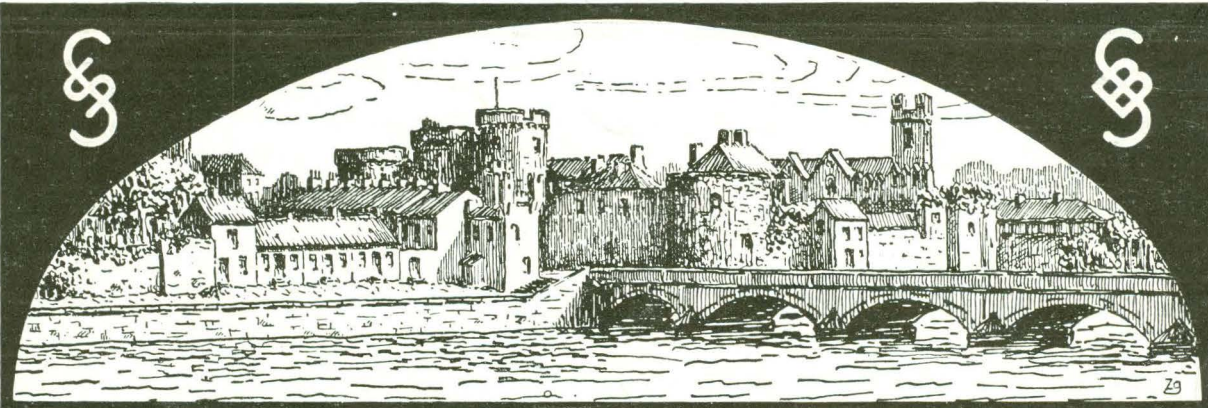




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PROGRESS ON THE SHANNON

3rd YEAR
MAY 1929
NUMBER 8

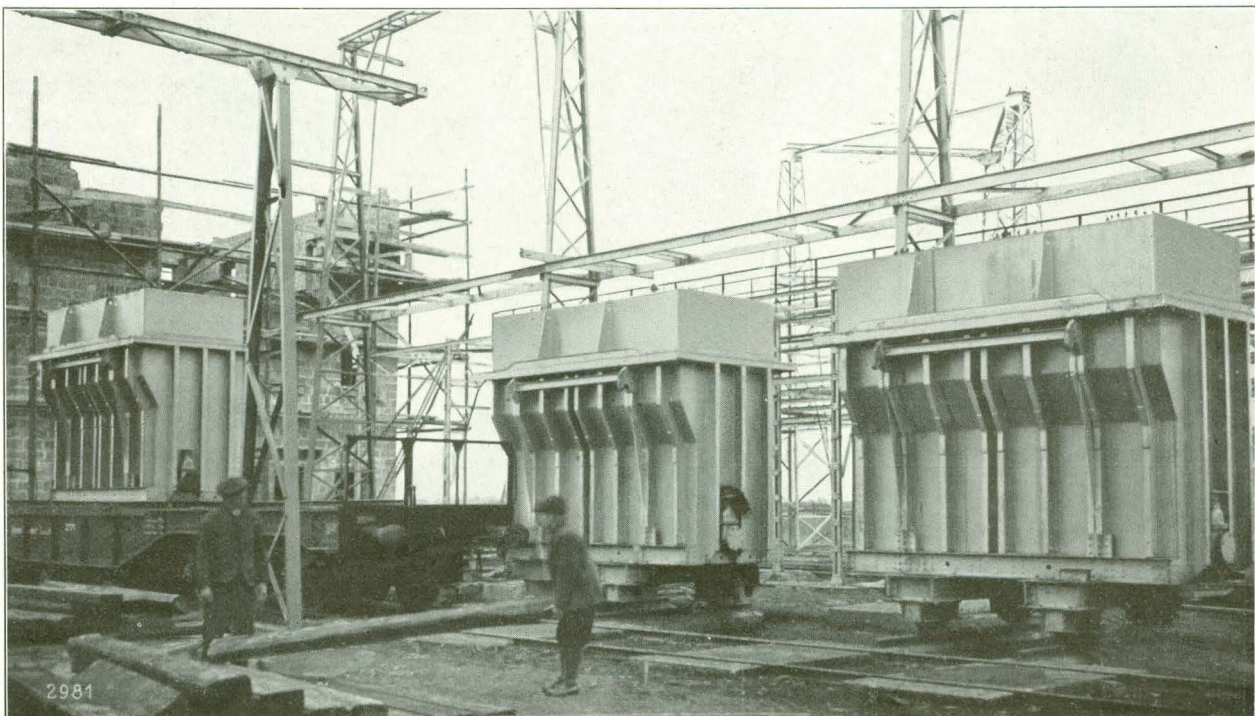
Electrical part of the Shannon Scheme

