APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report No. 50-298/91-24

Operating License No. DPR-46

Licensee: Nebraska Public Power District
P.O. Box 499
Columbus, Nebraska 68602-0499

Facility Name: Cooper Nuclear Station (CNS)

Inspection At: CNS, Brownville, Nebraska

Inspection Conducted: November 18-22, 1991

Inspectors: A. Singh, Reactor Inspector, Test Programs Section
Division of Reactor Safety

D. L. Kelley, Reactor Inspector, Test Programs Section
Division of Reactor Safety

Other Accompanying Personnel: S. J. Campbell, Reactor Engineer, Office of Nuclear Reactor Regulation

Approved: _____ 12/13/91
J. E. Gagliardo, Chief, Test Programs Section Date
Division of Reactor Safety

Inspection Summary

Inspection Conducted November 18-22, 1991 (Report 50-298/91-24)

Areas Inspected: Routine, announced verification of isolation component exemptions (VOICE) inspection at the Cooper Nuclear Station.

Results: Within the areas inspected, no violations or deviations were identified. The inspectors observed no significant discrepancies and concluded that the licensee had a strong program in the area of containment building leak rate testing. The inspectors did note that with the exception of one penetration outside the containment building the penetrations were not labeled. The associated isolating components had the appropriate labels and/or tags attached. It was also noted that the licensee had three exemptions to Appendix J to 10 CFR Part 50 regarding leak rate testing requirements for the Type A and C tests. The documents reviewed substantiated that the exemptions were in accordance with Appendix J.

DETAILS

1. PERSONS CONTACTED

NPPD

*R. Blungardt, Operations Manager
*L. Bray, Regulatory Compliance Specialist
*B. Crow, Lead Mechanical Engineer
*M. Dean, Nuclear Licensing and Safety Supervisor
*J. Flaherty, Engineering Manager
*R. Gardner, Senior Manager of Operations
R. Gibson, Audit and Programs Quality Assurance
*G. Hicks, ISI Engineer
*H. Hitch, Jr., Plant Services Manager
*E. Mace, Senior Manager of Staff Support
*J. Meacham, Division Manager of Nuclear Operations
F. Schizas, LLRT/ILRT Engineer
*G. Smith, Quality Assurance Manager
M. Spencer, Engineering Programs Supervisor

NRC

*L. Ellershaw, Reactor Inspector, Region IV
*R. Kopriva, Senior Resident Inspector
W. Walker, Resident Inspector

*Denotes those attending the exit meeting on November 22, 1991.

2. VERIFICATION OF ISOLATION COMPONENT EXEMPTIONS (VOICE)

The objectives of the VOICE inspection is to (1) identify containment penetrations, and associated isolation components, which are exempted from the containment leak rate test program; (2) verify that the exempted components meet the criterion for the exception; and (3) verify that containment penetrations and components, which were originally exempted but have subsequently been modified, received a subsequent evaluation to substantiate the continued need for the exemption.

The inspection included a visual inspection of all accessible penetrations, a review of the drawings and plans for all penetrations, and a review of the most recent containment local leak rate test results.

2.1 Verification of Containment Integrity (61715)

The purposes of this portion of the inspection were to visually identify all containment building penetrations and their isolating components; to verify that the components were identified on current piping and instrumentation diagrams or other drawings; to determine which isolating components or

requirements had been exempted from 10 CFR Part 50, Appendix J, leak rate testing programs; to determine if the criteria for exemptions were met, as set forth in Appendix J; and to identify any isolating components or requirements that had been given test exemption approval by the Office of Nuclear Reactor Regulation (NRR).

The inspectors attempted to perform a 100 percent walkdown of the penetrations which involved 112 mechanical and 26 electrical containment building penetrations and 176 associated isolating components. Because of inadequate lighting, congestion, and radiological conditions, only 46 of the valves and 13 of the penetrations were examined by the inspectors. The inspectors traced associated system piping coming through an identified penetration back to its designated containment building isolation components on either side of the containment building wall. All of the penetrations inspected and their descriptions are listed in the Attachment. It was observed during the walkdown that only one penetration (X-16A) was labeled (on the outside of the containment only). The licensee stated that a program was in place to label all penetrations.

