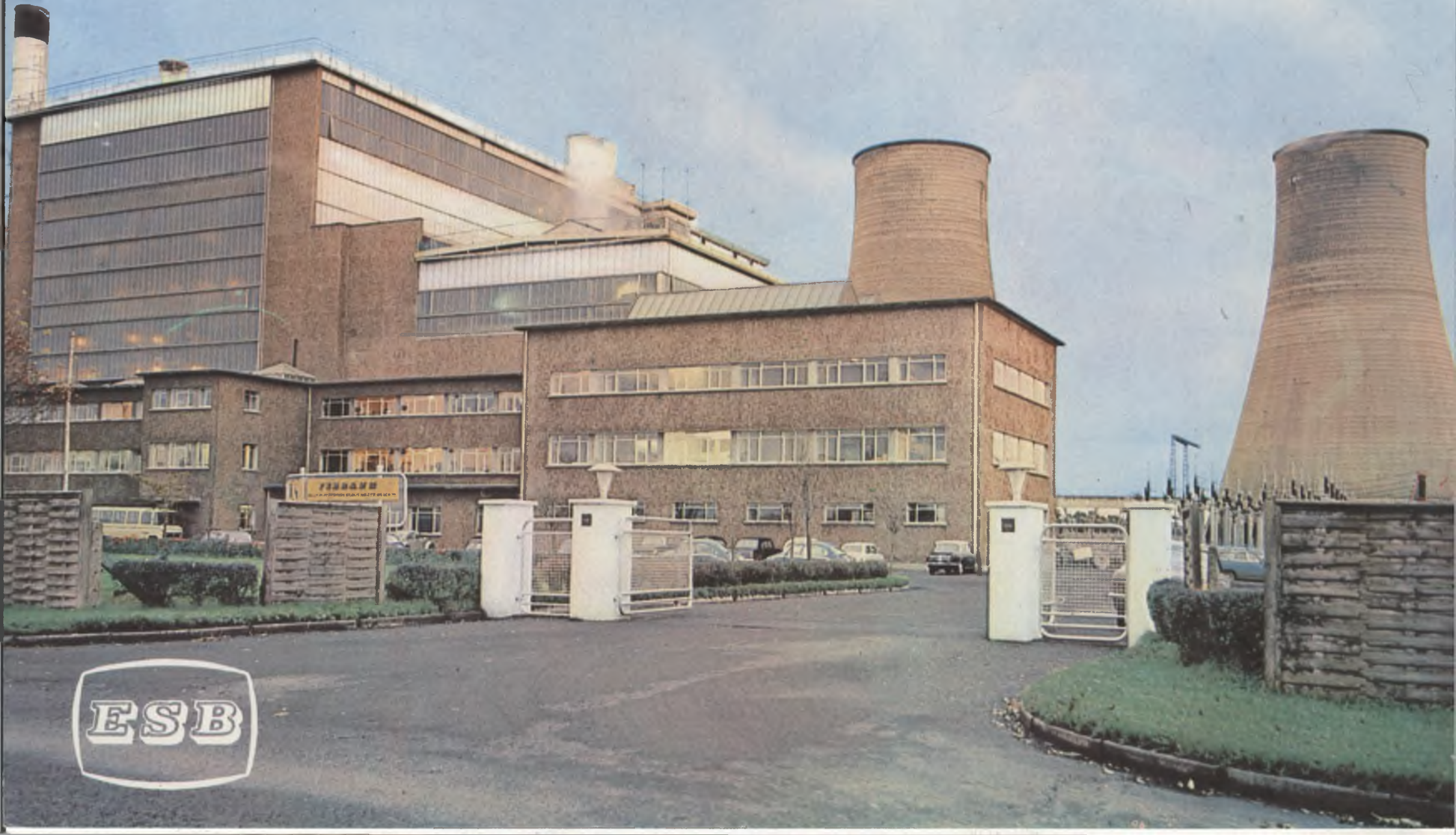


# Ferbane Generating Station

COUNTY OFFALY



# Ferbane Generating Station

Construction of the station commenced in May, 1953 and the first development of 60,000 kilowatts was commissioned in 1957. The second stage of development of a further 30,000 kilowatts was commenced in June, 1961 and was commissioned in January 1964. This brought the total capacity of the Station to 90,000 kilowatts, capable of producing about 400 million units of electricity a year.

Fuel – native milled peat and foidins; 2,000 tons of Irish peat a day. The peat at a moisture content of about 55% is delivered in wagons each holding about 5 tons. Two tipplers discharge the 400 wagons a day onto conveyor belts which lift the fuel up into the bunkers. The fuel discharges by gravity into the fuel scraper conveyors and thence into the pulverising mills. Hot furnace gas also mixes with the fuel at entry to the mills and the finely pulverised fuel now at about 20% moisture is blown into the furnace.

