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South Africa: Defense Strategy in an Increasingly Hostile World

Interagency Intelligence Memorandum
Annex F

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NI IIM 79-10025/F
January 1980

Copy 311

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SOUTH AFRICA: DEFENSE STRATEGY IN AN INCREASINGLY HOSTILE WORLD

ANNEX F

Information available as of December 1979 was used in the preparation of this memorandum.

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FOREWORD

This publication contains Annex F of the previously issued Interagency Intelligence Memorandum with the same title as that appearing on the cover of this issuance. Annexes A through E, as one package, were also published separately.

On the first page of each annex, including this one, is a note stating which components of the Intelligence Community prepared the annex and a telephone number for directing comments or queries. The publication as a whole was prepared under the auspices of the National Intelligence Officer for Africa [redacted] (b)(3)

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Annex F

Nuclear Policy

South Africa's Nuclear Weapons Capabilities

1. South Africa can certainly produce nuclear weapons during the three-to-four-year time frame of this assessment, possibly in less than a year. Moreover, it has the capability to design simple weapons that can be delivered to targets in neighboring territories, using aircraft now in the South African inventory—Mirage jet fighters, for instance.

2. It is likely that South Africa had accomplished the design and construction of at least one complete nuclear test device, minus only the highly enriched uranium components, at the time the facility in the Kalahari desert was discovered in 1977. Highly enriched uranium probably was not available in significant quantities before late 1978, but since then enough material likely has been produced at the Valindaba enrichment plant to permit fabrication of one or several devices. A nuclear test certainly would be desirable to establish the reliability of any nuclear weapon system, though South Africa probably could develop a workable nuclear weapon without testing. A greater technical motive for South Africa to conduct a test, if it has not already done so, could be to support the development of a weapon that, in addition to being reliable, would be efficient in the use of scarce fissile material.[1] Whether or not the South Africans have believed a nuclear test to be necessary in their pursuit of an adequate nuclear weapons option, the gap between their present capabilities and the ability to deliver a finished weapon to a target may be relatively small.

[redacted]

Note: Questions and comments on this annex may be directed to either the Office of Scientific Intelligence of the Central Intelligence Agency [redacted] or the Office of Politico/Military Research (Nuclear and Scientific Division) in the Bureau of Intelligence and Research, Department of State [redacted]

Strategy

3. There are several strategies that South Africa could follow in carrying out its nuclear weapons program:

— Clandestine development but not assembly of all weapons components.

— Clandestine assembly of all components and the placing of untested weapons "on the shelf" for military use in a last-resort situation.

— Clandestine testing of assembled weapons.

— Open testing of assembled weapons.

— Overt deployment of weapons.

In the past, plans apparently were made for overt testing of at least one nuclear device, but those plans were shelved in 1977. Either subsequently or coincidentially, plans may have been made to conduct nuclear tests that would not be detected or conclusively attributed to South Africa. The current strategy probably includes at a minimum the further production of highly enriched uranium and may well extend to the fabrication of certain weapons components. The deployment of nuclear weapons probably is not part of the near-term strategy.

4. At this time, the pace and boldness with which top leaders will pursue the nuclear weapons program are still strongly influenced by the political and economic costs that South Africa would incur if the extent of the program were to be admitted or otherwise made obvious to the outside world. Such costs have borne most immediately and directly on another strategic goal—advancement of South Africa's peaceful nuclear energy program. These costs are examined below for each of three weapons program options—maintaining the program at present levels, cutting back the program, and advancing it.

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5. ***Maintaining Existing Weapons Program Levels.*** South Africa would continue to pay a variety of economic penalties if it should maintain its present technical capabilities but not move ahead with weapons development. International concern about South Africa's nuclear weapons capability has resulted in the loss of foreign assistance for peaceful nuclear development that the government had been counting on. The Safari nuclear reactor is practically shut down for lack of fresh, highly enriched fuel. (The South African Government has apparently decided not to use domestically produced fuel in order to avoid revealing that its enrichment capabilities are suited to the production of highly enriched uranium.) The Koeberg nuclear power station near Cape Town probably will suffer delays in startup because the necessary enrichment services cannot be secured abroad. Domestic capacity cannot meet the demand until one or two years after the scheduled startup of the Koeberg reactors.

6. In addition, plans for a commercial uranium enrichment plant have had to be shelved because vital equipment could not be procured abroad. South African industry probably will not be in a position to produce the necessary equipment for many years. These penalties have not been so severe as to move the South Africans to take anything other than cosmetic steps to allay international concerns, however, and there is no reason to believe that these penalties will come to be perceived as more intolerable in the next five years. However, if additional penalties were developed—if France were to refuse to honor its contractual obligations to fabricate fuel elements for Koeberg, for example—the consequences could be much more severe, particularly if South Africa were unable to acquire suitable fuel-fabrication technology.

