DOCKET FILE

APR 18 1974

Docket No. 50-298

Nebraska Public Power District
ATTN: Mr. J. Pilant, Manager
Licensing and
Quality Assurance
P. O. Box 499
Columbus, Nebraska 68601

Change No. 4
License No. DPR-46

Gentlemen:

During a meeting in Bethesda, Maryland, on April 4, 1974, the Regulatory staff discussed with your representatives proposed Technical Specification changes required for Appendix A appended to Facility Operating License No. DPR-46. These miscellaneous changes are necessary for corrections, clarifications, and additions of a minor nature, the details for which are set forth in the enclosed Attachment A.

We have concluded that these changes do not present a significant hazards consideration and that there is reasonable assurance that the health and safety of the public will not be endangered.

Accordingly, pursuant to Section 50.59 of 10 CFR Part 50, the Technical Specifications (Appendix A) appended to Facility Operating License No. DPR-46 are hereby changed by replacing the existing pages i, 8, 49, 55, 56, 58, 59, 61, 63, 64, 65, 67, 71, 73, 78, 79, 80, 165, and 182 with those included with the enclosed Attachment A.

Sincerely,

Original Signed by

Voss A. Moore, Assistant Director
for Light Water Reactors, Group 2
Directorate of Licensing

Enclosure:
Attachment A (including
replacement pages
described above)

cc: see next page

0/1

OFFICE ➤						
SURNAME ➤						
DATE ➤						

Form AEC-318 (Rev. 9-53) AECM 0240 GPO C43 16 81465-1 520-284

APR 18 1974

cc: Mr. Gene Watson, Attorney
Wilson, Barlow & Watson
P. O. Box 81686
Lincoln, Nebraska 68501

Mr. Arthur C. Gehr, Attorney
Snell & Wilmer
400 Security Building
Phoenix, Arizona 85004

Mrs. Merle Morris, Librarian
Auburn Public Library
1118 15th Street
Auburn, Nebraska 68305

Mr. Ed Vest
Environmental Protection Agency
1735 Baltimore Avenue
Kansas City, Missouri 64108

bcc: J. R. Buchanan, ORNL
Thomas B. Abernathy, DTIE

DISTRIBUTION
AEC PDR
Local PDR
Docket File 50-298
LWR 2-1 File
Attorney, OGC
RO (3)
V. A. Moore
D. Skovholt
D. Eisenhut
R. Klecker
R. Vollmer
M. Jinks (4 per docket)
W. O. Miller (w/encl.)
H. Smith
E. Beckett
S. Kari
LWR 1 & 2 BC's
ACRS (16)
B. Scharf (25)
H. Gearin

OFFICE	L:LWR 2-1	LWR 2-1	LWR 2-1	L:LWR 2		Kg
SURNAME	HSmith:af	E. Beckett	J. Stolz	V. A. Moore		
DATE	4/18/74	4/18/74	4/18/74	4/18/74		

ATTACHMENT A

CHANGE NO. 4 TO THE TECHNICAL SPECIFICATIONS (APPENDIX A)
NEBRASKA PUBLIC POWER DISTRICT
(COOPER NUCLEAR STATION)
DOCKET NO. 50-298

1. Page i is revised to correct an inconsistency between the TABLE OF CONTENTS and the actual subheadings of Sections 3.3 and 3.4;

2. Page 8 is revised to correct an error in the designation of the LIMITING SAFETY SYSTEM SETTING of 2.1.F to be consistent with the definition of Hot Standby Condition (Page 2) and the instrument setpoint listed in Table 3.1.1;

3. Page 49 is revised to correct the paragraph number of a reference;

4. Pages 55, 56, 58, 63, 64, 65, 71, 73, 78, 79, and 80 contain corrections, delections, or additions to instrument identification numbers;

5. Pages 56, 58, 59, 61 and 65 contain corrections to instrument ranges and setting limits;

6. Page 67 contains a modification to Note 1 of Table 3.2.6 to designate allowable repair time, which was inadvertently omitted;

7. Page 165 contains an addition to Specification 3.7.B.4, to clarify the relationship of that requirement to Specification 3.7.B.2; and

8. Page 182 contains a correction to the Bases of Sections 3.7.B and 3.7.C, which corrects an error in designation of charcoal filter heater power.

