

SPOTLIGHT

on a technical excursion to AECI, Modderfontein

by A.M.P. HENDERSON*

Twelve members of the Witbank/Middelburg Branch, on a technical excursion, were hosted by the Technical Department, Pinelands site, of AECI on 10th February, 1989.

The tour opened with some well-presented talks on 'Permitted Emulsion Explosives', and the application of the 'French' test to the development detonators.

Dr Piet Halliday of the Technical Department discussed the development and current situation regarding permitted emulsion explosives, with some emphasis on the AECI capability of producing explosives of low VODs in both paper and plastic cartridges.

The improvement in post-detonation fumes when water-based explosives are used underground was highlighted. AECI, as a member of the ICI family, has wide-ranging international links in the explosives industry, and research and development is supported at two central technical centres in Canada and Scotland.

Dr Mike du Plessis included some practical experiments on detonators in his talk. He demonstrated the use of the 'French' test to develop detonators that are resistant to static electricity and are therefore safe for use in mines that are prone to stray static charges as a result of lightning. A new fusehead used in 'Statsafe' detonators was

compared with that of the 'Carrick' detonator, being much more resistant to static electricity.

To complete the visit, AECI appropriately subjected their guests to some large-scale explosive demonstrations, conducted by Mrs Lynette Swartz and Mrs Helen Smith.

The relative power of explosives is measured with some accuracy and reproducibility by use of the pond, which is a uniquely constructed waterfilled concrete tank. The pond is used to optimize permitted products for power and dynamic shock desensitization. This enables the Technical Department to formulate products with extended shelf life and reliable detonation characteristics.

At the permitted-explosives gallery, the effect of permitted explosives in methane-containing atmospheres was demonstrated with some effect.

AECI is the only explosives company in the RSA with a test gallery. The Technical Department is therefore in a position to develop and test products for underground coal mining to satisfy specific market requirements.

The visit concluded with an excellent luncheon, which was greatly enjoyed by all. Although the visit was brief, and only a fraction of the activities relating to the development, manufacture, and testing of explosives could be covered, it was the consensus of the party that it was a rewarding and worthwhile visit. The appreciation of the Branch was expressed to our host, Mr Les Miller of the Explosives Division.

* Chairman Witbank/Middelburg Branch, The South African Institute of Mining and Metallurgy; also of Middelburg Steel & Alloys (Pty) Ltd, P.O. Box 133, Middelburg 1050.



Members of the Witbank/Middelburg Branch who visited the Pinelands site at AECI