

is usually an expensive solution and is not always possible. The use of diesel exhaust purifiers obviates this need, and allows regular stand-by generator testing to take place in normal working hours; since there is no risk of exhaust emissions polluting the immediate environment. This is particularly applicable for generators installed to provide emergency power to hospital complexes, but is also impor-

tant for computer installations, department stores, hotels, large banks, radio and television stations, railway stations, telephone exchanges and other large buildings.

References

- 1 M. P. Walsh, *Platinum Metals Rev.*, 1986, **30**, (3), 106
- 2 E. J. Sercombe, *Platinum Metals Rev.*, 1975, **19**, (1), 2

The Largest Producer of Platinum Metals

Platinum in South Africa, Special Publication No. 12

COMPILED BY E. M. EDWARDS AND M. H. SILK, Mintek, Randberg, South Africa, 1987, 55 pages, ISBN 0-86999-830-7, U.S. \$30

Within the geological formation known as the Bushveld Complex lies, perhaps, eighty per cent of the world's known reserves of platinum. The currently exploitable reserves occur in the Merensky Reef, the Platreef and the UG-2 chromitite layer, and from these strata approximately fifty per cent of the world's requirements for platinum group metals are produced. As is well known to the readers of *Platinum Metals Review*, the properties of the platinum group metals ensure their use for a wide variety of industrial applications. In addition, platinum finds use in the manufacture of jewellery and as a store of wealth, and over the past 35 years the requirement for it has increased enormously, but somewhat erratically. One result of a recent increase in the demand for platinum is that several new platinum producers are emerging. This interesting publication, which reviews the past and present activities in platinum mining in South Africa before going on to consider the future outlook, is therefore timely.

A summary is given of the discovery of platinum and the early mining operations in the 1920s as many companies were established to exploit the various Bushveld deposits. When expectations were not realised, ambitious plans were abandoned and the industry suffered a severe set-back. This led to rationalisation and the emergence of Rustenburg Platinum Mines as the only significant producer in South Africa.

After World War II there was an upsurge in demand for the platinum group metals, especially by the chemical and oil industries, and Rustenburg Platinum Mines embarked upon a programme of expansion. By 1957 their production of platinum group metals was at an

annual rate of 430,000 ounces, but by 1958 another set-back resulted when the oil industry reduced its requirements significantly. However, in response to the development of new outlets for the metals, the 1970s showed a dramatic growth in South African output, following the entry of three new major platinum producers, but once again a period of severe market imbalance resulted. By the end of the decade stability was restored and the price of platinum increased substantially encouraging existing mines to expand their activities. Now several new concerns have announced their intention to enter the industry. It should be noted, however, that recent changes in the financial markets of the world have occurred since this book was prepared, and may be expected to influence future plans.

The authors consider briefly the present availability of supplies from other established sources. The U.S.S.R., for many years the leading producer of platinum and still the second largest producer of platinum group metals, appears to be retaining part of its output for growing applications within its sphere of influence, while Canada, the U.S.A and Australia make a worthwhile contribution to supplies.

As to the future, it is suggested that co-operation between producers may be the best way to avoid the dramatic surges and set-backs experienced by the industry in the past, but at present this is regarded as unlikely. It is difficult to disagree with the opinion that the producer industry will be heavily dependent on both the expansion of existing industrial uses and the development of new applications, and that further research must be vigorously pursued so that the latter will be achieved.