Enclosures:
Pages i, 8, 49, 55, 56, 58, 59, 61, 63, 64, 65, 67, 71, 73, 78, 79, 80, 165, and 182

RADIOLOGICAL TECHNICAL SPECIFICATIONS

TABLE OF CONTENTS

Change No. 4
4/18/74

SAFETY LIMIT	LIMITING SAFETY SYSTEM SETTING
1.1.B (cont'd.) percent of rated, the reactor thermal power shall not exceed 400 MWt (about 16.8 percent of rated power). To ensure that the Safety Limit established in Specification 1.1.A and 1.1.B is not exceeded, each required scram shall be initiated by its primary source signal. The Safety Limit shall be assumed to be exceeded when scram is accomplished by a means other than the primary source signal.	2.1.B (cont'd.) nations of power and peak flux producing a total peaking factor less than 2.61, the APRM Control Rod Block set point shall be: $S \leq (0.66\ W + 42)$ The definitions used above for the APRM scram trip apply. For combinations of power and peak flux producing a total peaking factor greater than 2.61, the APRM Control Rod Block set point shall be: $S \leq (0.66\ W + 42)\ \frac{(2.61)}{TPF}$
C. Whenever the reactor is in the shutdown condition with irradiated fuel in the reactor vessel, the water level shall not be less than 18 in. above the top of the normal active fuel zone.	C. Scram and isolation reactor low water level (except MSIV) — ≥+12.5 in. On vessel level instruments
	D. Scram--turbine stop valve closure — ≤10 percent valve closure when above 30% turbine first stage pressure.
	E. Scram--turbine control valve fast closure — Turbine control fluid ≥1000 psi pressure when above 30% turbine first stage pressure.
	F. Scram--main steam line isolation valve closure — ≤10 percent valve closure when above (1000) psig reactor pressure, in 3 out of 4 main steam lines.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
3.2.D (cont'd.)	4.2.D (cont'd.)
5. Mechanical Vacuum Pump Isolation	5. Mechanical Vacuum Pump Isolation
a. The mechanical vacuum pump shall be capable of being automatically isolated and secured by a signal of high radiation in the main steam line tunnel whenever the main steam isolation valves are open.	The instrument surveillance requirements are given on Tables 4.1.1, 4.1.2, and 4.2.D.
b. If the limits of (3.2.D.5.a) are not met, the vacuum pump shall be isolated.	
E. Drywell Leak Detection	E. Drywell Leak Detection
The limiting conditions of operation for the instrumentation that monitors drywell leak detection are given in Table 3.2.E.	Instrumentation shall be calibrated and checked as indicated in Table 4.2.E.
F. Surveillance Information Readouts	F. Surveillance Information Readouts
The limiting conditions of operation for the instrumentation that provides surveillance information readouts are given in Table 3.2.F.	Instrumentation shall be calibrated and checked as indicated in Table 4.2.F.
G. Recirculation Pump Trip	G. Recirculation Pump Trip
The limiting conditions for operation for the instrumentation that trips the recirculation pumps as a means of limiting the consequences of a failure to scram during an anticipated transient are given in Table 3.2.G.	Instrumentation shall be functionally tested and calibrated as indicated on Table 4.2.G.

COOPER NUCLEAR STATION
TABLE 3.2.B (Page 3)
RESIDUAL HEAT REMOVAL SYSTEM (LPCI MODE) CIRCUITRY REQUIREMENTS

Instrument	Instrument I.D. No.	Setting Limit	Minimum Number of Operable Components Per Trip System (1)	Action Required When Component Operability is Not Assured
RHR Pump Low Flow	RHR-dPIS-125 A & B	$\geq$2500 gpm	1	A
Break Detection Time Delays	RHR-TDR-K28, A & B	$0.25 \leq T \leq 0.75$ sec.	1	A
	RHR-TDR-K40, A & B	$0.25 \leq T < 0.75$ sec.	1	A
	RHR-TDR-K34, A & B	$1.5 \leq T \leq 2.5$ sec.	1	A
	RHR-TDR-K81, A & B	10 min. $\pm$ .5 min.	1	A
	RHR-TDR-K86, A & B	10 min. $\pm$ .5 min.	1	A
	RHR-TDR-K45, 1A & 1B	5 min. $\pm$ .5 min	1	A
RHR Pump Start Time Delay	RHR-TDR-K75, A & B	$4.5 \leq T \leq 5.5$ sec.	1	A
	RHR-TDR-K70, A & B	$\leq$.5 sec.	1	A
RHR Heat Exchanger Bypass T.D.	RHR-TDR-K93, A & B	2 min. $\pm$ 5 sec.	1	B
RHR Crosstie Valve Position	RHR-LMS-2	N.A.	(3)	D
Bus 1A Low Volt. Aux. Relay	27 X 3/1A	Loss of Voltage	1	B
Bus 1B Low Volt. Aux. Relay	27 X 3/1B	Loss of Voltage	1	B
Bus 1F Low Volt. Aux. Relays	27 X 1/1F	Loss of Voltage	1	B
	27 X 2/1F	Loss of Voltage	1	B
Bus 1G Low Volt. Aux. Relays	27 X 1/1G	Loss of Voltage	1	B
	27 X 2/1G	Loss of Voltage		
Pump Discharge Line Low Pressure	CM-PS-266	$\geq$5 psig	(3)	D

