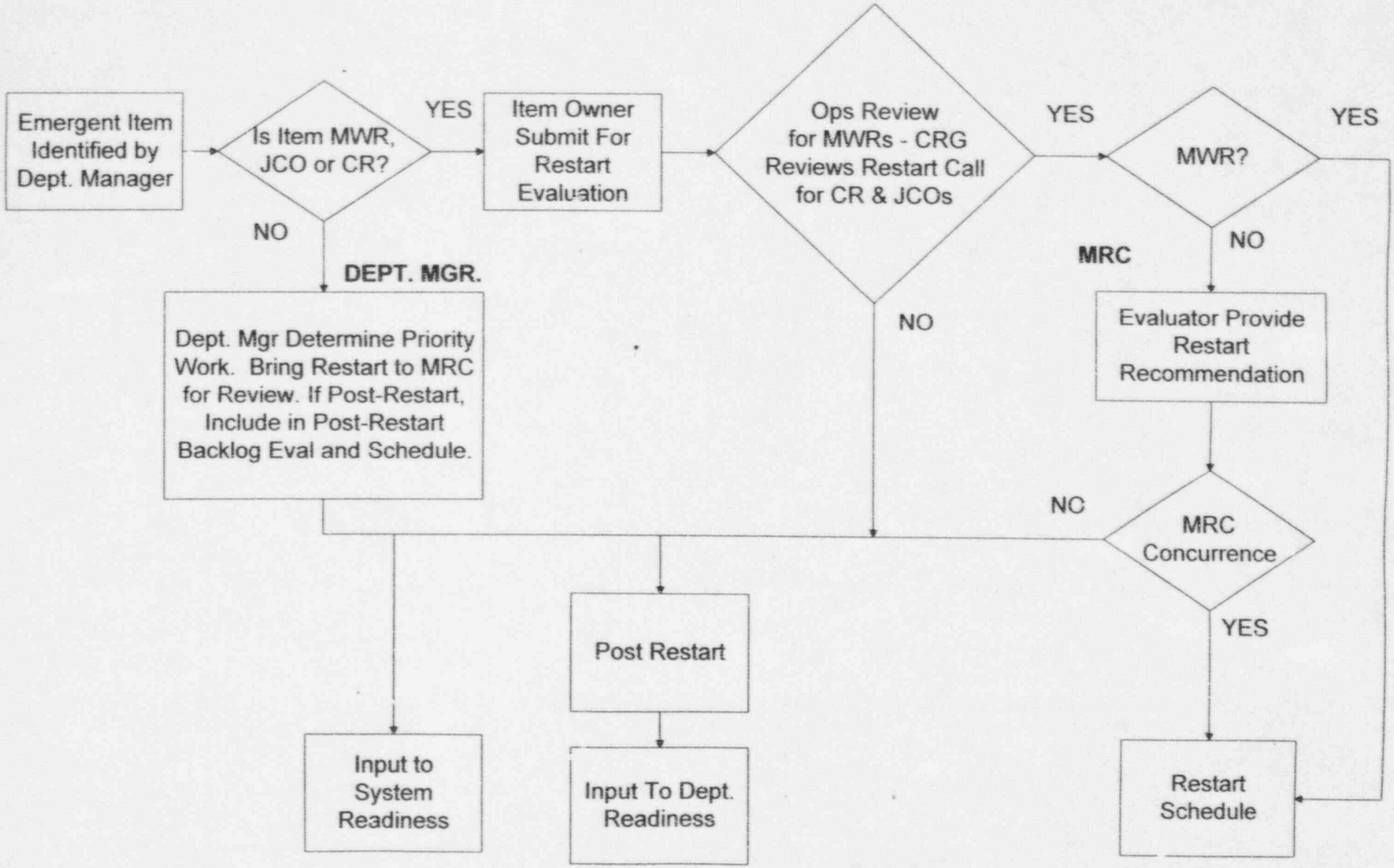
FIELD NOTE	SUPPLEMENTAL INFORMATION
DK-04	System Engineering Monitoring Program
CB-21	All
CB-19	All
CB-18	EWR Process Phase 2/3 Monitoring of Root Cause Analysis process and implementation of corrective actions
CB-17	All
CB-16	Narrow focus/complianced based evaluation of generic issues
CB-15	All but SIL 564 item
CB-14	All
CB-13	Phase 2/3 Action on OER Program Ensure specific items listed as examples have been reviewed during recent OER review project
CB-12	Phase 2/3 monitoring of Root Cause Analysis adequacy, and Corrective Actions correlate with root cause analysis
CB-11	All
CB-10	Phase 2/3 Plans for OER Program, Post-trip review procedure adequacy
CB-09	All
CB-08	All
CB-07	All
MCB-01	Failed or absent barriers, Phase 2/3 assessment and monitoring of CAP performance, OER Phase 2/3 Plan and assessment of OER Program performance
MGW-01	All of Description
MGW-02	All of Description, RHR-MO-27A/B and 34A/B example
MGW-06	Phase 2/3 Plans regarding configuration control
MGW-07	Phase 2/3 Plans regarding design control and example regarding testing of modification to see if it works
MCB-02	Phase 2/3 monitoring and assessment of issues listed
MJD-01	All
MJD-02	All
MJD-03	All except example 4