## Particulars of Generation and Plant

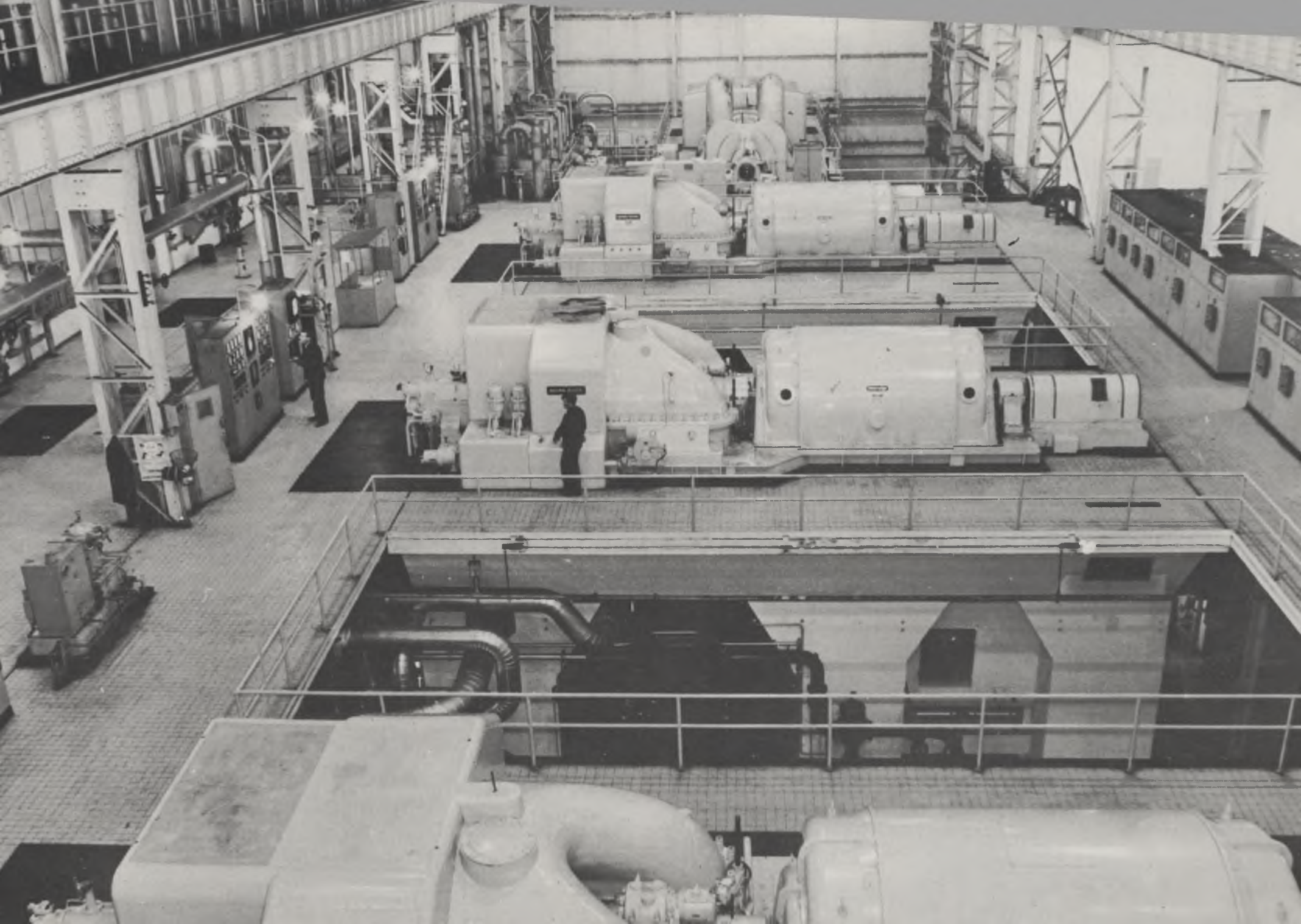
About 2 million units of electricity are produced daily when the four units are on full load. Each unit consists of a boiler, a turbine, a generator and a transformer. Boilers 1, 2 and 3 (first development) each produce 100 tons steam per hour, at a pressure of 30 Kg/cm<sup>2</sup> and temperature 440°C to drive Brown Boveri 20 mW turbines and directly coupled generators at 3,000 revs per minute.

