1 of 1

UNITED STATES
ATOMIC ENERGY COMMISSION
RICHLAND OPERATIONS OFFICE
P. O. BOX 550
RICHLAND, WASHINGTON 99352

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PWM-542

January 30, 1973

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BY APPOINTMENT OF THE BOARD OF SUPERVISORS *PAJ*

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BY CR RECOMMENDED DATE 1/18/98

FNCO DG, Crisher 6/9/23

POWER LEVEL HISTORY OF SINGLE-PASS RICHLAND REACTORS

MEGAWATTS

	<u>B</u>	<u>C</u>	<u>D</u>	<u>DR</u>	<u>F</u>	<u>H</u>	<u>KE</u>	<u>KW</u>	<u>N</u>
Jan. 1945	250		230						
June	250		250		150				
Jan. 1946	*		250		250				
June	*		250		250				
Jan. 1947	*		250		250				
June	*		250		250				
Jan. 1948	*		250		250				
June	*		250		250				
Jan. 1949	275		275		275				
June	275		305		275				
Jan. 1950	275		305		305	275			
June	305		305		305	320			
Jan. 1951	370		335	450	320	480			
June	442		445	526	452	515			
Jan. 1952	525		515	560	555	585			
June	560		585	575	575	605			
Jan. 1953	600	800	600	605	575	675			
June	615	970	675	610	620	700			
Jan. 1954	730	1165	830	610	715	930			
June	915	1425	870	740	845	980			
Jan. 1955	1035	1535	1060	740	970	980			
June	1035	1625	1125	975	1015	1050	1150	1150	
Jan. 1956	1035	1625	1125	1105	1015	1205	2025	2020	
June	1035	1625	1125	1105	1015	1205	2570	2565	
Jan. 1957	1125	1740	1125	1110	1015	1205	2705	2770	
June	1310	1740	1250	1365	1220	1310	2905	2905	
Jan. 1958	1415	1740	1380	1440	1370	1350	3040	3140	
June	1430	1740	1440	1440	1430	1440	3140	3140	
Jan. 1959	1440	1740	1440	1440	1440	1440	3140	3140	
June	1590	1910	1600	1610	1580	1600	3370	3385	

~~Classification~~ cancelled. Change to

by Anthony D.

~~Blowing Staff Eng~~

3y 51131.04

*Reactor shut down

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-2-

January 30, 1973

	<u>B</u>	<u>C</u>	<u>D</u>	<u>DR</u>	<u>F</u>	<u>H</u>	<u>KE</u>	<u>KW</u>	<u>N</u>
Jan. 1960	1640	2000	1710	1710	1735	1770	3700	3710	
June	1730	2080	1765	1835	1825	1890	3800	3840	
Jan. 1961	1845	2090	1810	1835	1835	1900	3855	4000	
June	1895	2180	1945	1925	1935	1955	4085	4115	
Jan. 1962	1895	2275	1945	1925	1935	1955	4215	4160	
June	1940	2310	2005	1925	1935	1955	4400	4400	
Jan. 1963	1940	2310	1975	1925	1935	1955	4400	4400	
June	1940	2310	2005	1925	1935	1955	4400	4400	
Jan. 1964	1940	2310	2005	1925	1935	1955	4400	4400	
June	2090	2310	2055	2015	2015	2110	4400	4400	1000
Jan. 1965	2090	2310	2055		2015	2125	4400	4400	4000
June	2090	2310	2055		2040		4400	4400	4000
Jan. 1966	2090	2370	2105		2040		4400	4400	4000
June	2100	2490	2170				4400	4400	4000
Jan. 1967	2145	2490	2170				4400	4400	4000
June	2210	2500	2170				4400	4400	4000
Jan. 1968	2210	2500					4400	4400	4000
June		2500					4000	4000	4000
Jan. 1969		2500					4000	4000	4000
June							4000	4000	4000
Jan. 1970								4000	4000
June									3875
Jan. 1971									3875
June									3875
Jan. 1972									3875
June									3875
Jan. 1973									3875

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SIGNIFICANT DATES AND FACTS

1. Nameplate power ratings of the production reactors were 250 MW for B, D, DR, and F; 400 MW for H; 650 MW for C; 1850 MW for KE and KW.
2. Initial power increases were achieved by permitting higher outlet water temperatures (1948 to 1951), then by increasing water flow through use of backup steam pump (1951-1957), then by water plant expansion projects (1957 for B, D, DR, F, and H, 1960 for C, and 1962 for KE, KW). Subsequent power increases were obtained by further raising outlet water temperatures.
3. B reactor was shut down from 3/19/46 to 7/2/48 for study and solution of the graphite expansion problem.
4. Enriched uranium fuel (initially 93% U-235, later 0.947% U-235) was used starting in 1952 to provide the reactivity for higher power levels.
5. Fuel design was changed in 1957 from solid cylinders to a tubular shape, as central fuel temperatures in the solid fuel were becoming excessive.
6. ACRS power limits were imposed by AEC in January 1958; 1440 MW at B, D, DR, F, and H; 1740 MW at C; and 3140 MW at KE, KW.
7. ACRS limits raised in January 1959; B, D, DR, F, H - 1900 MW
C - 2100 MW
KE, KW - 4000 MW
8. ACRS limits increased by 10% in January 1961; B, D, DR, F, H - 2090 MW
C - 2310 MW
KE, KW - 4400 MW
9. Reactors administratively limited in December 1963 to the maximum power previously achieved at each reactor:
B - 1940 MW
C - 2310 MW
D - 2005 MW
DR - 1925 MW
F - 1935 MW
H - 1955 MW
KE, KW - 4400 MW

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10. Administrative power at B, D, DR, F, and H was raised in February 1964 to 2090 MW.
11. In September 1968 the power level of the KE and KW reactors was administratively reduced to 4000 MW because of a determination that the inlet water piping was potentially subject to brittle fracture.
12. A demonstration of higher power feasibility at N reactor was performed in June 1967 by operating at 4800 MW for 23 hours.
13. The power level at N reactor was reduced slightly after June 1970 because of problems with the temperature instrumentation. The power reduction was continued after these problems were solved for combined reactor-generating plant efficiency reasons.
14. Startup and shutdown dates:

<u>Reactor</u>	<u>Startup</u>	<u>Shutdown</u>
B	9/26/44	3/19/46
	7/2/48	2/12/68
C	11/18/52	4/25/69
D	12/17/44	6/26/67
DR	10/3/50	12/30/64
F	2/25/45	6/25/65
H	10/29/49	4/21/65
KE	4/17/53	1/28/71
KW	3/11/55	2/1/70
N	12/31/63	Still operating

R. L. Plum

R. L. Plum
Production Operations Branch

PO:RLP

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