Change No. 4
4/8/74

COOPER NUCLEAR STATION
TABLE 3.2.B (Page 4)
HPCI SYSTEM CIRCUITRY REQUIREMENTS

Instrument	Instrument I.D. No.	Setting Limit	Minimum Number of Operable Components Per Trip System (1)	Action Required When Component Operability is Not Assured
Reactor Low Water Level	NBI-LIS-72, A,B,C, & D #3	$\geq$-37" Indicated Level	2	A
Reactor High Water Level	NBI-LIS-101, A & C #4	$\leq$+58.5" Indicated Level	2(2)	A
High Drywell Press.	14A-K5, A & B (6) 14A-K6, A & B (6)	$\leq$2 psig	2(2)	A
HPCI Turbine High Exhaust Pressure	HPCI-PS-97, A & B	$\leq$150 psig	1(2)	A
HPCI Pump Low Suction Press.	HPCI-PS-84-1	$\leq$15" Hg Vacuum	1(2)	(A)
HPCI Pump Low Discharge Flow	HPCI-FS-78	$\geq$400 gpm	1(2)	(A)
HPCI Low Steam Supply Pressure	HPCI-PS-68, A,B,C & D	$\geq$100 psig	2(2)	A
HPCI Steam Line High ΔP	HPCI-dPIS-76 HPCI-dPIS-77	($\leq$ +180" & $\geq$ -180" H_2O) ($\leq$ +180" & $\geq$ -180" H_2O)	1	(A)
HPCI Steam Line Space Hi Temp.	HPCI-TS-101, A,B,C, & D -102, 103, 104, HPCI-TS-125,126,127,128 RHR-TS-150,151,152,153 154,155,156,157,158,159 160,161	$\leq$200° F	2(4)	A
Emerg. Cond. Storage Tank Low Level	HPCI-LS-74 A & B HPCI-LS-75 A & B	$\geq$0" H_2O (10,000 gal. usable remaining)	1(2)	A

Change No. 4
4/8/74

COOPER NUCLEAR STATION
TABLE 3.2.B (Page 6)
REACTOR CORE ISOLATION COOLING SYSTEM (RCIC) CIRCUITRY REQUIREMENTS

Instrument	Instrument I.D. No.	Setting Limit	Minimum Number of Operable Components Per Trip System (1)	Action Required When Component Operability Is Not Assured
RCIC High Turbine Exhaust Press.	RCIC-PS-72, A & B	≤25 psig	1(2)	A
RCIC Low Pump Suction Press.	RCIC-PS-67-1	≤-15" Hg	1(2)	(A)
RCIC Steam Line Space Excess Temp.	RCIC-TS-79, A,B,C, & D RCIC-TS-80, A,B,C, & D RCIC-TS-81, A,B,C, & D RCIC-TS-82, A,B,C, & D	≤200°F	2(4)	A
RCIC Steam Line High ΔP	RCIC-dPIS-83 & 84	≤+180"H_2O	1	A
RCIC Steam Supply Press. Low	RCIC-PS-87, A,B,C & D	≥50 psig	2(2)	A
RCIC Low Pump Disch. Flow	RCIC-FIS-57	≥40 gpm	1(2)	A
Pump Discharge Line Low Pressure	CM-PS-269	≥10 psig	(3)	D
RCIC Turbine Conditional Supervisory Alarm Timer	RCIC-TDR-K9	(14 < T < 16 sec.)	(3)	E
Reactor Low Water Level	10A-K80, A & B 10A-K79, A & B (NBI-LIS-72, A,B,C, & D)	≥-37" Indicated Level	2(2)	A
Reactor High Water Level	NBI-LIS-101, A & C #3	≤+58.5 Indicated Level	2(2)	A