7. ***Cutting Back the Weapons Program.*** South Africa's use of this option is unlikely. For one thing, because its nuclear weapons work is secret, there would be little good will to be gained from cutting back part of the program unless at the same time the program's full extent were revealed. But such a revelation would likely arouse as much concern and suspicion as it allayed, or more. Even if Pretoria placed all nuclear production facilities under international safeguards, for example, foreign specialists would reason that a previously amassed secret stockpile of weapons-grade uranium probably was being maintained.[2]

[2] Even in the absence of such a stockpile, the current expansion of enrichment facilities would give South Africa a very short leadtime for the production of weapons-grade uranium.

8. There are nonetheless certain specific, immediate benefits South Africa could expect by signing the Nonproliferation Treaty (NPT)—and thereby effectively fixing the weapons option as a last resort. South Africa probably would expect eventually to obtain fuel for its research reactor, fuel for the Koeberg reactors, assistance for its commercial uranium enrichment program, and help in the construction of additional nuclear power stations. While this is considerable in itself, the South Africans probably would also hope to win concessions on other subjects from the countries that have most vigorously urged South African ratification of the NPT.

9. Why, then, has the treaty not been ratified? Basically, the South Africans are reluctant to make an international commitment when they feel they are not being accepted as a full member of the international community. More specifically, South Africa is concerned that the promised resumption of US nuclear assistance would be subject to future unilateral revision or suspension. Also, perceived fundamental problems with the treaty (or with the performance of other countries professing adherence to the treaty) may be an obstacle, in which case South Africa might be willing to adopt full-scope safeguards while steadfastly refusing to be a party to the NPT. Other possible reasons:

— The South African Government may have decided to sign the treaty once further progress is made toward the establishment of a ready-weapons option that can be preserved intact thereafter, the accumulation of a certain amount of highly enriched uranium being a possible prerequisite.

— South Africa may wish to maintain its option to become an overt nuclear weapons state, although the political and economic trade-offs associated with such an advancement of the weapons program suggest that such a course will never appear attractive to Pretoria.

— The South Africans may not yet be prepared to reveal the weapons-related capabilities of the Valindaba enrichment plant, a revelation that would result from establishment of suitable safeguard mechanisms.

10. ***Advancing the Weapons Program.*** Significant and rapid advancement of the nuclear weapons pro-

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gram would be difficult without risking its disclosure. A small group of scientists and engineers, however, could in secret experiment with high explosives to develop workable weapons designs. A few weapons or the finished components thereof might be constructed [redacted] although the existence of such physical evidence would be an additional security risk to the program. As a further advancement of the program, the Valindaba uranium enrichment plant could be used to produce more weapons-grade uranium. This, however, would mean that Valindaba could not simultaneously be used to build up a stockpile of reactor-grade uranium, which South Africa will need to fuel the Koeberg power plant complex if foreign enrichment services remain unavailable.

11. In light of the possible—and as yet unconfirmed—nuclear event on 22 September 1979, there has been speculation that South Africa may have conducted a clandestine nuclear test. If South Africa has tested a nuclear device—and we have no hard evidence upon which to make this judgment—it may elect to deny having done so while exacerbating uncertainty in the international community with respect to its nuclear intentions. If South Africa were to conduct a clearly attributable nuclear test, set up a new branch of the armed forces for nuclear weapons exploitation, or otherwise make obvious its nuclear weapons program, the government certainly would anticipate serious repercussions. The UN Security Council very likely would impose a mandatory embargo on all foreign inputs to South Africa's nuclear program, an event that would shut down ongoing power reactor construction programs. Broader economic sanctions might also be adopted which, even if not fully observed, might discourage foreign investment in South Africa. Aside from political repercussions, the impact of these actions on South Africa's economic interests would appear out of proportion to the gain in security that the government could reasonably expect from such overt nuclear activities.

12. We conclude, therefore, that the nuclear weapons program probably will remain clandestine unless South Africa were to perceive a drastic deterioration of its security situation. Once a ready weapons capability is assured, Pretoria may well be willing to sign the NPT or at least accept international safeguards, particularly if Western suppliers of nuclear-related materials were able to convince the South Africans that supply for peaceful purposes would be secure.

Political-Military Usefulness of the Nuclear Weapons Program

13. The South Africans have been deliberately ambiguous with respect to their nuclear weapons potential and goals. For example, the apparent ambiguity of some statements by South African Government officials disclaiming responsibility for the 22 September possible nuclear event monitored by the United States may serve Pretoria's strategic interests. Whether or not South Africa has tested a nuclear device, some of the recent statements fit into Pretoria's consistent policy of calculated ambiguity with respect to its nuclear goals and achievements. South Africa has now gained considerable credit for its nuclear weapons capabilities, without suffering the stigma of overt weapons testing. (b)(1)

14. Since neither neighboring states nor nuclear powers can be certain of the extent or intention of South Africa's nuclear weapons program, Pretoria may be in a position to extract concessions even if it is not actually in possession of usable nuclear weapons. The South African Government conceivably anticipated foreign intelligence detection of particular weapons-related activities, and then used the ensuing public discussions to imply what its nuclear weapons potential might be, without actually crossing the weapons production threshold.

