

# Discussion of the previous paper

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The first 22-foot-diameter Aerofall mill was installed at Mangula in 1957. This was fitted with cast-iron trunnions located to the mill shell with 2-inch-diameter mild-steel bolts. The cast-iron trunnion on the discharge side started to crack in 1960, and this was accompanied by frequent breakages of the 2-inch-diameter steel bolts. This occurred thirty-seven months after the commissioning of the mill.

The second 22-foot-diameter Aerofall mill, installed in 1959, was fitted with the same trunnions and the same size bolts as those used in the first mill. The discharge trunnion developed cracks late in 1960, seventeen months after commissioning. As with the first mill,

great difficulties were experienced with frequent breakages of the 2-inch-diameter bolts.

Two changes were made in the design of the mills. New discharge trunnions made of cast steel to specification ASTM/A27/65/35 were fitted, and the 2-inch-diameter mild-steel bolts were replaced with high-tensile bolts of  $2\frac{1}{4}$  inch diameter. The cast-steel trunnions have stood up well during the past thirteen years, and failure of the bolts has been negligible. The trunnions are mounted on Michell-type bearings, which have proved very efficient.

Comparisons with plants handling equivalent tonnages have shown that the cost of dry grinding in the Aerofall mills at Mangula is lower than that at concentrators using conventional crushing and grinding equipment.

\*The Messina (Tvl) Development Company, Johannesburg.

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## O.F.S. Branch

### Minutes of the General Meeting held at the Welkom Club on Wednesday, 2nd June, 1976, at 4.00 p.m.

Mr G. J. C. Young (Chairman of the O.F.S. Branch) was in the Chair. Also present were:

*Two Fellows* Messrs Z. J. Lombard (Committee Member), D. A. Smith (Committee Member).

*Two Members* Messrs R. W. Impey, D. I. Watson.

*Four Associates* Messrs A. J. Johansen, W. F. de Lange, J. Scott, C. P. Visser.

*Two Graduates* Messrs A. P. S. Howard, P. S. Wentworth.

*One Student* Mr D. A. Arnold.

*Thirty-two Visitors.*

*Total Present* Forty-four.

Mr Young declared the Meeting open and extended a welcome to the members and visitors present.

### Apologies

Apologies for non-attendance were received from B. J. Drysdale, J. Lorenzon, A. N. Shand, and L. Vorster.

### Minutes of Previous General Meeting

The Minutes of the General Meeting held on the 11th February, 1976, were taken as read, and their adoption, proposed by Mr D. A. Smith and seconded by Mr Z. J. Lombard, was carried.

### General Business

Mr Young reported that Mr R. R. Perkin, Honorary Secretary of the O.F.S. Branch for the past two years, had recently been transferred to Johannesburg and had had to resign his office. On behalf of the Committee,

Mr Young expressed his thanks to Mr Perkin for the hard work that he had put into the local branch. Mr A. R. Godfrey had been asked by the Chairman to perform the duties of Honorary Secretary until such time as a new Honorary Secretary could be appointed.

### Talks on Nuclear Instrumentation

Mr Young introduced Mr J. W. Tongs and Mr J. G. Barnard of Texas Nuclear (S.A.) (Pty) Ltd, and called on them to give a talk on the uses of nuclear instrumentation in industry.

Mr Tongs began by outlining the basics of radiation and nuclear energy, and how these were utilized in nuclear mass meters and density meters. Mr Barnard spoke about the problems involved in weighing and in the calibration of mass meters. He outlined the way in which many of these problems could be overcome with the use of nuclear instruments. A demonstration of the important features of the Texas Nuclear meter concluded the presentation, which attracted a lively discussion.

Mr Young thanked Mr Tongs and Mr Barnard on behalf of those present for their very interesting presentation.

### Closure

The Chairman thanked members and visitors for their attendance, and declared the Meeting closed at 7.00 p.m. He thanked Texas Nuclear (S.A.) (Pty) Ltd for very kindly providing the refreshments served after the meeting.