Change No. 4 4/18/74

COOPER NUCLEAR STATION
TABLE 3.2.B (Page 7)
AUTOMATIC DEPRESSURIZATION SYSTEM (ADS) CIRCUITRY REQUIREMENTS

Instrument	Instrument I.D. No.	Setting Limit	Minimum Number of Operable Components Per Trip System (1)	Action Required When Component Operability Is Not Assured
Drywell High Pressure	PC-PS-100, A,B,C & D	$\leq$ 2 psig	2	A
Reactor Low Water Level	NBI-LIS-83, A & B	$\geq$ +12.5" Indicated $-$ Level	1	B
	NBI-LIS-72, A,B,C & D	$\geq$ -145.5" Indicated Level	2	A
ADS Timer	MS-TDR-K5, A & B	(115<T<125 sec.)	1	B

Change No. 4
4/15/74

COOPER NUCLEAR STATION
TABLE 3.2.C
CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION

Function	Trip Level Setting	Minimum Number Of Operable Instrument Channels/Trip System (5)
APRM Upscale (Flow Bias)	$\leq$(0.66W + 42) (2)	2(1)
APRM Upscale (Startup)	$\leq$12%	2(1)
APRM Downscale (9)	$\geq$ 2.5%	2(1)
APRM Inoperative	(10b)	2(1)
RBM Upscale (Flow Bias)	$\leq$(0.66W + 41) (2)	1
RBM Downscale (9)	$\geq$ 2.5%	1
RBM Inoperative	(10c)	1
IRM Upscale (8)	$\leq$ 108/125 of Full Scale	3(1)
IRM Downscale (3) (8)	$\geq$ 2.5%	3(1)
IRM Detector Not Full In (8)		3(1)
IRM Inoperative (8)	(10a)	3(1)
SRM Upscale (8)	$\leq 1 \times 10^5$ Counts/Second	1(1) (6)
SRM Detector Not Full In (4) (8)	($\geq$ 100 cps)	1(1) (6)
SRM Inoperative (8)	(10a)	1(1) (6)
Flow Bias Comparator	$\leq$ 10% Difference In Recirc. Flows	1
Flow Bias Upscale/Inop.	$\leq$ 110% Recirc. Flow	1
SRM Downscale (8) (7)	$\geq$ 3 Counts/Second	1(1) (6)

Change No. 4
4/18/74

COOPER NUCLEAR STATION
TABLE 3.2.D
RADIATION MONITORING SYSTEMS THAT INITIATE AND/OR ISOLATE SYSTEMS

System	Instrument I.D. No.	Setting Limit	Number of Sensor Channels Provided by Design	Action (1)
Steam Jet Air Ejector Off-Gas System	RMP-RM-150 A & B	(2)	2	A
Reactor Building Isolation and Standby Gas Treatment Initiation	RMP-RM-452 A & B	<100 mr/hr	2	B
Liquid Radwaste Discharge Isolation	RMV-RM-2	(3)	1	C
Main Control Room Ventilation Isolation	(RMV-RM-1)	$4x10^3$CPM	1	D
Mechanical Vacuum Pump Isolation	RMP-RM-251 A-D	6 times normal full power background	4	E

Change No. 4 4/18/74

NOTES FOR TABLE 3.2.D

1. Action required when component operability is not assured.

   A. Refer to Section 2.4.3.a.7 of the Environmental Technical Specifications.

   B. Cease refueling operations, isolate secondary containment and start SBGT.

   C. Refer to Sections 2.4.1.b. of the Environmental Technical Specifications.

   D. Refer to Section 3.11.A.

   E. Refer to Section 3.2.D.5 and the requirements for Primary Containment Isolation on high main steam line radiation. Table 3.2.A.

2. Trip setting to correspond to Specification 2.4.3.a.1 of the Environmental Technical Specifications.

3. Trip setting to correspond to Specification 2.4.1.b.1 of the Environmental Technical Specifications.

COOPER NUCLEAR STATION
TABLE 3.2.E
INSTRUMENTATION THAT MONITORS DRYWELL LEAK DETECTION

Instrument	Instrument I.D. No.	Setting Limit	Minimum Number of Operable Components	Action Required When Component Operability Is Not Assured (2)
Drywell Floor Drain Sump Flow	RW-FT-354	N.A.	1	A
Drywell Equipment Drain Sump Flow	RW-FT-364	N.A.	1	A
Air Sampling System	(PC-O_2A-512, RMV-RM-4 A,B&C)	N.A.	1	A

NOTES FOR TABLE 3.2.E

1. The two (2) flow transmitters, one for the equipment drain sump and the other for the floor drain sump, comprise the basic instrument system.

