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Rowstock 377 Ext: 7

10th November, 1960.

Sir John Cockcroft,
U.K.A.E.A.,
11 Charles II Street,
London, S.W.1.

Dear Sir John,

Bubble Chamber Plant

Thank you for your letter of 3rd November 1960. H.M. Inspector of Factories advised us to isolate the hydrogen plant from the 4 MW D.C. generators which supply the bubble chamber magnet. This greatly reduces the volume of hydrogen which can accumulate and therefore the violence of any explosion, and also of course removes the potential hazard of the generators themselves. The concrete wall required to achieve this separation increases the cost, of course, but once it has been provided it is not a costly step to isolate the compressor driving motors from the compressors.

Moreover, I am told that there are no British motors guaranteed flame-proof for hydrogen, and that, therefore, the compressor manufacturer recommended driving machines of this large size through the wall. This avoids the use of anti-static belts and pressurised conduit.

AERE have boxed-in their motors on similar applications, and have pressurised the boxes with nitrogen. In our circumstances this practice would have offered no advantages over the method we have used.

The relevant paragraph in the G.P.C. paper, starting "After seeking the advice of H.M. Inspector of Factories....", should have made it clear that the increased cost in this connection was mainly associated with separating the "hydrogen plant" from the "main plant", and not with putting the motors into the "main plant" portion.

I hope that these remarks answer your query satisfactorily.

Yours sincerely,

T. G. Pickavance