110 kV Transformer Station Dublin

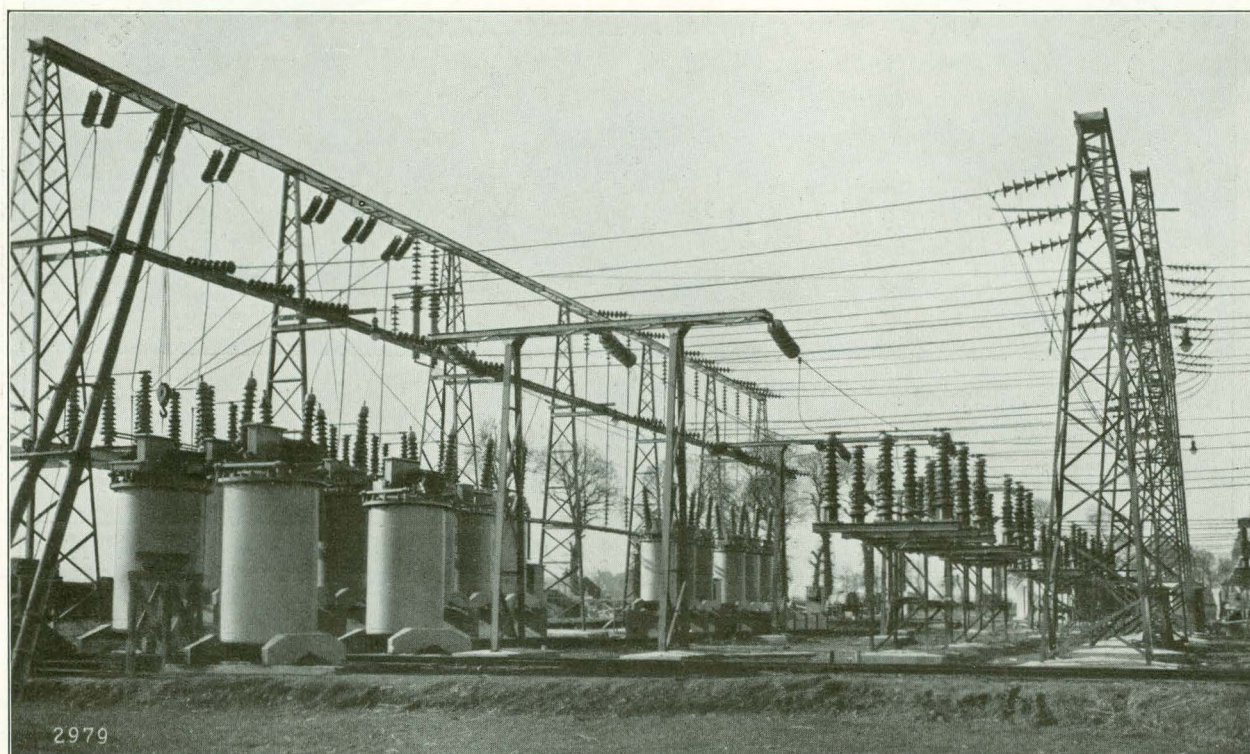
Part II

Pict 7 shows the unloading of the last of the three 15000 kVA 110/38.5 kV transformers. These are placed between the 110 kV and the 38 kV sections