   The air sampling system is an alternate system to this system.

2. Action

   A. Refer to Specification 3.6.C of this Technical Specification.

Change No. 4
4/18/74

COOPER NUCLEAR STATION
TABLE 3.2.F
PRIMARY CONTAINMENT SURVEILLANCE INSTRUMENTATION

Instrument	Instrument I.D. No.	Range	Minimum Number of Operable Instrument Channels	Action Required When Minimum Condition Not Satisfied (1)
Reactor Water Level	NBI-LI-85A NBI-LI-85B	-150" to +60" -150" to +60"	2	A,B,C
Reactor Pressure	RFC-PI-90A RFC-PI-90B	0 - 1200 psig 0 - 1200 psig	2	A,B,C
Drywell Pressure	PC-PI-512A PC-PR-512B	0 - 80 psia 0 - 80 psia	2	A,B,C
Drywell Temperature	PC-TR-503 PC-TI-505	50 - 170°F 50 - 350°F	2	A,B,C
Suppression Chamber Air Temperature			2	A,B,C
Suppression Chamber Water Temperature	PC-TR-21 PC-TIS-20	0 - 400°F 0 - 400°F	2	A,B,C
Suppression Chamber Water Level	PC-LI-10 PC-LR-11	(-4' to +6') (-4' to +6')	2	A,B,C
Suppression Chamber Pressure	PC-PR-20 PC-PR-512B	0 - 2 psig 0 - 80 psia	2	B,C. A,B,C
Control Rod Position	N.A.	Indicating Lights	1	A,B,C,D
Neutron Monitoring	N.A.	S.R.M., I.R.M., LPRM 0 - 100% power	1	A,B,C,D

Change No. 4
4/18/74

COOPER NUCLEAR STATION
TABLE 3.2.G
INSTRUMENTATION THAT INITIATES RECIRCULATION PUMP TRIP

Instrument	Instrument I.D. No.	Setting Limit	Minimum Number of Operable Components Per Trip System (1)	Action Required When Component Operability Is Not Assured (2)
Reactor High Pressure	NBI-PS-102, A,B,C, & D	≤1120 psig	1	(2)
Reactor Low Water Level	NBI-LIS-57, A & B NBI-LIS-58, A & B	≥-37 in ≥-37 in	1	(2)

NOTES FOR TABLE 3.2.G

1. Whenever the reactor is in the RUN Mode, there shall be one operable trip system for each parameter for each operating recirculation pump, except that one trip system may remain inoperable for up to the allowable repair time (of 30 days). If this cannot be met, the indicated action shall be taken.