The inspectors compared piping and instrumentation drawings to the leak testing procedures. The isolation valves for penetrations, X-210B and X-211B, on drawing 2040 were illegible, and three valve numbers were missing on drawing 2041. Valve nomenclature on the drawings did not coincide with the valve nomenclature in the plant or in the established plant procedures. The inspectors did not consider these issues to be safety significant. However, licensee representatives stated that adequate measures would be taken to correct the nomenclature on the penetration drawings.

The inspectors concluded that the licensee had implemented an effective program to assure containment integrity.

2.2. Containment Local Leak Rate Testing (LLRT) (61720)

The purpose of this portion of the inspection was to verify that the containment building LLRT, required by the Technical Specifications (TS), were performed to ensure that leakage through testable containment penetrations and isolation valves would not exceed the allowable leakage specified. This review included an examination of the records, procedures, and independent calculations associated with the LLRT.

During the inspection, the inspectors reviewed the primary containment building LLRT Surveillance Procedure 6.3.1.1, Revision 27, dated November 1, 1990. The procedure was comprehensive and satisfactorily stated the acceptance criteria for each penetration, each containment isolation valve (CIV), and the containment airlock and the equipment hatch. Test procedure instructions were concise and provided for the independent verification of test results and system restoration. The inspectors reviewed 100 percent of the records for the LLRTs conducted during 1990 and 1991 refueling outages. In conducting this review, the inspectors verified that all test pressures were within the test pressure ranges established for each

system in accordance with Revisions 26 (1990) and 27 (1991) of Surveillance Procedure 6.3.1.1. The certification signatures and LLRT engineer's initials (and applicable dates) were on the test results and data sheets. These documents were cross checked and no discrepancies were identified. The cumulative data for containment testable penetrations and isolating components were reviewed to verify that the containment building local leak rate did not exceed the acceptance criteria established in 10 CFR Part 50, Appendix J. The LLRT results were well within the acceptance criteria as required by the TS.

The inspectors also observed the performance of an LLRT. The inspectors verified the tested valve to be properly labeled and tagged. The inspectors also verified that the timing devices and temperature and pressure indicators were within the calibration recall dates of the plant's established calibration procedures. The individuals performing the test were knowledgeable and performed the test in a professional manner. The valve met the acceptance criteria specified in Revision 27 of Surveillance Procedure 6.3.1.1.

The inspectors also reviewed the training records of the individuals who performed the LLRT tests. The records of these individuals indicated that the individuals met the licensee's established qualification requirements.

The inspectors concluded that the licensee had established and effectively implemented a satisfactory LLRT program in accordance with Appendix J.

4. EXIT MEETING

An exit meeting was held on November 22, 1991, with personnel identified in paragraph 1 of this report. At the exit meeting, the inspectors summarized the scope and findings of the inspection. The licensee did not identify as proprietary any information provided to, or reviewed by, the inspectors.

ATTACHMENT

Containment Penetrations Reviewed

DRYWELL	DESCRIPTION	TORUS	DESCRIPTION
X-1A	EQUIP. HATCH	X-200A	ACCESS HATCH
X-1B	EQUIP. HATCH	X-200B	ACCESS HATCH
X-2	PERSON. HATCH		
X-3	NO. NOT USED		
X-4	DRYWELL HEAD ACCESS HATCH		
X-5A) *	(VENT)	(X-201A) *	(VENT)
X-5B) *	(VENT)	(X-201B) *	(VENT)
X-5C) *	(VENT)	(X-201C) *	(VENT)
X-5D) *	(VENT)	(X-201D) *	(VENT)
X-5E) *	(VENT)	(X-201E) *	(VENT)
X-5F) *	(VENT)	(X-201F) *	(VENT)
X-5G) *	(VENT)	(X-201G) *	(VENT)
X-5H) *	(VENT)	(X-201H) *	(VENT)
X-6	CRD REMOVAL HATCH	X-202A *	VACUUM BKR.
X-7A	MAIN STEAM	X-202B *	VACUUM BKR.
X-7B	MAIN STEAM	X-202C *	VACUUM BKR.
X-7C	MAIN STEAM	X-202D *	VACUUM BKR.
X-7D	MAIN STEAM	X-202E *	VACUUM BKR.
X-8	COND. DRAIN	X-202F *	VACUUM BKR.
X-9A	RPV FEEDWATER	X-202G *	VACUUM BKR.
X-9B	RPV FEEDWATER	X-202H *	VACUUM BKR.
X-10	STM. TO RCIC	X-202I *	VACUUM BKR.

