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present and for the future. Yet, however richly we may have developed our own resources, there are times when we have need of a power beyond our own material strength; the power of the spiritual, that hidden driving force which through the ages of millions of years, has lifted man to his present high—though still imperfect state. There are always resources of enduring value within ourselves which are ever in need of cultivation; the elements of independence and interest which call for skill and excellence.

Refinement of thought leads to refinement of action, and we cannot face the future with fortitude, courage and strength of purpose without the aid of the powers of the mind and soul.

And so as we step into another finite period of time bounded by our calendar of days, and say farewell to the old, may we help to make the future which lies before us, a chapter that shall be filled with a record of whatever joy, happiness and goodwill to those in our immediate surroundings, and to all mankind.

Thus we sum up the past and prepare for the future, while we enjoy the present to the best of our ability and which the occasions allow us to do. —Reprinted from Progress.

# SWITZERLAND BUILDS HER FIRST LARGE-SCALE THERMAL POWER STATION

Hitherto Switzerland's reserves of water power have provided the "fuel" from which the country's electricity supplies are generated. In view of the expected increase in consumption, however, towards the end of the 1960's the hydro stations alone will not be able to meet demands during the winter months. In any case the harnessing of Swiss hydro-electric power resources will be completed in ten or at the most fifteen years. Thus the thermal generation of electricity will become a necessity within the foreseeable future. At the present time there are two possibilities open: either conventional thermal stations or nuclear power stations.

In the long run it will be the nuclear power plant that will have to supplement the hydro stations in Switzerland. The nuclear fuel needed for operation incurs only low transport overheads, and several years' supply can be stored simply and cheaply. But for the time being the production costs of nuclear energy are too high to be able to compete with power generated in conventional thermal or hydraulic stations. Moreover if the reactor is to operate economically, its unit rating must not be too small, and should amount to a few hundred MW at least. In addition its hours of duty must not fall below a certain annual minimum. Any attempt to meet these demands in Switzerland at present could only be made at the expense of the rational exploitation of the available hydro-electric capacity. Meanwhile the impending supply deficit must be filled, since the rise in Swiss power demands averaged 5.8% over the last few years, which is equivalent to a doubling of consumption in twelve years or so. The best solution seems to lie in the harnessing of the remaining water resources, supplemented by the construction of a few thermal stations of conventional type. The Centrale Thermique de Vouvry S.A. (CTV) of Lausanne is already building a thermal power station in the region where the River Rhone flows into the Lake of Geneva. Participating in this concern are the Energie de l'Quest-Suisse S.A., Raffinerie du Rhone S.A., the Swiss Federal Railways, Schweizerische Aluminium AG (Alusuisse), Lonza AG and the Societe Romande d'Electricite.

This concern recently placed an order with Sulzer Brothers for a Monotube Steam Generator, which will have a maximum steam output of 460 tonnes/h, a service pressure of 190 atm.g. and a temperature of 540 degrees C. The fuel oil will be supplied by the neighbouring Raffinerie du Rhone S.A. at Collombey. The turbo-set will have an installed capacity of 150 MW, and it will generate some 400 GWh during about 3000 hours of service annually. The price per kilowatt-hour will be around 4 to 4.5 Swiss centimes. In the not-too-distant future a second block of similar capacity will be installed.

The problem of air pollution from the boiler exhaust gases was examined very thoroughly. Because it was imperative that any such pollution be avoided in the Rhone plain, which lies at an altitude of some 1250ft above sea level, an underground chimney in the form of a tunnel 4750 ft. long was considered first, leading the flue gases out to the surface through the mountainside. In the end, however, it proved more practical to site the whole station at an altitude of 2700 ft. above sea level.

(By courtesy of Sulzer Technical Review)

# NEWS OF THE COLONY • • • •

## Auckland Swiss Club

### CONGRATULATIONS

Our congratulations to Mr and Mrs Erich Flueck, to their little baby daughter Brigitta, born on 30th December, 1964, a wee sister to Cederick. With our best wishes for their future.

—The Committee.

# Hamilton Swiss Club

A happy crowd gathered on Sunday, 13th December, 1964, at the Pine Lodge, to celebrate our traditional Christmas evening. The old Christmas story was brought to our memories by a delightful "Krippenspiel," produced by our youngsters, and accepted with great pleasure and applause.