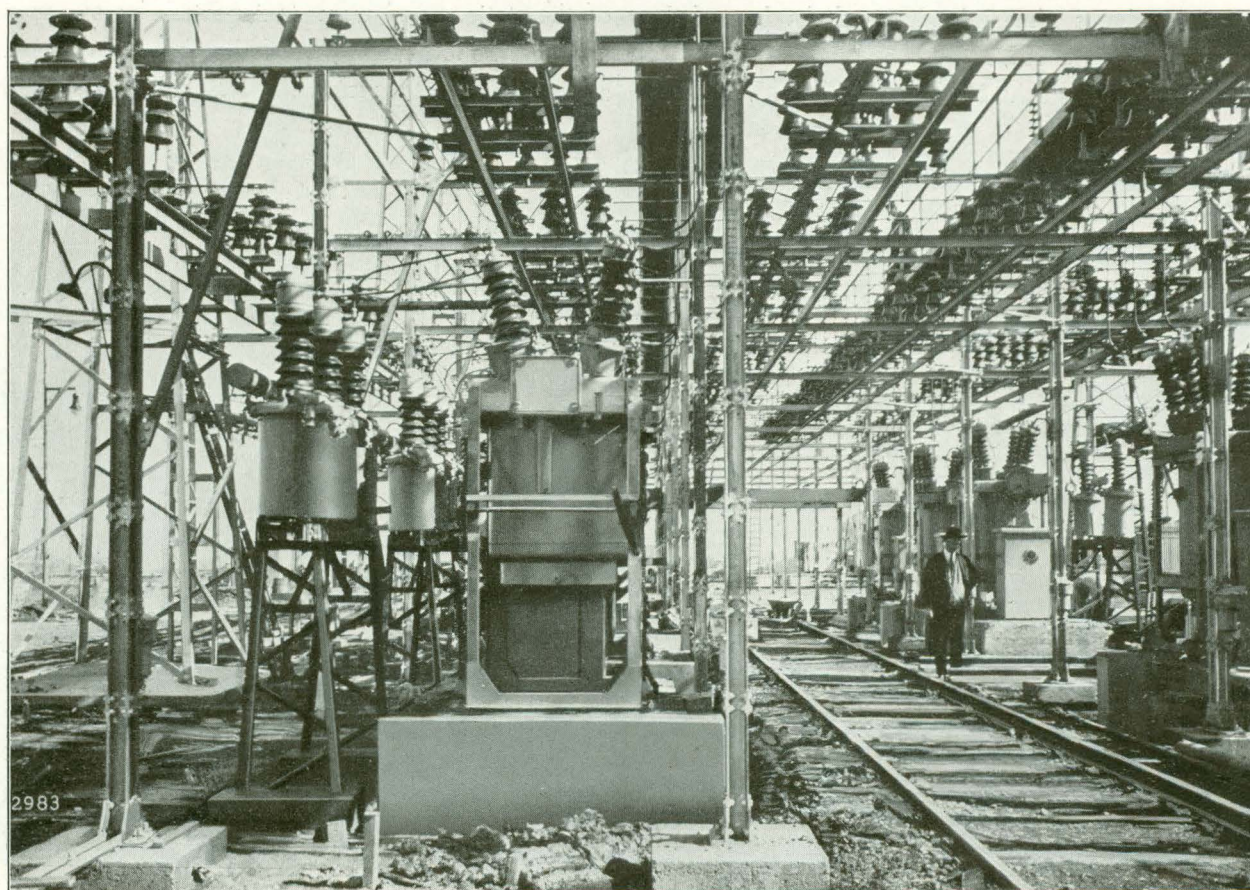
of the station and were transported by means of a special 50 ton railway truck having an exceptionally deep well to permit the load passing through



Pict. 7. Unloading of 15000 kVA 110/38,5 kV transformers



Pict. 8. 100 kV plant in course of construction



Pict. 9. 38 kV plant in course of construction

the standard gauge limits. The wheels of the transformers can be turned 90° after jacking up the tank and facilitate thereby transportation on site. An oil circulating and air cooling plant is to be provided

for each transformer and this also will be completely outdoor, the driving motors for fans and pumps being totally enclosed.

The 38 kV oil switches have a rupturing capacity of 300000 kVA (pict.10) and

have all three phases in one tank; the tank is held in a frame structure and can be lowered for contact inspection. As with the 110 kV oil switches, the 38 kV switches have remote controlled solenoid operation

