COOPER NUCLEAR STATION

BROWNVILLE, NEBRASKA

ANNUAL OPERATING REPORT

JANUARY 1, 1979 THROUGH DECEMBER 31, 1979

USNRC DOCKET 50-298

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I. PERFORMANCE CHARACTERISTICS AND TESTS

FUEL PERFORMANCE

Off-gas activity in the January 1 through April 7, 1979 operational period showed no increases indicative of additional fuel failures beyond those reported in the Cooper Nuclear Station (CNS) Annual Operating Report for 1978. The off-gas activity level continued to decrease from January 1 to April 7, 1979 with the release rates being well within the limits specified in the CNS Technical Specifications.

During the period from April 7 through May 6, 1979, the reactor was shut down and the reactor vessel disassembled for the scheduled refueling and maintenance outage. The core was rearranged as per the fuel loading plan developed by General Electric for Cycle V; 164 spent fuel assemblies were removed and replaced with 112 new fuel assemblies and 52 used fuel assemblies. These 52 used fuel assemblies were initial cycle fuel assemblies removed from the reactor during the Cycle II refueling. In concurrence with General Electric, sipping for leaking fuel assemblies was not warranted due to the low off gas activity. After the reactor core loading was completed, the fuel loading was verified as correct in accordance with the General Electric loading plan for Cycle V and the results recorded on video tape.

On May 6, 1979, following completion of the NRC review and approval of the Cycle V licensing submittal, the reactor was started up and the startup physics test program was initiated. One hundred percent thermal power was initially achieved for Cycle V on June 12, 1979. From May 6 through December 31, 1979, a gradual increase in off-gas activity was monitored. This activity, however, was approximately equivalent to the off-gas activity at the beginning of 1979 and indicates no significant change in the number or severity of leaking fuel assemblies in the reactor.

Comparisons of the actual control rod density during the period January 1 to December 31, 1979, to the control rod density predicted by computer programs at various core average exposures indicated reactivity anomalies less than 1% $\Delta K/K$.

The startup physics test program was completed on June 19, 1979. Notification of test completion was submitted to the NRC on June 21, 1979.

VESSEL TRANSIENT CONDITION EVENTS

No operational transients more severe than the transients evaluated in fatigue usage calculations as described in CNS Calculation Book 8.40-21 are identified during this report period.

Reactor Coolant Pressure Boundary thermal and pressure cycles are summarized as follows:

NOTE: All transients started from approximately rated pressure and temperature.

	DATE	MINIMUM TEMPERATURE OF THE MODERATOR (°F)
1	5-6-79	120
2	5-9-79	337
3	5-24-79	208
4	5-26-79	180
5	8-10-79	160
6	9-14-79	118
7	11-20-79	100

There were seven (7) thermal-pressure cycles on the Reactor Coolant Pressure Boundary, six (6) were full cycle (from rated pressure and temperature to vessel vented), during the other cycle the vessel temperature did not go below 337°F as indicated above.

VESSEL TRANSIENT CONDITION EVENTS
(DESIGN FATIGUE USAGE)

	REPORT PERIOD EVENTS	TOTAL EVENTS TO DATE	DESIGN EVENTS
Normal Startup (100°F/hr)	7	93	120
50% Power Operation (reduction to)	14	57	14,600
Rod Worth Tests	0	3	400
Loss FW Heaters			
25% Turbine Trip	0	6	10
FW Heater Bypass	0	1	70
Loss FW Pumps (Scrams)	1	5	10
Turbine Generator Trip	1	17	40
Reactor Overpressure	0	0	1
Safety Valve Blowdown	0	0	2
All Other Scrams	5	43	147
Improper Start Cold RR Loop	0	0	5
Sudden Start Cold RR Loop	0	0	5
Normal Shutdown	4	32	118
Hydrostatic Pressure Tests (1563 psig)	0	1	3
Hydrostatic Pressure Tests (1250 psig)	1 @ 1025	8 @ 1025	130

II. FACILITY CHANGES REPORTABLE UNDER 10CFR50.59

REPORTABLE MINOR DESIGN CHANGES (MDC) COMPLETED IN 1979

MDC 77-37

Component: RHR System - Loops A and B

Description: This MDC authorized installation of isolation valves in the steam lines to the RHR heat exchangers. These valves permit isolation of the heat exchangers for maintenance. Operation of the RHR System is not affected by this change.

MDC 78-42

Component: Motor Control Center K (MCC-K)

Description: This MDC provided for the addition of the plant security system load to the MCC-K electrical distribution panel. The change puts the security system electrical load on a protected power supply. The MCC-K panel has sufficient capacity to accommodate the additional load and the security system load is similar to other loads on the panel.