2. Reduce power and place the mode selector-switch in a mode other than the RUN Mode.

Change No. 4
4/8/74

COOPER NUCLEAR STATION
TABLE 4.2.B (Page 2)
RHR SYSTEM TEST & CALIBRATION FREQUENCIES

Item	Item I.D. No.	Functional Test Freq.	Calibration Freq.	Instrument Check
Instrumentation				
1. Drywell High Pressure	PC-PS-101, A,B,C & D	Once/Month (1)	Once/3 Months	None
2. Reactor Low Water Level	NBI-LIS-72, A,B,C & D, #4	Once/Month (1)	Once/3 Months	Once/Day
3. Reactor Vessel Shroud Level	NBI-LITS-73, A & B #1	Once/Month (1)	Once/3 Months	Once/Day
4. Reactor Low Pressure	RR-PS-128 A & B	Once/Month (1)	Once/3 Months	None
5. Reactor Low Pressure	NBI-PS-52 A & C NBI-PIS-52 B & D	Once/Month (1)	Once/3 Months	None
6. Reactor Low Pressure	NBI-PS-50, A & B	Once/Month (1)	Once/3 Months	None
7. Reactor Low Pressure	NBI-PS-49, A & B	Once/Month (1)	Once/3 Months	None
8. Drywell Press.-Containment Spray	PC-PS-119, A,B,C & D	Once/Month (1)	Once/3 Months	None
9. Riser Differential Pressure	RR-dPIS-129, A,B,C & D	Once/Month (1)	Once/3 Months	None
10. Recirc. Pump Diff. Press.	RR-dPIS-136, A & B	Once/Month (1)	Once/3 Months	None
11. Recirc. Pump Diff. Press.	RR-dPIS-137, A & B	Once/Month (1)	Once/3 Months	None
12. Recirc. Pump Diff. Press.	RR-dPIS-138, A & B	Once/Month (1)	Once/3 Months	None
13. Recirc. Pump Diff. Press.	RR-dPIS-139, A & B	Once/Month (1)	Once/3 Months	None
14. RHR Pump Discharge Press.	RHR-PS-120, A,B,C & D	Once/Month (1)	Once/3 Months	None
15. RHR Pump Discharge Press.	RHR-PS-105, A,B,C & D	Once/Month (1)	Once/3 Months	None
16. RHR Pump Low Flow Switch	RHR-dPIS-125 A & B	Once/Month (1)	Once/3 Months	None
17. Break Detection Time Delay	RHR-TDR-K28, A & B	Once/Month (1)	Once/Oper. Cycle	None
18. Break Detection Time Delay	RHR-TDR-K40, A & B	Once/Month (1)	Once/Oper. Cycle	None
19. Break Detection Time Delay	RHR-TDR-K34, A & B	Once/Month (1)	Once/Oper. Cycle	None
20. Break Detection Time Delay	RHR-TDR-K81, A & B	Once/Month (1)	Once/Oper. Cycle	None
21. Break Detection Time Delay	RHR-TDR-K86, A & B	Once/Month (1)	Once/Oper. Cycle	None
22. Break Detection Time Delay	RHR-TDR-K45, A & B	Once/Month (1)	Once/Oper. Cycle	None
23. RHR Pump Start Time Delay	RHR-TDR-K70, A & B	Once/Month (1)	Once/Oper. Cycle	None
24. RHR Pump Start Time Delay	RHR-TDR-K75, A & B	Once/Month (1)	Once/Oper. Cycle	None
25. RHR Heat Exchanger Bypass T.D.	RHR-TDR-K93, A & B	Once/Month (1)	Once/Oper. Cycle	None
26. RHR Cross Tie Valve Position	RHR-LMS-2	Once/Month (1)	N.A.	
27. Low Voltage Relays	27 X 3/1A	(7)		None
28. Low Voltage Relays	27 X 3/1B	(7)		None
29. Low Voltage Relays	27 X 2/1F, 27 X 2/1G	(7)		None
30. Low Voltage Relays	27 X 1/1F, 27 X (1)1G	(7)		None
31. Pump Disch. Line Press. Low	CM-PS-266	Once/3 Months	Once/3 Months	None

Change No. 4 4/8/74

COOPER NUCLEAR STATION
TABLE 4.2.B (Page 4)
HPCI TEST & CALIBRATION FREQUENCIES

Item	Item I.D. No.	Functional Test Freq.	Calibration Freq.	Instrument Check
1. Reactor Low Water Level	NBI-LIS-72, A,B,C, & D, #3	Once/Month (1)	Once/3 Months	Once/Day
2. Reactor High Water Level	NBI-LIS-101, B & D #3	Once/Month (1)	Once/3 Months	Once/Day
3. High Drywell Pressure	14A - K5 A & B	(7)	(7)	None
	14A - K6 A & B	(7)	(7)	None
4. HPCI Turbine High Exhaust Press.	HPCI-PS-97 A & B	Once/Month (1)	Once/3 Months	None
5. HPCI Pump Low Suction Press.	HPCI-PS-84-1	Once/Month (1)	Once/3 Months	None
6. HPCI Pump Low Discharge Flow	HPCI-FS-78	Once/Month (1)	Once/3 Months	None
7. HPCI Low Steam Supply Press.	HPCI-PS-68 A,B,C, & D	Once/Month (1)	Once/3 Months	None
8. HPCI Steam Line High ΔP	HPCI-dPIS-76	Once/Month (1)	Once/3 Months	None
	HPCI-dPIS-77	Once/Month (1)	Once/3 Months	None
9. HPCI Steam Line Space High Temp.	HPCI-TS-101, A,B,C, & D 102, 103, 104, HPCI-TS-125, 126, 127, 128 RHR-TS-150,151,152,153,154, 155,156,157,158,159,160,161	Once/Month (1)	Once/Oper. Cycle	None
10. Emergency Cond. Stg. Tk. Low Level	HPCI-LS-74 A & B	Once/Month (1)	Once/3 Months	None
11. Suppression Chamber High Water Level	HPCI-LS-75 A & B	Once/Month (1)	Once/3 Months	None
12. HPCI Gland Seal Cond. Hotwell Level	HPCI-LS-91 A & B	Once/Month (1)	Once/3 Months	None
13. HPCI Control Oil Pressure Low	HPCI-LS-356 B	Once/Month (1)	Once/3 Months	None
	HPCI-LS-356 A	Once/Month (1)	Once/3 Months	None
	HPCI-PS-2787-H	Once/Month (1)	Once/3 Months	None
	HPCI-PS-2787-L	Once/Month (1)	Once/3 Months	None
14. Turbine Condition Supr. Alarm Actuation Timer	HPCI-TDR-K14	Once/Month (1)	Once/Oper. Cycle	None
15. Pump Disch. Line Low Press.	CM-PS-268	Once/3 Months	Once/3 Months	None
16. HPCI Turbine Stop Valve Mon.	HPCI-LMS-4	Once/Month	N.A.	None
17. Sup. Chamber HPCI Suction Vlv.	HPCI-LMS-2	Once/Month	N.A.	None
Logic (1)(6)				
1. Logic Bus Power Monitor		Once/6 Months	N.A.	
2. HPCI Initiation		Once/6 Months	N.A.	
3. HPCI Turbine Trip		Once/6 Months	N.A.	