FIELD NOTE	SUPPLEMENTAL INFORMATION
MJD-06	All
MJD-07	Phase 2/3 Plans of independent oversight
MJD-08	All
MJD-09	All
MSV-05	Phase 2/3 assessment of description
MRB-01	Phase 2/3 Plans and assessment of work control program
MSV-01	Phase 2/3 assessment of the quality of Maintenance work activities
MSV-02	Phase 2/3 Plans to resolve inadequacies in station procedures and instructions
MSV-03	Phase 2/3 Plans to resolve long standing equipment problems
MRB-02	Phase 2/3 assessment regarding compliance with established programs and procedures
MWW-03	All
WW-17	Examples 1, 2, 3
RC-04	All
DM-10	Examples 2, 6
SV-01	All Examples
RA-09	Examples 2, 3
GW-17	Example 2
DK-04	Example
CB-07	Example
CB-13	All
GW-14	Examples 1, 2, 3
GW-15	Examples 1, 3, 5, 7, 9, 10, 11, 13, 14, 15
MGW-02	MO-27A/B, MO-34A/B Example
MCB-02	Example 4, Item d
WW-16	Closed out by DSAT Team
WW-10	Closed out by DSAT Team
WW-11	Closed out by DSAT Team
WW-09	Closed out by DSAT Team

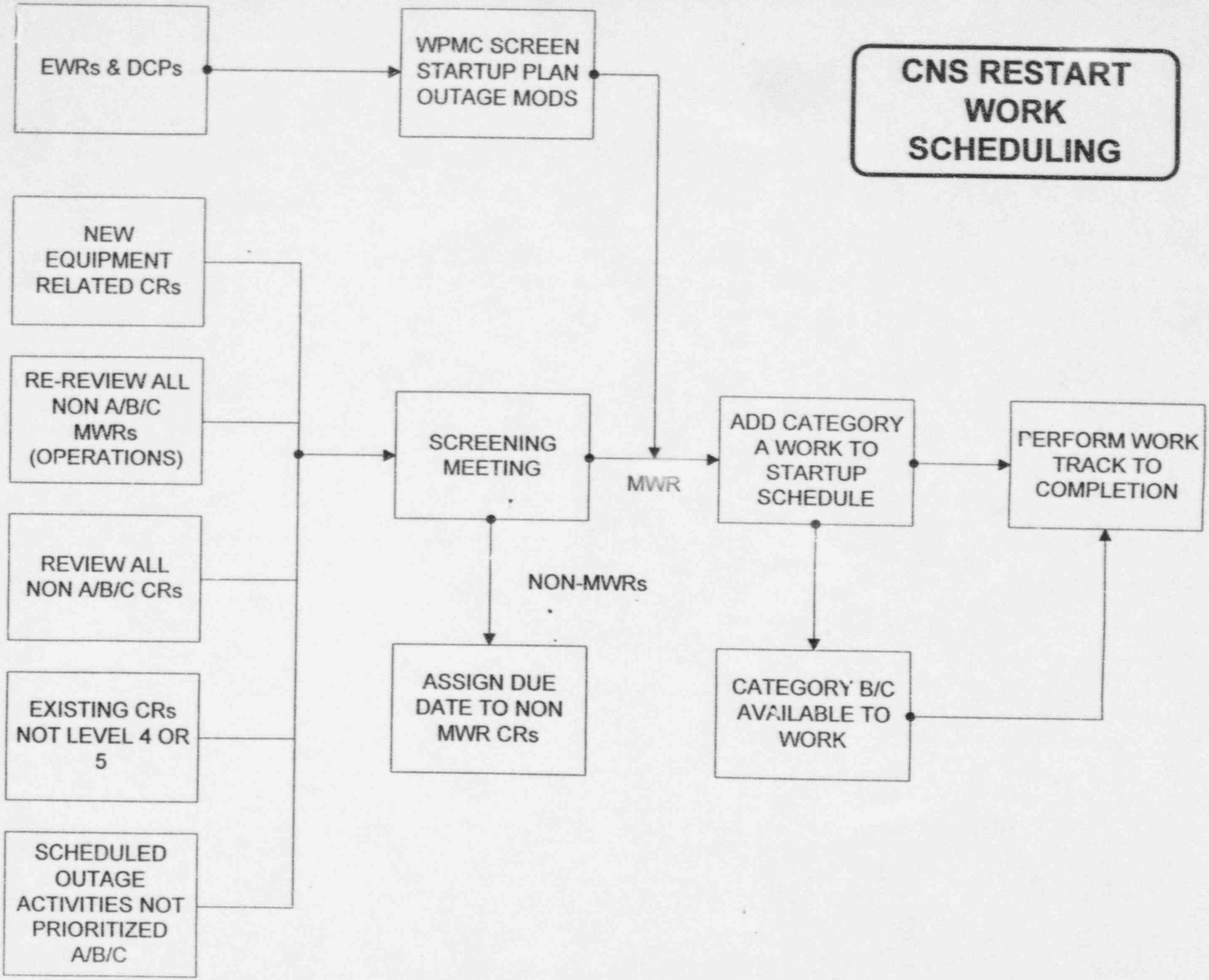
FIELD NOTE	SUPPLEMENTAL INFORMATION
WW-08	Closed out by DSAT Team
WW-12	Closed out by DSAT Team
RB-07	Closed out by DSAT Team
WW-01	Closed out by DSAT Team

