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SI WS 76-026

28 June 1976

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Weekly Surveyor

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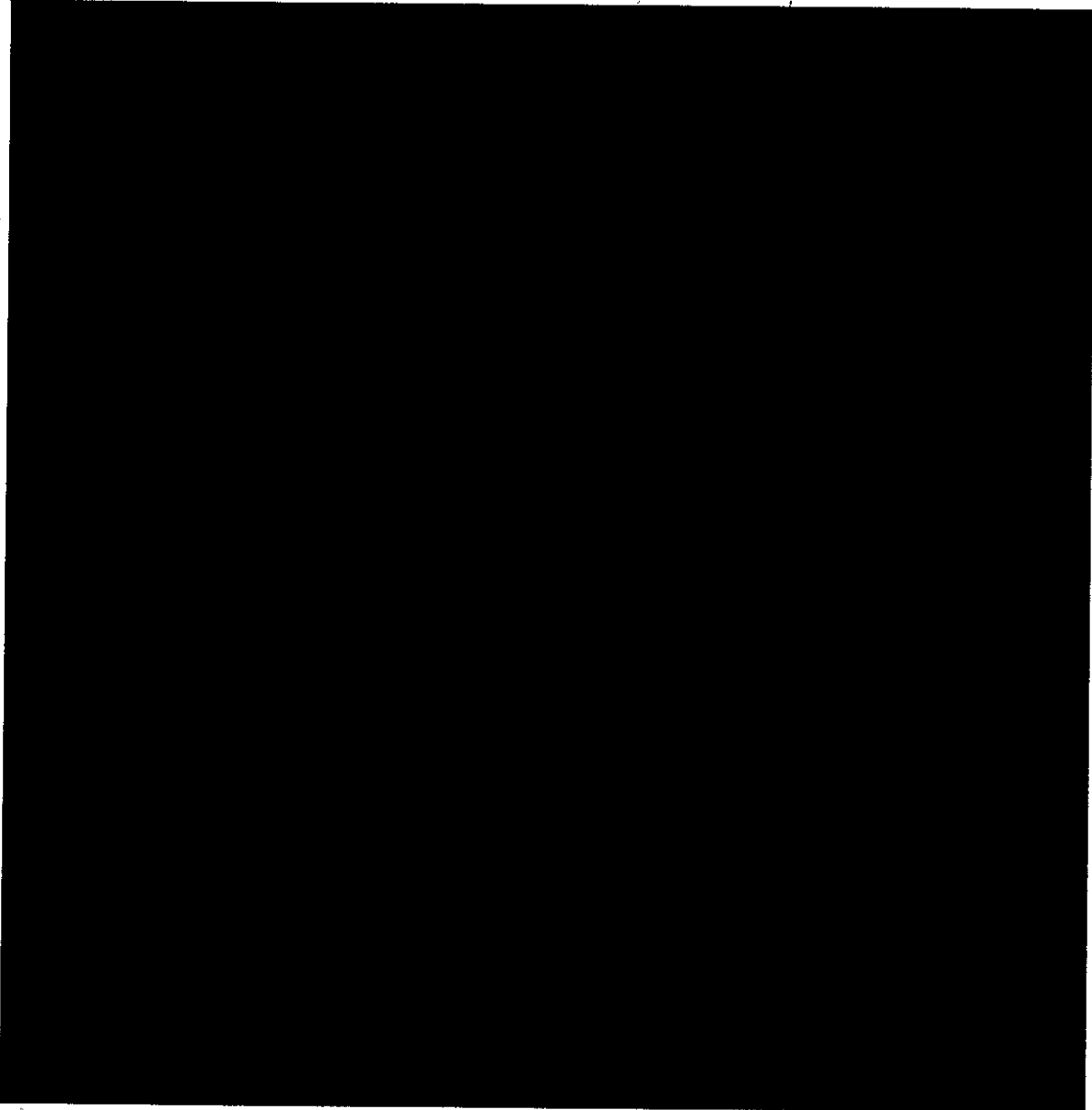
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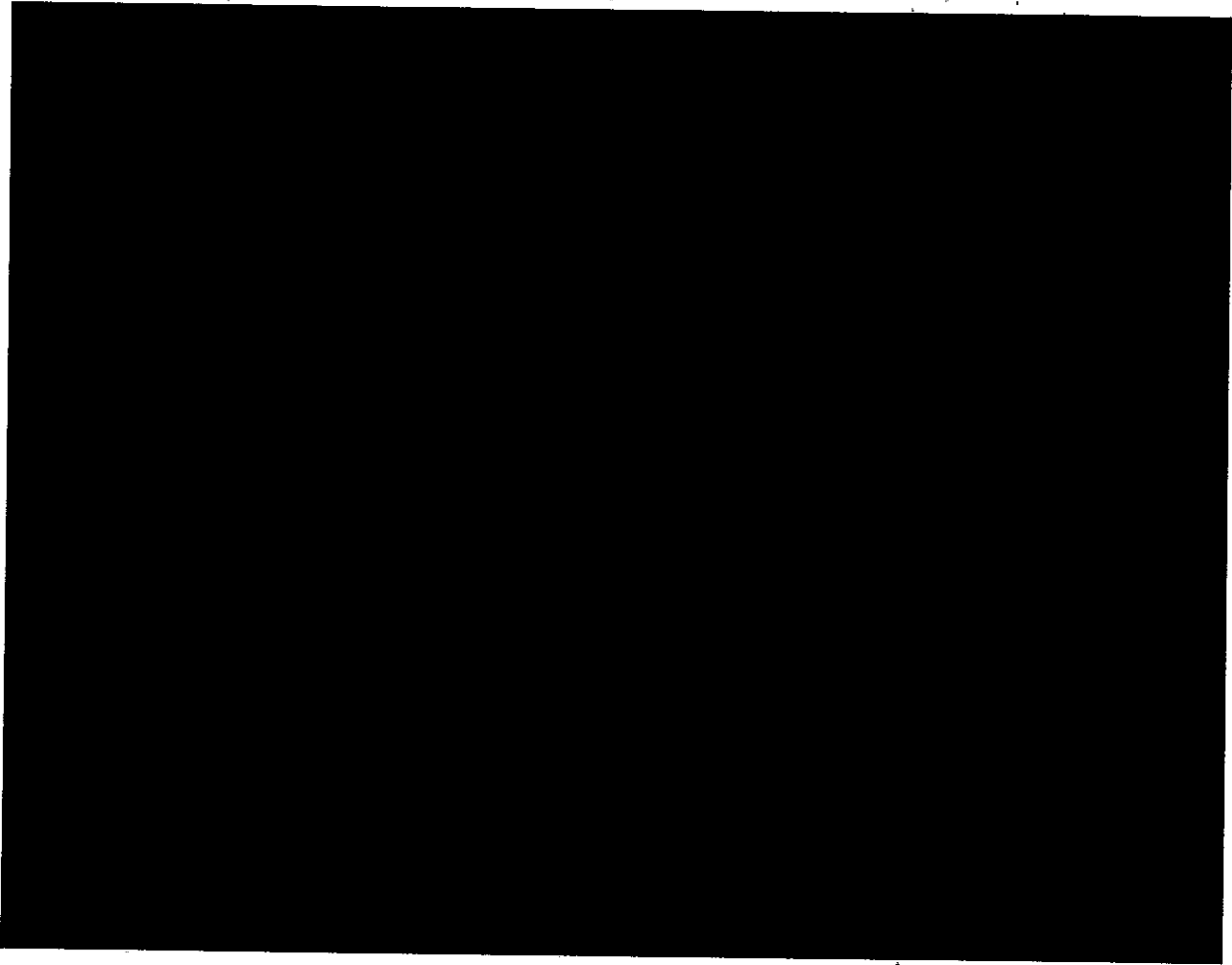
South African Discusses Delay in Uranium
Enrichment Operations 1