Change No. 4 4/8/74

COOPER NUCLEAR STATION
TABLE 4.2.D
MINIMUM TEST AND CALIBRATION FREQUENCIES FOR RADIATION MONITORING SYSTEMS

System	Instrument I.D. No.	Functional Test Freq.	Calibration Freq.	Instrument Check
Instrument Channels				
Steam Jet Air Ejector Off-Gas System	RMP-RM-150 A & B	Once/Month (1)	Once/3 Months	Once/Day
Reactor Building Isolation and Standby Gas Treatment Initiation	RMP-RM-452 A & B	Once/Month (1)	Once/3 Months	Once/Day
Liquid Radwaste Discharge Isolation	(RMV-RM-2)	Once/Month (1)	Once/3 Months	Once/Day when discharging
Main Control Room Ventilation Isolation	RMV-RM-1	Once/Month (1)	Once/3 Months	Once/Day
Mechanical Vacuum Pump Isolation	RMP-RM-251, A-D		See Tables 4.1.1 & 4.1.2	
Logic Systems				
SJAE Off-Gas Isolation		Once/Year		
Standby Gas Treatment Initiation		Once/6 Months		
Reactor Building Isolation		Once/6 Months		
Liquid Radwaste Disch. Isolation		Once/6 Months		
Main Control Room Vent Isolation		Once/6 Months		
Mechanical Vacuum Pump Isolation		Once/Operating Cycle		

Change No. 4 4/24/74

COOPER NUCLEAR STATION
TABLE 4.2.E
MINIMUM TEST AND CALIBRATION FREQUENCY FOR DRYWELL LEAK DETECTION

Item	Item I.D. No.	Function Test Freq.	Calibration Freq.	Instrument Check
Instrument Channel				
1. Equipment Drain Sump Flow	RW-FT-364	Once/Month (1)	Once/3 Months	Once/Day
2. Floor Drain Sump Flow	RW-FT-354	Once/Month (1)	Once/3 Months	Once/Day
3. Air Sampling System	PC-O_2A-512 RMV-RM-4A, B, & C	Once/Month (1)	Once/3 Months	Once/Day

Change No. 4
4/18/74

COOPER NUCLEAR STATION
TABLE 4.2.F
PRIMARY CONTAINMENT SURVEILLANCE INSTRUMENTATION
TEST AND CALIBRATION FREQUENCIES

Instrument	Instrument I.D. No.	Calibration Frequency	Instrument Check
Reactor Water Level	NBI-LI-85A	Once/6 Months	Each Shift
	NBI-LI-85B	Once/6 Months	Each Shift
Reactor Pressure	RFC-PI-90A	Once/6 Months	Each Shift
	RFC-PI-90B	Once/6 Months	Each Shift
Drywell Pressure	PC-PI-512A	Once/6 Months	Each Shift
	PC-PR-512B	Once/6 Months	
Drywell Temperature	PC-TR-503	Once/6 Months	Each Shift
	PC-TI-505	Once/6 Months	Each Shift
Suppression Chamber Air Temperature		~~Once/6 Months~~	~~Each Shift~~
		Once/6 Months	Each Shift
Suppression Chamber Water Temperature	PC-TR-21	Once/6 Months	Each Shift
	PC-TIS-20	Once/6 Months	Each Shift
Suppression Chamber Water Level	PC-LI-10	Once/6 Months	Each Shift
	PC-LR-11	Once/6 Months	Each Shift
Suppression Chamber Pressure	PC-PR-20	Once/6 Months	Each Shift
	PC-PR-512B	Once/6 Months	Each Shift
Control Rod Position	N.A.	N.A.	Each Shift
Neutron Monitoring (APRM)	N.A.	Once/Week	Each Shift

