APPENDIX - E

OUTAGE RATE RECORDS IN JAPAN

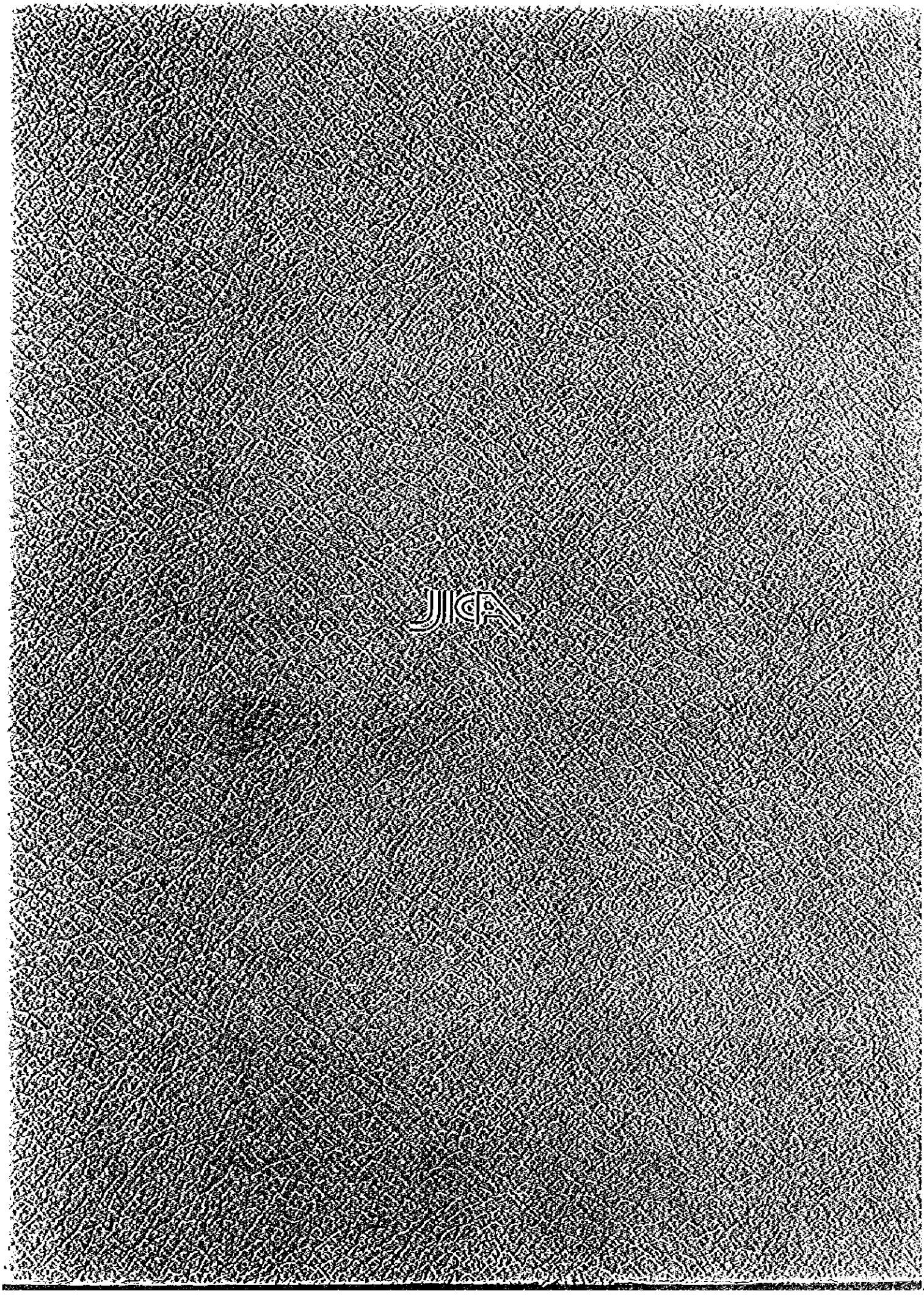
Outage Rate in Japan

The forced outage rate in Japanese thermal power plants are tabulated in the following table. The calculation of reserve capacity was made with this table as the reference.

Forced Outage Rate of Thermal Power Plant in Japan (1955 - 1977)