DRYWELL	DESCRIPTION	TORUS	DESCRIPTION
X-11	STM TO HPCI	X-202J *	VACUUM BKR.
X-12	SHDN. SUPP. RHR	X-202L *	VACUUM BKR.
X-13A	RHR SYS. RETURN	X-202M *	VACUUM BKR.
X-13B	RHR SYS. RETURN	X-203A	OXYGEN ANAL.
X-14R	CWU FROM REC1RC. PUMP	SX-203B	OXYGEN ANAL.
X-15	SPARE	X-204	NO. NOT USED
X-16A	CORE SPR. PUMP DISCH.	X-205	VAC. REL. FROM BLDG. & INLET PURGE
X-16B	CORE SPR. PUMP DISCH.	X-206A	LIQD. LVL. IND.
X-17	SPARE	X-206B	LIQD. LVL. IND.
X-18	EQUP. DRN. PUMP DISCH.	X-206C	LIQD. LVL. IND.
X-19	FLR. DRN. PUMP DISCH.	X-206D	LIQD.LVL. IND.
X-20	FLTRD. WATR. SUPP.	X-207A *	VENT LN. DRN.
X-21	SERV. AIR	X-207B *	VENT LN. DRN.
X-22	INSTR. AIR	X-207C *	VENT LN. DRN.
X-23	CLS. COOL. WTR. PUMP SUPP.	X-207D *	VENT LN. DRN.

DRYWELL	DESCRIPTION	TORUS	DESCRIPTION
X-24	CLS. COOL. WTR. PUMP SUPP.	X-207E *	VENT LN. DRN.
X-25	VENT TO DRYWELL	X-207F *	VENT LN. DRN.
X-26	VENT FROM DRYWELL	X-207G *	VENT LN. DRN.
X-27	CORE DLT. P HPCI DLT. P	X-207H *	VENT LN. DRN.
X-28	RPV LVL. & PRESS.	X-208A	RLF. VLV. DISCH. FROM MS.
X-29	RPV LVL. & PRESS.	X-208	BRLF. VLV. DISCH. FROM MS
X-30	STM. FLOW	X-208	CRLF. VLV. DISCH. FROM MS
X-31	RECIRC. PUMP SEAL LEAK	X-208	DRLF. VLV. DISCH. FROM MS
X-32	RECIRC. LOOP FOLW	X-202	ERLF. VLV. DISCH. FROM MS
X-33	RECIRC. LOOP DTL. P	X-208	FRLF. VLV. DISCH. FROM MS