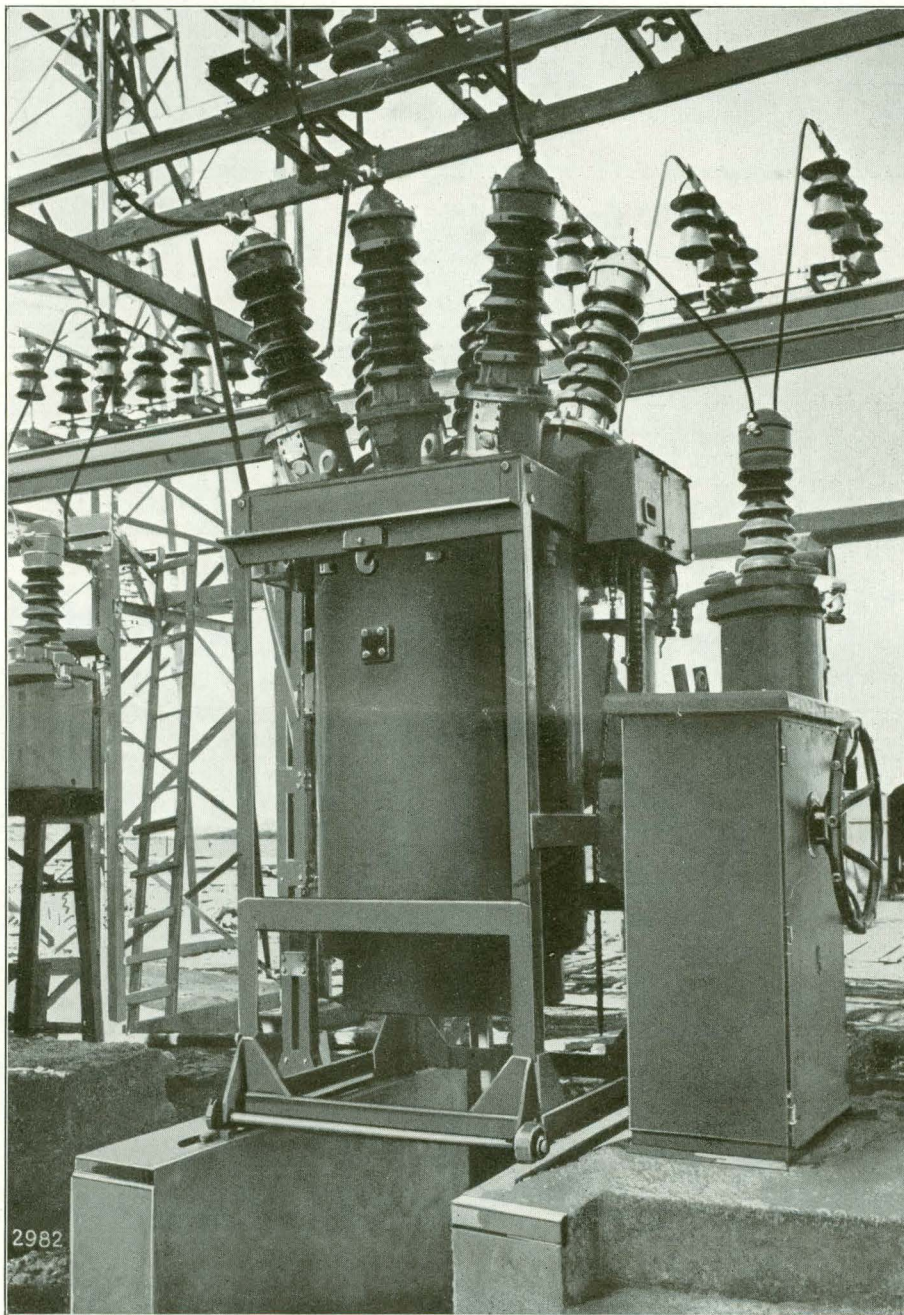
but can also be manually operated. In the picture, the separate current transformers can be seen situated just behind the oil switches. As a further reference to pict. 2 we give pict. 9 showing the 38 kV plant in course of construction. The busbars

are of 30 mm outer and 26 mm inner diameter copper piping whereas the remaining connections are partly 20 mm outer and 16 mm inner diameter piping and partly 50 mm² bare copper cables.

In addition to a central operating gangway on ground level, two parallel overhead inspection gangways run between the busbars and join at the ends.

To neutralise the leakage current, which is relatively high, extinguishing transformers with an intermittent rating of 3 hours are connected to the 38 kV busbars through isolating switches. The low tension apparatus appertaining to these extinguish-

ers, such as regulating chokes and the earth leakage indicating devices, are located in the control buildings. All the apparatus except the power transformers and extinguishing transformers which have their own wheels, can be moved on two special trucks.



Pict. 10. 38 kV oil switch

In connection with these trucks, the various rows of operating plant are served by short railway tracks. These are joined by cross-tracks lying one rail height higher. After running right on to two portable sections of rail, placed at a crossing point, the special transport trucks can jack themselves up to permit their wheels being turned 90°.