第III－21表　昭和30年度～52年度の火力停止率(平日)の推移

	Class	Output		Unit	Result of Study (1955 - 1973)																										Result of Study (1974 - 1977)					for 23 years
					1 回 目 1st Period				2 回 目 2nd Period				3 回 目 3rd Period				4 回 目 4th Period				5 回 目 5 th Period				6 回 目 6th Period				for 19 years	7 回 目 7th Period					
					1955	1956	1957	3カ年計	1958	1959	1960	for 3 years	1961	1962	1963	for 3 years	1964	1965	1966	1967	for 4 years	1968	1969	1970	for 3 years	1971	1972	1973	for 3 years		1974	1975	1976	1977	for 4 years	
Opreating days (A)	(I)	75MW 1 125MW	運転日数(A)	Days	7,371.5	9,763.0	11,955.0	29,089.5	15,049.0	19,881.5	19,429.0	47,529.5	14,716.0	16,106.0	14,703.0	45,525.0	12,561.5	11,713.5	11,117.5	12,618.5	47,491.0	13,131.5	14,184.5	13,992.5	41,308.5	8,687.0	7,844.0	8,124.5	24,655.5	229,548.0	6,720.5	6,084.5	6,842.5	7,129.5	26,760.0	282,300.0
Forced outage days (B)			計画外停止日数(B)	Days	406.0	534.5	520.0	1,573.5	483.5	466.5	433.0	1,473.0	275.5	292.5	271.5	839.5	280.5	266.5	306.5	186.5	999.0	244.5	176.5	140.5	561.5	141.0	216.0	103.5	460.5	5,907.0	112.5	112.5	135.5	140.5	501.0	6,408.0
Forced outage rate (A)/((A)+(B))			停止率 (B)/((A)+(B))	(%)	5.4	5.2	4.5	5.2	3.6	3.4	2.3	3.0	1.8	1.8	2.4	1.9	1.9	2.3	2.7	1.5	2.1	1.8	1.2	1.0	1.3	1.6	2.7	1.2	1.8	2.5	1.6	1.8	1.9	1.9	1.8	2.4
Opreating days (A)	(II)	156MW 1 345MW	運転日数(A)	Days	-	-	-	-	55.0	1,466.5	2,199.5	4,769.0	4,178.0	4,177.5	9,619.0	19,999.5	11,926.5	13,168.0	15,243.5	17,495.0	57,798.0	19,121.0	21,229.5	22,970.0	63,369.5	22,479.5	22,504.0	22,957.5	68,971.0	214,722.0	19,513.5	18,126.5	19,195.0	20,256.0	77,091.5	291,976.4
Forced outage days (B)			計画外停止日数(B)	Days	-	-	-	-	1.0	89.5	98.0	188.4	169.0	230.5	224.5	623.0	262.5	291.0	364.5	349.0	1,466.0	281.0	367.5	379.0	967.5	392.5	638.0	576.5	1,607.0	4,822.0	314.0	371.5	339.0	186.0	1,179.5	6,011.5
Forced outage rate (A)/((A)+(B))			停止率 (B)/((A)+(B))	(%)	-	-	-	-	1.8	6.0	2.9	3.8	3.9	3.6	2.3	3.0	3.0	2.7	2.3	2.0	2.4	1.4	1.7	1.4	1.5	1.8	2.8	2.5	2.3	2.2	1.6	2.0	1.6	0.9	1.5	2.0
Opreating days (A)	(III)	375MW 1 1,000MW	運転日数(A)	Days	-	-	-	-	-	-	-	-	-	-	-	-	697.5	1,207.5	2,003.5	2,490.5	6,909.0	3,998.5	4,322.5	5,959.5	14,280.5	7,653.0	11,439.5	13,997.5	33,284.0	54,460.5	15,723.0	17,218.5	17,801.0	19,297.0	69,039.5	124,300.0
Forced outage days (B)			計画外停止日数(B)	Days	-	-	-	-	-	-	-	-	-	-	-	-	46.5	83.5	92.5	77.5	299.0	99.5	118.5	177.5	341.5	335.0	341.5	474.5	1,141.0	1,781.5	429.0	379.5	296.0	364.0	1,468.5	3,249.0
Forced outage rate (A)/((A)+(B))			停止率 (B)/((A)+(B))	(%)	-	-	-	-	-	-	-	-	-	-	-	-	6.4	6.9	4.6	3.0	4.3	2.5	2.7	2.9	2.3	4.3	3.1	3.3	3.3	3.1	2.6	2.2	1.7	1.9	2.0	2.5
Opreating days (A)	total	75MW 1 1,000MW	運転日数(A)	Days	7,371.5	9,763.0	11,955.0	29,089.5	15,104.0	17,299.0	21,621.5	53,961.5	18,894.0	22,298.5	24,322.0	65,743.5	25,185.5	25,219.0	28,361.5	32,599.0	112,365.0	36,261.0	39,735.5	42,947.0	118,823.5	40,191.5	41,786.5	45,104.5	127,082.5	504,777.5	41,966.5	41,414.5	43,636.5	46,678.5	173,448.0	678,409.4
Forced outage days (B)			計画外停止日数(B)	Days	406.0	534.5	520.0	1,573.5	484.5	465.0	428.0	1,477.5	444.5	499.0	496.0	1,439.5	447.5	720.0	777.5	615.0	2,760.0	621.0	662.5	697.0	1,895.5	838.5	1,215.5	1,154.5	3,208.5	12,504.5	851.5	863.5	739.5	680.5	3,135.0	15,671.5
Forced outage rate (A)/((A)+(B))			停止率 (B)/((A)+(B))	(%)	5.4	5.2	4.5	5.2	3.6	3.6	2.4	3.1	2.8	2.1	2.4	2.3	2.5	2.7	2.5	1.8	2.3	1.7	1.6	1.6	1.5	2.0	2.8	2.5	2.5	2.4	2.0	2.0	1.7	1.4	1.8	2.2

Source:Explanation of Methods of Electric Power Demand Forecast and Electric Power Supply Program Employed in the Japan Electric Power Survey Report, November, 1982, Japan Electric Power Research Committee

* Adopted Forced Outage Rate for Decision of Unit Capacity of This Project