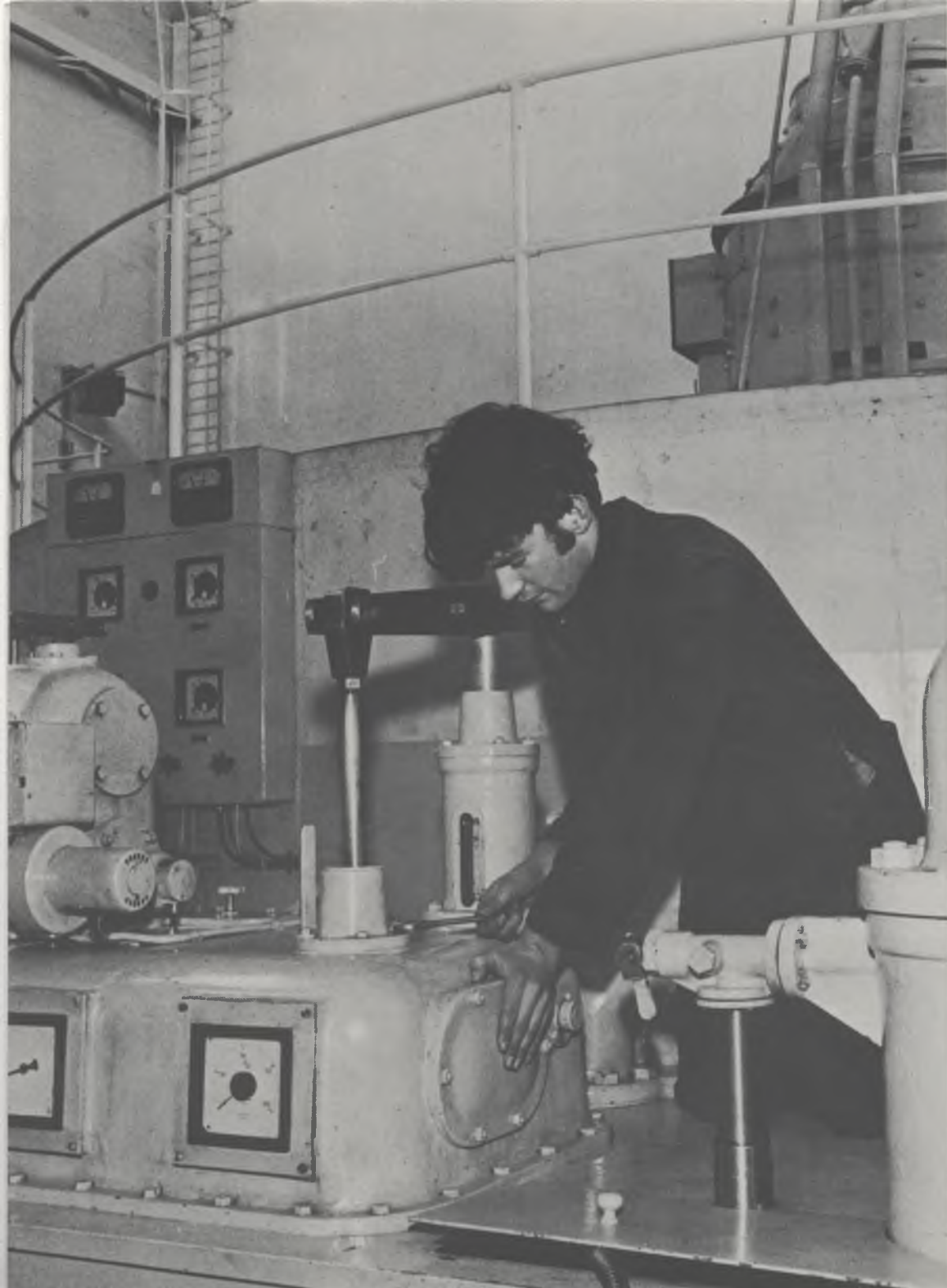


River Lee Generating Stations

COUNTY CORK





River Lee Hydro-Electric Development

The hydro-electric development of the River Lee between Macroom and Cork is in two steps and comprises dams and power stations at Carrigadrohid and Inniscarra. The development necessitated the construction of eleven miles of public roads and three main road bridges. The turbo-generator at Carrigadrohid is rated at 8,000kW; two machines at Inniscarra are rated at 15,000 and 4,000kW. The 4,000kW set was installed at Inniscarra to give sufficient flow down the river to meet the requirements of a water supply plant at Cork city. It also acts as a house set to both the hydro stations on the Lee and the steam station in Cork city.

