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NOFORN NOCONTRACT

Central Intelligence Agency



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DIRECTORATE OF INTELLIGENCE

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NEW INFORMATION ON SOUTH AFRICA'S NUCLEAR PROGRAM AND  
SOUTH AFRICAN-ISRAELI NUCLEAR AND MILITARY COOPERATION (S NF)

Summary

[REDACTED]

Nuclear Weapons Program

[REDACTED]  
expands and confirms our knowledge of South Africa's nuclear weapons program. [REDACTED] indicates that South Africa formally launched a weapons program in 1973. Its scientists [REDACTED] were tasked to develop a gun-assembly, implosion, and thermonuclear weapons designs. In 1979, [REDACTED] identified a probable underground nuclear test site in the Kalahari Desert. The resulting international uproar reportedly caused Prime Minister Vorster to order a halt to further nuclear weapons development. (S NF NC [REDACTED])

We have had no direct indication of any subsequent activities in the weapons program. We believe, however, that South Africa already either possesses nuclear devices or has all the components necessary to assemble such devices on very short

[REDACTED]

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notice. [REDACTED] confirms the following already known details about South Africa's nuclear weapons program:

- The Kalahari Test Site was intended for nuclear weapons testing.
  - South African scientists anticipated a yield, had they tested, of 20 kilotons.
  - Research on both a gun-assembled device using two modified naval guns and on the firing system for an implosion device was conducted at the Somerset West explosives facility over the period at least from 1973 to 1977. (S)
- NE-NC [REDACTED]

- South African scientists believed that nuclear testing was not required, because of the favorable nuclear weapon modelling results they had obtained.
- Possible nuclear-related high explosive testing also occurred in the Kalahari Desert in 1977 to 1978.

- A plutonium separation plant was contemplated in 1977 to provide South Africa with a complete nuclear fuel cycle. (S-NE-NC)

[REDACTED] South Africa's Valindaba uranium enrichment plant has been producing highly enriched uranium since 1978. We estimate that this is long enough to have produced highly enriched uranium for several nuclear weapons. (S)

South Africa-Israeli Nuclear Cooperation

[REDACTED]

- South African and Israeli military officials hold meetings every four to six months to discuss the status of their military relationship, but conduct routine business through military attaches in their respective embassies.
- South Africa supplied the Israelis with depleted uranium for anti-tank rounds, as well as natural uranium rods during the period from 1972-75.

[REDACTED]

We believe that military cooperation between Israel and South Africa has been extensive, necessitating regular contact between Israeli and South African military officials. Israeli officers are regularly invited to lecture in South Africa and South African military personnel have participated in a variety of Israeli training programs. The intelligence relationship is also quite intimate, as is symbolized by Tel Aviv's appointment in 1979 of the former head of the Israeli intelligence service as Ambassador to Pretoria. The list of weapons of Israeli origin in the South African arsenal--Reshef-class patrol boats, Gabriel surface-to-surface missiles, Gallil rifles, and Uzi submachineguns--is testimony to large-scale arms deals in the past. Delayed deliveries from agreements reached before the UN arms embargo in 1977 and the South African use of Israeli middlemen to gain access to commercial international arms deals makes it difficult for us to assess current arms trading between the two countries. We have no hard evidence refuting Tel Aviv's official denials that it has violated the UN arms embargo. ~~(S)~~

~~(NF)~~

Other than South Africa's sale of 10 tons of nominally safeguarded uranium to Israel in 1963, we have little confirmed information about South African-Israeli nuclear cooperation, despite numerous reports and/or rumors linking the two states. Given Israel's overall technical expertise and South Africa's uranium resources and enrichment technology, each side could contribute to the nuclear weapons program of the other.

[REDACTED]

Nonetheless, we have no confirmed reports of equipment or technology transfer, nor do we know whether South Africa is still providing uranium. ~~(S-NF)~~

[REDACTED]