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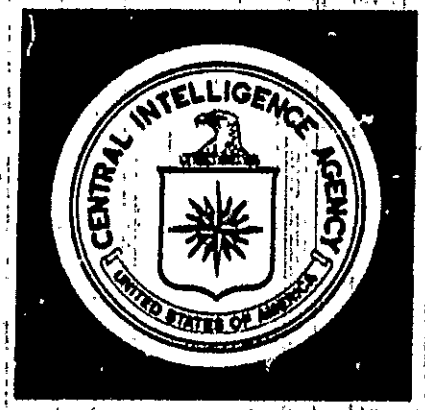

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WEEKLY SURVEYOR

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The South Africans announced that early operation of their pilot uranium enrichment plant indicate they will be able to market enriched uranium at one-third less than US price. They expect to have a full scale plant producing 6,000 metric tons of separative work units (SWU) by 1986. Recently South Africa stated that the process used is a high performance walled centrifuge, using uranium hexafluoride in hydrogen as the process fluid. This confirms previous assessments that the process is a variation on the Becker jet nozzle process. [redacted] (Page 1)

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NUCLEAR ENERGY

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Some Aspects of South African Uranium Enrichment Process Revealed: South Africa expects to be a world supplier of enriched uranium as well as uranium ore by the late 1980s.

Earlier this month, South African officials announced that their uranium enrichment pilot plant had gone into operation. It is likely, however, that only part of this plant is actually operating. The South Africans reiterated their confidence that the process will be competitive on the world market.

South Africa's first commercial enrichment plant using the process is scheduled to begin operations in 1984 and will

reach full capacity two years later, according to a South African announcement. The plant's annual production of 5000 tons of separative work could provide core loadings for about fifteen 1,000 megawatt electric power reactors, and would be designed with the capacity to double this production.

To be competitive, the South Africans are projecting a selling price of $74 per kilogram unit of separative work (SWU) using 6 mil power in 1986. This equates to a cost of about $27 million for the enrichment for the equivalent of one core loading for a 1,000 megawatt electric power reactor.

To meet this estimate, the South Africans must keep to a minimum both the amount of electricity used in the process and the cost of that electricity. The South Africans have indicated that the amount of electricity needed has been reduced, at least below original estimates. Relatively cheap electric power is available in South Africa today because the country has considerable amounts of inexpensive coal. The coal resources are not inexhaustible, however, and in the future South Africa plans to supplement its own electrical power supply with hydroelectric power from a dam under construction in neighboring Mozambique.

The South Africans could adapt their enrichment process for the production of weapons-grade material. The government claims that it has the capability to build nuclear weapons but says its policy is to use the enriched uranium for peaceful purposes. Pretoria, however, has not signed the Non-Proliferation Treaty.

Although some information was recently revealed, details about the South African aerodynamic enrichment process remain closely guarded. Pretoria, however, may be willing to export its technology as well as its uranium to countries seeking their own independent uranium enrichment capabilities.

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