The catchment area of the Lee down to Inniscarra is 790 square kilometres (306 square miles). The average annual flow of the river at Inniscarra is 27.5 cubic metres per second (970 cu sec). The storage capacity in the reservoir amounts to 45.4 million cubic metres, which is 5.2% of the average annual flow. The alternators in both stations generate at 10,000 volts. This is stepped up to 110,000 volts and transmitted to the main transmission system at Kilbarry on the outskirts of Cork city. At Inniscarra feeds are provided also into the local 38,000 volt and 10,000 volt distribution networks. The Carrigadrohid station, which is ten miles upstream, is remotely controlled from Inniscarra.

To preserve the fishing in the River Lee, Borland-type fish passes are built into the dams at Carrigadrohid and Inniscarra.

Constructional work on the hydro electric development of the Lee was commenced in 1952 and both stations were commissioned in 1957. The cost of all the work was £4½ million.

In a year with average rainfall, the generated output of the two Lee stations is 77 million units.

Front cover shows Inniscarra Generating Station

Part of Generator at Carrigadrohid

PRINCIPAL TECHNICAL PARTICULARS

Catchment area 1,400 km² (306 sq. miles)
 Average annual rainfall 1,524 mm. (60 in.)
 Average annual flow
 (Inniscarra) 27.5 m³/sec. (970 cu. secs.)
 Storage capacity 45.4 x 10⁶m³ (5.2% of annual flow)

<i>Generating Station</i>	Carrigadrohid	Inniscarra
Dam length	350 ft.	800 ft.
Dam height	70 ft.	140 ft.
Spillway gates	Three, 10 ft.	Three, 40 ft.

Turbines

Number	1	2
Type	Kaplan	Kaplan
Head	13.55 m	29.4 m
Rating, H.P.	11,600	21,600 and 5,800
R.P.M.	167	214 and 428
Year commissioned	1957	1957
Maker	Voith	Voith

Generators

Type		3 phase, 50 cycle
Normal rating, kVA	11,500	21,400 and 5,700
Power factor		0.7
Voltage		10,500
Maker	Siemens Schuckert	Brown-Boveri

Main Transformers

Rating, kVA	12,000	27,000 and 5,000
Maker		A.S.E.A.

Switchgear and Control Gear

Maker	A.S.E.A.
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Average Annual Output:

Carrigadrohid	21 x 10 ⁶ kWh
Inniscarra	56 x 10 ⁶ kWh
Total	77 x 10⁶ kWh



The Generating Hall, Inniscarra

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.

HYDRO STATIONS		<i>Capacity</i>	STEAM STATIONS		<i>Capacity</i>
		<i>Mw.</i>			<i>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	Allenwood (Co. Kildare)	<i>sod peat</i>	40
River Erne:	Cathaleen's Fall	45	Ferbane (Co. Offaly)	<i>milled peat</i>	90
	Cliff	20			
River Lee:	Inniscarra	19	Lanesborough (Co. Longford)	<i>sod and milled peat</i>	60
	Carrigadrohid	8			
River Clady:	Clady	4	Rhode (Co. Offaly)	<i>milled peat</i>	80
		<hr/>	Bellacorick (Co. Mayo)	<i>milled peat</i>	40
		219	Shannonbridge (Co. Offaly)	<i>milled peat</i>	40
UNDER CONSTRUCTION			Arigna (Co. Roscommon)	<i>native coal</i>	15
Pumped Storage			Miltown-Malbay (Co. Clare)	<i>sod peat</i>	5
Turlough Hill, Co. Wicklow	292		Screeb (Co. Galway)	<i>sod peat</i>	5
			Cahirciveen (Co. Kerry)	<i>sod peat</i>	5
STEAM STATIONS	<i>Capacity</i>		Gweedore (Co. Donegal)	<i>sod peat</i>	5
	<i>Mw.</i>				<hr/>
Pigeon House "A" (Dublin City)		90			1,459
<i>oil</i>					
North Wall (Dublin City)		48			
<i>oil</i>					
Ringsend (Dublin City)		270			
<i>coal/oil</i>					
Marina (Cork City)		120			
<i>oil</i>					
Pigeon House "B"		268			
<i>oil</i>					
Great Island (Co. Wexford)		120	Total Capacity,		
<i>oil</i>			Hydro and Steam	1,678 Mw.	

Carrigadrohid Generating Station