MDC 78-62

Component: Feedwater Control System Steam and Level Instruments

Description: This MDC authorized the removal of density compensation from the steam flow and reactor level instruments used to control the feedwater flow (and hence reactor level). This change could not cause reactor level variances larger than the acceptable range of the control system. The new design reduces the complexity of the system, thereby reducing system outages for maintenance and repair.

MDC 77-69

Component: Refueling Platform

Description: This MDC provided for the installation of a load cell with readout on the monorail hoist on the refueling platform. The load cell provides a method for measuring the actual force exerted by the hoist when removing neutron detectors from the core. This component is a backup to the installed limit switches which prevent overload of the hoist.

MDC 78-25

Component: 4160V AC Buses 1F and 1G

Description: This MDC authorized installation of time-delayed undervoltage relays to the 4160V AC buses 1F and 1G. These relays protect the bus loads from prolonged low voltage conditions (less than 3600V AC for greater than 10 seconds) which could affect the operation of electric motors supplied by the buses. These relays are a second level of protection to the undervoltage relays which trip the loads immediately when bus voltage reaches 2900V AC.

MDC 79-37

Component: Control Room Ventilation Radiation Monitor

Description: This MDC provided for the relocation of the radiation sample probe in the control room ventilation system. Although the probe is required to sample moving air, the previous location was not in a moving air stream. Consequently, the effectiveness of the instrument was reduced. The new location for the probe is in a moving air stream. All requirements of the appropriate standards are met.

REPORTABLE CHANGES TO FIRE PROTECTION COMMITTMENTS

In April 1977, Nebraska Public Power District (NPPD) committed to familiarization tours and radiation training for local fire department personnel. This was done to justify a 3 man on-site fire brigade. NPPD has subsequently committed to a 5 man on-site fire brigade to satisfy current NRC requirements. Consequently, training of off-site personnel has been reduced to that necessary to fight fires outside the plant. Since the NRC has agreed that the 5 man fire brigade is adequate and since we have committed to a 5 man fire brigade, the change does not involve an unreviewed safety question. The change does not alter the plant as evaluated in the FSAR nor does it introduce new safety questions. No change in the Technical Specifications is required.

The above summary of a 10CFR50.59 analysis is being reported to document an agreement reached between the Nuclear Regulatory Commission and Nebraska Public Power District during a January 24, 1979 meeting at the NRC Region IV office.

III. PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION 1979

Work and Job Function	Number of Personnel (> 100 mRem)			Total Man-Rem		
	Station Employees	Utility Employees	Contractor & Others	Station Employees	Utility Employees	Contractor & Other
REACTOR OPERATIONS & SURV.						
Maintenance Personnel	---	---	2	---	---	1.096
Operating Personnel	39	---	---	24.234	---	---
Health Physics Personnel	13	---	1	6.111	---	.393
Supervisory Personnel	9	---	1	6.411	---	.116
Engineering Personnel	12	---	2	7.446	---	.426
ROUTINE MAINTENANCE						
Maintenance Personnel	44	---	70	49.427	---	55.999
Operating Personnel	3	---	---	.961	---	---
Health Physics Personnel	8	---	---	2.340	---	---
Supervisory Personnel	2	---	---	.424	---	---
Engineering Personnel	5	---	---	1.441	---	---
SPECIAL MAINTENANCE						
Maintenance Personnel	8	---	27	5.479	---	21.503
Operating Personnel	2	---	---	.330	---	---
Health Physics Personnel	8	---	---	.745	---	---
Supervisory Personnel	---	---	---	---	---	---
Engineering Personnel	2	15	1	.550	6.321	.160
WASTE PROCESSING						
Maintenance Personnel	---	---	---	---	---	---
Operating Personnel	8	---	---	2.375	---	---
Health Physics Personnel	9	---	---	.675	---	---
Supervisory Personnel	1	---	---	.058	---	---
Engineering Personnel	---	---	---	---	---	---
REFUELING						
Maintenance Personnel	---	---	---	---	---	---
Operating Personnel	27	---	---	4.923	---	---
Health Physics Personnel	8	---	---	.132	---	---
Supervisory Personnel	2	---	---	.178	---	---
Engineering Personnel	3	---	---	.562	---	---
INSERVICE INSPECTION						
Maintenance Personnel	---	---	8	---	---	2.263
Operating Personnel	---	---	---	---	---	---
Health Physics Personnel	8	---	---	.711	---	---
Supervisory Personnel	---	---	2	---	---	1.223
Engineering Personnel	1	---	---	.154	---	---
TOTALS						
Maintenance Personnel	44	---	97	54.906	---	80.861
Operating Personnel	39	---	---	32.823	---	---
Health Physics Personnel	13	---	1	10.714	---	.393
Supervisory Personnel	9	---	3	7.071	---	1.339
Engineering Personnel	13	15	3	10.153	6.321	.586
GRAND TOTALS	118	15	104	115.667	6.321	83.179