

GEC moves deeper into small hydro

A greater involvement in the small hydro market was announced last month by GEC, Rugby, England, as the company continues to consolidate its production of small a.c. generators and motors. Following an "extensive" survey of the market, and talks with five turbine manufacturers (Sørumsand, Tampella, Gilbert Gilkes and Gordon, Andritz, and James Leffel) the company is convinced that its decision to turn its design and marketing expertise to the small hydro field (1 to 10 MW) is correct.

Three major characteristics mark the small machine compared with the large one, R.E. Prager — the Chief Designer (Medium a.c. Generators), announced last month. These were, he said, "the greater propensity to overspeed, the thrust which is generally carried by the generator bearings and the extra inertia required".

All of these could be met quite simply, he said. "The overspeed requirements need a higher grade steel in the rotor and possibly a re-design of a standard component, neither of which is particularly expensive. GEC already makes a wide variety of bearings," he continued, and these can also be modified if necessary. "As for the inertia required, a flywheel could easily do the job, and would have the added advantage of forming part of a disc brake if required.

Another difference between the large and small hydro markets, he noted, was the speed of delivery; tendering had to be handled in days and deliveries in about 20 weeks. "We can do it for diesel generators" he said, "and there's no reason why we can't do it for small hydro."

Flood control pays off in USA

An estimated \$135.4 million has been saved by preventing flood damage on some of the major river basins in the USA, according to a report by Water & Power Resources Service. These savings are in addition to power, irrigation, and recreational benefits derived from operation of the Service's projects.

Flood damages prevented in the

Lower Colorado region accounted for a major share of the 1979 benefits, the Service said. The Salt River project in Arizona prevented \$60 million in potential flood damages, and benefits from features of the Colorado river storage project in Arizona and California amounted to \$29.1 million.

The 1979 snowmelt flood potential for the Pacific Northwest region was somewhat lower than average; nevertheless more than \$22 million in damages was prevented by Water and Power works.

Because of the record snowfall in the Upper Colorado region, several of the reservoirs in this region were drawn down to store the anticipated floodwater. Floodwater stored in Blue Mesa reservoir in Colorado prevented estimated flood damages of \$100 000 along the Gunnison river. Another benefit was reported by the Southwest region, where floodwaters stored in Marshall Ford dam in Texas prevented \$11.9 million in damages.

Since 1950, nearly \$1.8 billion in potential flood damages have been prevented by Water and Power projects. This is more than twice the \$771 million allocated to flood control on Water and Power projects since funds were specifically allocated in 1926.

Sudan's "Third Power" project

Britain's Overseas Development Administration and the International Development Association of the World Bank are to provide the bulk of the finance for Sudan's \$290 million "Third Power" project.

The project is designed to increase the country's electricity capacity by 184 MW. Scheduled completion date is 1985.

"Third Power" should help to meet the growing demand for electricity now being placed on Sudan's Blue Nile grid. The project will provide finance for the addition of the fifth and sixth hydro units at Roseires hydroelectric facility, some 270 miles south of Khartoum. It will also provide the embedded parts of the seventh unit.

Roseires provides about 65 per cent of the Blue Nile's grid power. The grid itself produces about 80 per cent of the electricity consumed in

the Sudan. Both the fifth and sixth hydro units will add 42 MW to the existing generating capacity. Roseires' fourth hydro unit, which became operational in September 1979, brought the station's capacity up to 132 MW.

When the fifth and sixth units are completed, Roseires will therefore have a total generating capacity of 216 MW.

The fifth and sixth units at Roseires are open to international tender. ASEA of Sweden and Alpin of Austria installed the first four units. The power station development at Burri and Khartoum, which is being financed directly by the Overseas Development Administration and tendering is restricted to British firms.

Lesotho scheme looks for support

International help is being sought in a \$700 million scheme to divert the Orange river. The Highland Water Scheme, as it is called, aims at regulating the flow of the river and harnessing the waters to produce electricity. The project would take an estimated 15-20 years to complete and involves diverting the Orange river north into the Transvaal. Politically the scheme is sensitive as it would be a joint undertaking with South Africa and altering the flow of the river could affect Namibia. Lesotho's Prime Minister, Chief Jonathan, is keen to promote the project and has asked the UK for assistance which is expected to finance a feasibility study from the aid resources of the 5th European Development Fund.

Artificial rain helps dam impound

Fourteen-day artificial rains yielded about 100×10^6 m³ of water for the Jatiluhur dam reservoir, Indonesia, at a total cost of 100 million rupiah (\$625 000 million). The Acting Director of the Jatiluhur project, Muhammad I. Ulama, said this meant that the price of the water was only 1 rupiah/m³. The rains had been made experimentally, in cooperation with the Indonesian Institute of Sciences, which had determined that the atmosphere surrounding Jatiluhur

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