The site of the Dublin station was chosen close to the main railway line and the two rail tracks on the site have been connected up to the main lines.

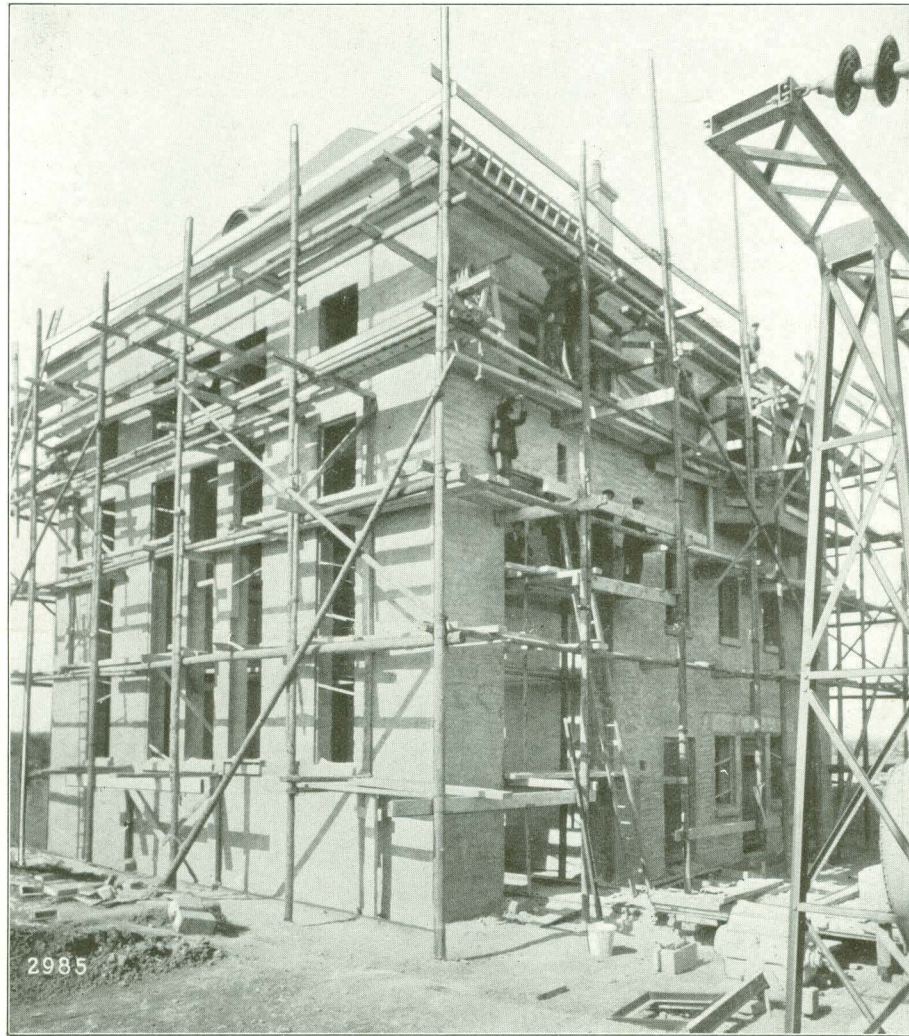
The site is well illuminated by a liberal number of our standard street lamps. The control room is placed on the second floor

of the control house and its bay-windows overlooking the outdoor station ensures efficient supervision. A 1000 Watt searchlight fixed to this bay-window enables similar inspections to be made at night.

The control room contains the main and station-demand panels and also the apparatus for high-frequency telephony operating over the H.T. transmission lines. Instruments and the control diagram are mounted

on the main board. A three-section desk holds the danger, temperature measurement and supervising arrangements. The relay panels are placed in a room exactly below the control room. In the building are housed also the two station-demand transformers, a 152 ampere-hour, 220 V, battery for the operating of all oil

switches and the supply to the emergency lights, further two smaller 24 V batteries for alarm circuits and finally the charging sets. The rail tracks enter the workshop adjacent to the control house. The workshop which is equipped with machine tools etc. for repairs is as high as three storeys so that even the bushings of a main transformer



Pict. 11. Control house with workshop

can be replaced. The entrance of this workshop may be seen in the foreground of pict. 11 and it will be noticed that daylight lighting has been carefully considered. The bay-window of the control room can be seen further to the right.

In a future article we hope to deal with the 110 kV Cork Station in similar detail.