15. South African nuclear energy officials announced in July 1979 that the republic would be able to produce its own Safari research reactor fuel within three years. Pretoria may use its capability to produce weapons-grade uranium to pressure Western and neighboring states for concessions during this period. While publicity regarding South Africa's nuclear capabilities has resulted in suspension or delay of Western nuclear contracts, the South Africans may believe that they can eventually restore Western cooperation on nuclear and other issues in return for actual or apparent curtailment of their weapons program.

16. The immediate political-military benefits from fabrication of nuclear weapons would be less tangible. Possession of nuclear weaponry, even if not publicly acknowledged, would bolster national self-confidence and give South Africans a symbol of their technical and military resourcefulness. Strategists in Pretoria may calculate that overt or covert demonstration of a nuclear capability would make the West less likely to undermine South Africa's security situation lest a desperate South African Government provoke a nuclear confrontation in the region or be succeeded by

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an unstable nuclear-armed black regime. Pretoria could also attempt to intimidate neighboring states, although this would risk provoking the Soviets into making new commitments to their clients in the region.

17. The probable nature of the weapons that South Africa could deploy would make them useful in a strict military sense only in extreme circumstances. For the next several years, the principal military threats to the government are likely to remain insurrection in black urban areas of South Africa and guerrillas operating from domestic or border-state rural bases. Nuclear weaponry would be inappropriate against such challenges. Nuclear weapons would be useful to South Africa only as an implicit or explicit threat against neighboring capitals and ports, against large concentrations of troops and equipment massed on its borders, or against nuclear weapons that might be deployed in the region.

18. In the more distant future, if the conventional threat were to grow, nuclear weapons would acquire more utility as a deterrent or retaliatory force. This capability may well be an important consideration for Pretoria's nuclear strategists, who likely fear that heavy Soviet military involvement against the republic could eventually wear down its conventional armed forces. Pretoria may calculate that a South African nuclear capability would give the Soviets serious pause, encourage the West to intervene on Pretoria's side, and, if all else fails, prove effective in combat.[3]

Implications for US Policy

19. ***Proliferation.*** Revelation that South Africa possessed nuclear weaponry would—as it would for any country—further weaken the international Nonproliferation Treaty system, undercut US nonproliferation policy, and encourage the acquisition of nuclear weapons by other countries. Other African countries might seek long-term development of nuclear weapons or—much less likely—stationing of superpower nuclear deterrent forces on their territory. Several states (such as Pakistan, South Korea, Iraq, Argentina, Brazil, India, Israel, and Taiwan) might feel fewer inhibitions about developing nuclear weapons or openly publicizing their nuclear weapons capabilities if South Africa suffered no serious international repercussions.

20. ***Nuclear Technology Embargo.*** Confirmation of South Africa's nuclear weapons program would also greatly increase pressures on the United States to strengthen international nuclear export controls. In one sense, South African weapons development might add important domestic and international support for the US position. Other nuclear supplier states might become more receptive to US nonproliferation policies. On the other hand, even though US nuclear cooperation with South Africa might cease, dependence on South African uranium or the desire to market nuclear-related products could well lead other countries to cooperate with Pretoria in peaceful nuclear programs after a few years.

21. ***Soviet Involvement.*** South African acquisition of nuclear weapons would alarm regional states and open an opportunity for intensified involvement in southern Africa by the Soviet Union and its associates. Neighboring African states might seek some form of protective guarantee from Moscow. While the Soviets almost certainly would not offer an explicit nuclear commitment to an African client, they could be counted on to issue generalized but ominous threats and to step up conventional arms and advisory assistance. The United States could be faced with growing regional polarization, intensified Soviet involvement, and diminishing influence with regard to both events and the protection of its interests in the area.

22. ***Multilateral Initiatives.*** Intensified pressure for UN sanctions would be virtually certain if South Africa were to become a nuclear weapons state. Following the revelation, for example, of US technical indications that a nuclear event may have occurred on 22 September 1979 in the southern hemisphere, many Third World and Soviet bloc nations immediately presumed that South Africa had developed nuclear weapons and hastened to denounce this activity. If further revelation should occur, Soviet bloc nations in particular would push for UN actions that could embarrass the West as well as hit at the South Africans. South Africa's recent expulsion from the International Atomic Energy Agency conference in India may have been based in part on negative reaction to allegations of South African nuclear weapons activities.

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