THE No. 4 UNIT. (2nd development) has a 130 ton/hr. boiler giving steam at a pressure of 63 Kg/cm<sup>2</sup> and at a temperature of 510°C which drives a 30 mW Parsons Turbine and directly coupled Generator at 3,000 revs per minute. The electricity is generated at 10,000 volts and is transformed to 110,000 volts for transmission into the national grid.

There are two cooling water towers, each 80 meters high, through which 4 million gallons of water per hour is being continuously circulated and cooled.

## PRINCIPAL TECHNICAL PARTICULARS

<b>Fuel</b>		
Milled peat		55 per cent moisture
Size		Dust, and up to ½ inch
Nett calorific value at 55% moisture		3,370 B.t.u./lb
Ash fusion point		1,100°C to 1,150°C
<hr/>		
<b>Boilers</b>		
<i>Number</i>	<b>3</b>	<b>1</b>
Maker No. 1	Vereinigte Kesselwerke	Babcockwerke
"   No. 2	Babcockwerke	
"   No. 3	Walter & Cie	
Firing	Pulverised milled peat	Pulverised milled peat
Economic rating	176,000 lb./hr.	229,000 lb./hr.
M.C.R.	220,000 lb./hr.	286,000 lb./hr.
Steam pressure	30 Kg./cm./	63 Kg./cm./
Steam temperature	440°C	515°C
<hr/>		
<b>Turbo Alternators</b>		
<i>Number</i>	<b>3</b>	<b>1</b>
Maker	Brown-Boveri	Parsons
Type	Impulse-reaction	Impulse-reaction
Economic rating	18,000 kW	30,000 kW
M.C.R.	25,000 kW	30,000 kW
Speed	3,000 r.p.m.	3,000 r.p.m.
Steam pressure	29 Kg./cm./	62 Kg./cm./
Steam temperature	430°C	510°C
Voltage	10,500	10,500
<hr/>		
<b>Cooling Towers</b>		
<i>Number</i>	<b>2</b>	
Type	R-C hyperbolic	
Height	266 ft.	
Internal diameter at base	195 ft.	
Water quantity	1,900,000 gallons per hour	
Temperature range	82°F to 70°F (at 75% relative humidity)	
<hr/>		
<b>Electrical Equipment</b>		
Main transformers		A.C.E.C.
Main switchgear and control gear		Siemens Schuckert



# One of our many Stations

Of the 28 generating stations 9 are hydro, 4 operate on milled peat, 6 on sod peat, 1 on native coal, 6 on oil, 1 on sod/milled peat and 1 on coal or oil.

<b>HYDRO STATIONS</b>		<i>Capacity Mw.</i>	<b>STEAM STATIONS</b>		<i>Capacity Mw.</i>
River Shannon:	Ardnacrusha	85	Portarlinton (Co. Laois)	<i>sod peat</i>	38
River Liffey:	Pollaphuca	30	Tarbert Island (Co. Kerry)	<i>oil</i>	120
	Golden Falls	4			
	Leixlip	4			
River Erne:	Cathaleen's Fall	45	Allenwood (Co. Kildare)	<i>sod peat</i>	40
	Cliff	20			
River Lee:	Inniscarra	19	Ferbane (Co. Offaly)	<i>milled peat</i>	90
	Carrigadrohid	8			
River Clady:	Clady	4	Lanesborough (Co. Longford)	<i>sod and milled peat</i>	60
		219	Rhode (Co. Offaly)	<i>milled peat</i>	80
<b>UNDER CONSTRUCTION</b>			Bellacorick (Co. Mayo)	<i>milled peat</i>	40
Pumped Storage			Shannonbridge (Co. Offaly)	<i>milled peat</i>	40
Turlough Hill, Co. Wicklow	292		Arigna (Co. Roscommon)	<i>native coal</i>	15
<b>STEAM STATIONS</b>	<i>Capacity Mw.</i>		Miltown-Malbay (Co. Clare)	<i>sod peat</i>	5
Pigeon House "A" (Dublin City)	90		Screeb (Co. Galway)	<i>sod peat</i>	5
<i>oil</i>					
North Wall (Dublin City)	48		Cahirciveen (Co. Kerry)	<i>sod peat</i>	5
<i>oil</i>					
Ringsend (Dublin City)	270		Gweedore (Co. Donegal)	<i>sod peat</i>	5
<i>coal/oil</i>					
Marina (Cork City)	120				
<i>oil</i>					
Pigeon House "B"	268				
<i>oil</i>					
Great Island (Co. Wexford)	120				
<i>oil</i>					
			<b>Total Capacity,</b>		
			<b>Hydro and Steam</b>	<b>1,678 Mw.</b>	

Electrical Control Room