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NUCLEAR ENERGY

South African Discusses Delay in Uranium Enrichment Operations: A member of the South African Atomic Energy Board told [REDACTED] in early 1976 that the pilot uranium enrichment plant at Valindaba had been completed for 6 months, but that the plant had not been operated. He indicated that the delay was due to unresolved questions about the plant's safety, based on probabilistic analyses of planned operation. He gave as an example that a break in a pipe carrying uranium hexafluoride (UF₆) process gas might severely damage the plant despite compartmentation of units; present UF₆ piping may have to be changed to double piping before operations can begin.

Comment: [REDACTED] the pilot plant at Valindaba was completed in the fall of 1975, which is consistent with earlier South African predictions that the plant would be finished in late 1975 and completely operational in 1976. In the fall of 1975, however, the South Africans indicated that they were encountering UF₆ leakage problems in the enrichment process. Because some leakage was to be expected, this information suggested that the threat of severe contamination precluded plant operation and that a major program of inspection, replacement, and testing of seals or welds was necessary.

While the above report supports this suggestion, it may also be interpreted to mean that a random breakdown of one enrichment stage in the plant could cause the breakdown of other stages in a domino fashion. Either interpretation accounts for the long delay in plant operation, which has been observed since the April 1975 announcement by South Africa that a part of the pilot plant had been operated successfully. The latter interpretation, however, offers a greater possibility that the delay was the result of uncertainty about potential difficulties, rather than the result of actual problems.