APPENDIX K - EMERGENT ISSUES FLOWCHART

EMERGENT ISSUES



APPENDIX L - MAINTENANCE WORK REQUEST SCREENING


CNS RESTART WORK SCHEDULING
EWRs & DCPs
WPMC SCREEN STARTUP PLAN OUTAGE MODS
NEW EQUIPMENT RELATED CRs
RE-REVIEW ALL NON A/B/C MWRs (OPERATIONS)
REVIEW ALL NON A/B/C CRs
EXISTING CRs NOT LEVEL 4 OR 5
SCHEDULED OUTAGE ACTIVITIES NOT PRIORITIZED A/B/C
SCREENING MEETING
MWR
NON-MWRs
ASSIGN DUE DATE TO NON MWR CRs
ADD CATEGORY A WORK TO STARTUP SCHEDULE
CATEGORY B/C AVAILABLE TO WORK
PERFORM WORK TRACK TO COMPLETION

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

November 10, 1994

MEMORANDUM FOR: L. J. Callan, Regional Administrator, Region IV
R. P. Zimmerman, Associate Director for Projects, NRR

FROM: A. B. Beach, Director, Division of Reactor Projects
J. W. Roe, Director, Division of Reactor Projects III/IV

SUBJECT: COOPER NUCLEAR STATION (CNS) RESTART PANEL

Presently, a number of matters, consisting of both safety concerns and regulatory issues, have been identified at the CNS through the routine and reactive inspection programs and independent assessments of licensee performance. The types of problems currently known at the CNS involve a wide variety of performance issues in the areas of operations. maintenance, surveillance, corrective actions, self-assessment capabilities, review of operational experience information, maintaining design basis information, and management oversight of the operation of the facility. In addition to these issues, additional issues will be identified by the Special Evaluation Team, which recently completed an inspection at the CNS.

Based on the wide variety, complexity, and volume of issues at the CNS, it is recommended that a Restart Panel be created. This Panel will be structured to fully implement the requirements specified in Manual Chapter (MC) 0350, "Staff Guidelines for Restart Approval." The Restart Action Plan will be developed by the Panel and will be forwarded to you as soon as it is completed. A charter and the membership for the Panel is provided as Enclosure 1 for your information. The Panel would consider the various issues and the licensee's actions to address and correct the problems. Following these considerations, the Panel would make specific recommendations for NRC actions in order to disposition the issues, including a recommendation at the appropriate time, regarding the readiness of the plant for restart.

/s/

A. Bill Beach, Director
Division of Reactor Projects

/s/

J. W. Roe, Director
Division of Reactor Projects III/IV

Enclosure:
As stated

A/39

9505190051

L. J. Callan
R. P. Zimmerman

cc:
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D. Freeman
J. Gilliland
C. Hackney
R. Wise

C:DRP/C	D:PDIV-1	D:DRP
PHarrell;dlf	WDBeckner	ABBeach
10/20/94	11/10/94	11/10/94