DRYWELL	DESCRIPTION	TORUS	DESCRIPTION
X-34	STM. FLOW MEAS.	X-208	GRLF. VLV. DISCH. FROM MS
X-35	AT.I.P. DRIVE	X-208	HRLF. VLV. DISCH FROM MS
X-35B	T.I.P. DRIVE	X-209A	AIR & WTR. TEMP.
X-35C	T.I.P. DRIVE	X-209B	AIR & WTR. TEMP.
X-35D	T.I.P. DRIVE	X-209C	AIR & WTR. TEMP.
X-35E	N-2 PURGE	X-209D	AIR & WTR. TEMP.
X-36 (INACTIVE)	CRD RETURN	X-210A	RHR PUMP TEST LINE
X-37A	CRD INSERT	X-210B	RHR PUMP TEST LINE
X-37B	CRD INSERT	X-211A	CONT. COOL. TO SPR.
HDR.			
X-37C	CRD INSERT	X-211B	CONT. COOL. TO SPR.
HDR.			
X-37D	CRD INSERT	X-212	RCIC TURB EXH.
X-38A	CRD WITHDRAW	X-213A	DRAIN
X-38B	CRD WITHDRAW	X-213B	DRAIN
X-38C	CRD WITHDRAW	X-214	HPCI TURB. EXH.
X-38D	CRD WITHDRAW	X-215A	TMO. PRESS. INST.

DRYWELL	DESCRIPTION	TORUS	DESCRIPTION
X-39A	C. C. SPR. SYS.	X-216	SPARE
X-39B	C. C. SPR. SYS.	X-217	SPARE
X-40A	JET PMP. INST.	X-218	SPARE
X-40B	JET PMP. INST.	X-219	SPARE
X-40C	JET PMP. INST.	X-220	VENT PURGE OUTLET
X-40D	JET PMP. INST.	X-221	CND. FROM RCIC TURB. DRN. POT.
X-41	RECIRC. LOOP SAMPLE	X-222	COND. FROM HPCI TURB. DRN. POT.
X-42	STBY. LIQUID CONTROL	X-223A	CS PUMP TEST LINE
X-43	DECON.	X-223	BCS PUMP TEST LINE
X-44	DECON.	X-224	RCIC PMP. SUC.
X-45	SPARE	X-225A	RHR PMP. SUC.
X-46	INST. AIR	X-225B	RHR PMP. SUC.
X-47	INST AIR	X-225C	RHR PMP. SUC.
X-48	SPARE	X-225D	RHR PMP. SUC.
X-49	LPCI INTLK.	X-226	HPCI PMP. SUC.
X-50	LPCI INTLK.	X-227A	CS PMP. SUC.
X-51	PRESS. BELOW CORE	X-227B	CS PMP. SUC.

DRYWELL	DESCRIPTION	TORUS	DESCRIPTION
X-52	RCIC DLT. P	X-228	DEMIN. WTR. INLET
X-53	POW. OPER. TST.	X-229 A - H *	VACUUM BKR. ACT. AIR
		X-229-I	NO. NOT USED
		X-299 J - M *	VACUUM BKR. ACT. AIR
		X-300 A - P	TORUS TEMP. MONITORING
X-100A - H	ELECTRICAL	X-230	ELECTRICAL
X100C	SPARE		
X-101A - F	ELECTRICAL		
X-101A,B,E	SPARE		
X-102	ELECTRICAL		
X-103	ELECTRICAL		
X-104A - E	ELECTRICAL		
X-104C	SPARE		
X-105A - D	ELECTRICAL		
X-105B	SPARE		
X-106	SPARE		

*Not subject to the leak testing requirements of 10 CFR Part 50, Appendix J

REFUELING OUTAGES

1991 - 1992

PLANT	DATE OF NEXT SCHEDULED OUTAGE
~~Wolf Creek~~	~~September 18 - November 22, 1991~~
~~South Texas Project, Unit 2~~	~~September 28~~ 14 ~~- December 7, 1991~~
~~Comanche Peak, Unit 1~~	~~October 5 - December 1, 1991~~
Cooper Nuclear Station	October 6 - December ~~6~~ 15, 1991
OK Fort Calhoun Station	January 31 - May 1, 1992
River Bend Station	Begin March 15 1992 } 150-180 day outage current unscheduled outage could impact refueling
Arkansas Nuclear One, Unit 1	Begin March 1992 } 55 to 65 day outages
Arkansas Nuclear One, Unit 2	Begin ~~July~~ September 1992 }
South Texas Project, Unit 1	Begin ~~August~~ September 1992
Waterford - 3	Begin September 1992

CPSES Rpt: 91-67
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6/17/91

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