To maintain a conversion efficiency equal to the datum already chosen it is therefore necessary to pickle the gauzes after approximately eighty days' service.

It is obvious that if it is possible to pickle when the cusum plot has just passed through its peak, the converter efficiency will be maintained at a value considerably in excess of the datum. The dotted line in Fig. 3 is a typical cusum plot for the number two burner; the other curves are obtained by pickling the gauze pad at intervals of one to two months. The cusum plots in Fig. 3 show that the conversion efficiency can be maintained at a value above the datum, in this case 94 per cent.

Use of the cusum method for determining the optimum time for pickling the converter gauze pads has enabled the Ardeer nitric acid plant to increase significantly its overall nitrogen efficiency.

References

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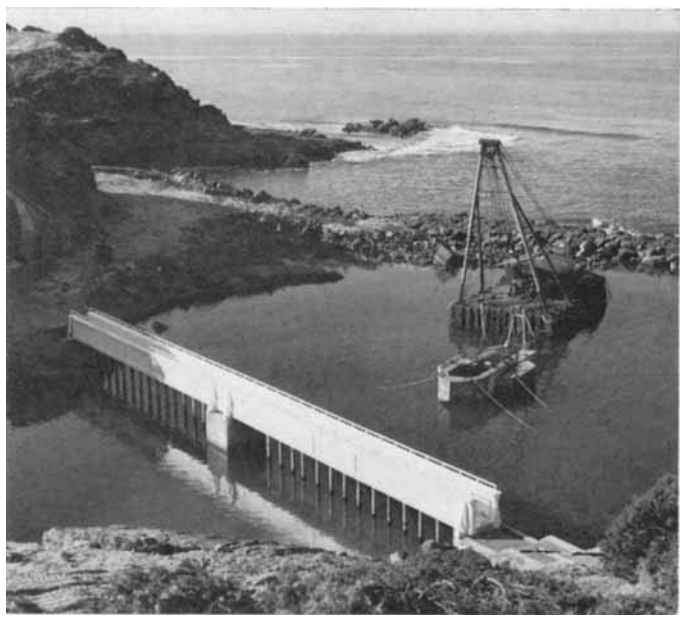
Platinised Titanium Anodes in a Sea Return System

A new 200 kV d.c. power link between the Italian mainland and Sardinia feeds electricity produced from Sardinian low-grade coal into the Italian grid via Corsica, the circuit comprising overhead conductors and submarine cables in one direction and the sea itself in the other. The sea return shows considerable cost savings but requires an efficient and durable anode system to feed the current into the sea.

Conventional anode materials would be subject to relatively rapid corrosion and would require considerable space; platinised titanium anodes were therefore chosen, and Marston Excelsior Limited were asked to design a suitable anode system to take full advantage of the properties of platinised titanium and to ensure that voltages near the anodes would not exceed defined values.

Various design systems were evaluated, taking into account the contours of the sea bed, the geometrical arrangement of anodes in various arrays, current flow and other factors, using a computer for the calculations. The system finally selected comprised an in-line array of thirty cylindrical anodes, with an average spacing of one metre, suspended vertically in the sea from a platform above the high water level.



The anode installation at the Italian mainland end of the 200 kV power link
(Photograph by courtesy of The English Electric Co Ltd)