Change No. 4
4/18/74

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.7.B (cont'd.)	4.7.B (cont'd.)
required for operation of such trains shall be operable at all times when secondary containment integrity is required.	and charcoal filters is less than 10 inches of water at 1780 cfm and
2. From and after the date that one train of the standby gas treatment system is made or found to be inoperable for any reason, continued reactor operation or fuel handling is permissible only during the succeeding seven days unless such train is sooner made operable, provided that during such seven days all active components of the other standby gas treatment train shall be operable.	b. At least once per operating cycle demonstrate that the inlet heaters on each train are capable of an output of at least 7.8 Kw.
	c. Whenever work is performed that could adversely affect the filter system efficiency and at intervals not to exceed six months it shall be demonstrated that:
3. If Specifications 3.7.B.1 and 3.7.B.2 are not met, the reactor shall be placed in the cold shutdown condition and fuel handling operations shall be prohibited.	(1) The removal efficiency of the particulate filters is not less than 99% for a polydispersed aerosol of dioctylphthalate (DOP) droplets having a light scattering mean diameter of about 0.7 micron.
	(2) The removal efficiency of each of the charcoal filters is not less than 99% for iodine.
4. Both trains are required to start simultaneously in the automatic mode, unless one train is out of service as allowed by Specification 3.7.B.2 above.	The time interval during the refueling outage shall not be included in the six month interval.
	d. At least once each year, removable charcoal cartridges shall be removed and absorption shall be demonstrated.
	e. At least once per operating cycle automatic initiation of each branch of the standby gas treatment system shall be demonstrated.
	2. When one train of the standby gas treatment system becomes inoperable, the operable train shall be demonstrated to be operable immediately and daily thereafter.
C. Secondary Containment	C. Secondary Containment
1. Secondary containment integrity shall be maintained during all modes of plant operation except when all of the following conditions are met.	1. Secondary containment surveillance shall be performed as indicated below:

3.7.B & 3.7.C BASES (cont'd.)

tiates the availability of the operable train and results in no added risk; thus, reactor operation or refueling operation can continue. If neither train is operable, the plant is brought to a condition where the system is not required.

While only a small amount of particulates is released from the pressure suppression chamber system as a result of the loss-of-coolant accident, high efficiency particulate filters before and after the charcoal filters are specified to minimize potential particulate release to the environment and to prevent clogging of iodine filters. The high-efficiency filters have an efficiency greater than 99% for particulate matter larger than 0.3 micron. The minimum iodine removal efficiency is 99%. Filter banks will be replaced whenever significant changes in filter efficiency occur. Tests of impregnated charcoal identical to that used in the filters indicate that shelf life up to five years leads to only minor decreases in methyl iodine removal efficiency.

The efficiency of 99% of the charcoal and particulate filters is sufficient to prevent exceeding 10CFR100 guidelines for the accidents analyzed. The analysis of the loss-of-coolant accident assumed a charcoal filter efficiency of 90%, and TLD 14844 fission product source term. Hence, requiring 99% efficiency for both the charcoal and particulate filters provides adequate margin. A(7.8)kw heater maintains relative humidity below 70% in order to assure the efficient removal of methyl iodine on the impregnated charcoal filters.

4.7.B & 4.7.C BASES

Standby Gas Treatment System and Secondary Containment

Initiating reactor building isolation and operation of the standby gas treatment system to maintain at least a 1/4 inch of water vacuum within the secondary containment provides an adequate test of the operation of the reactor building isolation valves, leak tightness of the reactor building and performance of the standby gas treatment system. Functionally testing the initiating sensors and associated trip channels demonstrates the capability for automatic actuation. Performing these tests prior to refueling will demonstrate secondary containment capability prior to the time the primary containment is opened for refueling. Periodic testing gives sufficient confidence of reactor building integrity and standby gas treatment system performance capability.

The test frequencies are adequate to detect equipment deterioration prior to significant defects, but the tests are not frequent enough to load the filters, thus reducing their reserve capacity too quickly. That the testing frequency is adequate to detect deterioration was demonstrated by the tests which showed no loss of filter efficiency after 2 years of operation in the rugged shipboard environment on the NS Savannah (ORNL 3726). Pressure drop tests across filter sections are performed to detect gross plugging or leak paths through