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The Nuclear Weapons History Project

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Introduction

The past seldom allows the luxury of neat stories with clear beginnings, middles and ends. History and its documentation are, rather, a reflection of the complexities of human relationships, interaction and (mis)communication. To expect that the enactment of the Promotion of Access to Information Act No. 2 of 2000 (PAIA) would result in researchers, academics or members of civil society being able to gain access to information that would allow us to sew up bits of our history into neat packages would be to have an incorrect expectation of the Act. How we record our lives and how states record their processes are necessarily imperfect. There is no Rosetta stone, no single source of information that will provide the answers to the multiplicity of questions we may have about aspects of our past. Indeed, knowing what questions to ask and who to ask them of is often the most difficult and most important part of finding information, as this chapter shows. In 2003 the South African History Archive (SAHA) embarked on an extensive process to determine the right questions, and who to ask them of, in pursuit of answers about South Africa's nuclear weapons programme.

Wits University academic Professor Garth Shelton was commissioned to identify the key unanswered questions about the apartheid nuclear weapons programme and to identify the government institutions from which the information could be requested. In that period, a total of 65 requests for information were submitted to ten institutions: the Department of Foreign Affairs, Armscor, the Department of Defence, the National Energy Commission of South Africa, the Office of the President, the Department of Trade and Industry, the Council for the Non-Proliferation of Weapons of Mass Destruction, the National Nuclear Regulator, Denel and the University of the Free State. The scorecard of responses by these institutions presents a dismal picture that inspires a number of questions. Was SAHA asking the right questions of the right institutions? If so, were the negative

responses the result of reluctance by the institutions to release documents in their possession? Were the institutions unable to process the requests because of a lack of capacity, or because officials were unfamiliar with the subject matter and the records contained in their archives? Or, was the lack of response because all the documents relating to the nuclear programme were in fact destroyed, as claimed by those involved in the nuclear programme and its termination?

This chapter considers a selection of key unanswered questions about the nuclear weapons programme. It refers to information that is already in the public domain that may provide answers (or where they may be found) and assesses the requests for information and the responses received. On that basis, it draws tentative conclusions about the usefulness of PAIA as a tool for uncovering and recording the past.

Finding the questions

Unlike the apartheid chemical and biological weapons programme that was scrutinised by the Truth and Reconciliation Commission (TRC), and, in even greater detail, during the marathon trial of its head, Dr Wouter Basson, the nuclear weapons programme has never been the subject of close public attention. The TRC did not investigate the nuclear weapons programme because of the former's very specific mandate — to investigate and make findings about individual cases of human rights abuses. In instances where there were no recorded human rights abuses related to a particular programme, or, more specifically, where there were no statements by victims or applications for amnesty by perpetrators (as was the case with the nuclear weapons programme), the TRC did not have an obvious or clear mandate to investigate. This resulted in the TRC failing, on the whole, to reveal the systemic nature of apartheid; although, to a large extent, it did succeed in revealing the aberrations and horrors perpetrated by apartheid's foot soldiers.

As a result, very little detailed information is available in the public domain about the apartheid government's nuclear weapons programme. There is information to suggest when and how the programme was initiated and the nature of the process that informed the change from a civilian nuclear programme to a weapons programme. Academics have considered the role of scientists and technicians in the development of the nuclear strategy, largely on the basis of the testimonies of those involved. The location of the facilities where uranium enrichment took place is known, as is the duration of the programme and the reasons for its termination. As a result of the successful application of the Freedom of Information Act of 1966 in the United States, there are also a significant number of documents revealing what US intelligence knew about the programme.[1] There are principally six categories of information about the nuclear programme:

- testimonies of those involved, including a short book self-published in 2003 by three of the men involved in the programme;[2]

- academic analyses;[3]
- US intelligence assessments made available through the National Security Archive;
- public statements by South African officials;
- press reports; and
- official accounts (such as that produced by the Atomic Energy Corporation).

Following a review of the available material, Shelton identified a list of almost 30 unanswered questions that ranged from technical issues about the amount of highly enriched uranium (HEU) South Africa produced to the nature of foreign assistance provided to the programme. For the purposes of this chapter, it would be impossible (and unnecessary) to provide a thorough audit of all of these; instead, I consider ten of the questions most likely to be of interest to a broad range of individuals and institutions. These are:

i. When was the project to build nuclear weapons initiated, and who was responsible for making the decision to militarise the programme?
ii. What were the key elements of South Africa's nuclear strategy?
iii. Were targets identified for the use of nuclear weapons?
iv. Which foreign countries were involved in the nuclear weapons production process or related activities?
v. What was the nature of the nuclear weapons that were produced, and how many were there?
vi. Was the Kalahari (Vastrap) nuclear test site ever used for a 'cold test', and why was the site reopened in 1987?
vii. Did South Africa conduct a nuclear test in 1979?
viii. Why did F.W. de Klerk decide to reveal South Africa's nuclear weapons programme in 1993, and did he make an honest declaration about the programme?
ix. How did the International Atomic Energy Agency (IAEA) verify the termination of the programme, and what were the details of the reports South Africa made to IAEA?
x. Were all the documents relating to the nuclear weapons programme destroyed?

In the following section I consider the requests for access to information made between 2003 and 2005 in relation to these ten questions, the responses received from the various institutions, and the information in the public domain that may shed light on these issues.

Looking for answers

i. When was the project to build nuclear weapons initiated, and who was responsible for making the decision to militarise the programme?

In the foreword by Professor Gideon de Wet to the self-published book by three men who were involved in the programme, Hannes Steyn, Richard van der Walt and Jan van Loggerenberg, the claim is made that no official documentary evidence of the programme was archived.[4] Indeed, it was the absence of such a documented history that led the authors of this book to record their own versions of events.

The book provides insight into the thinking of the South African government in regard to industrial and technological growth and development from the 1970s, when it was recognised that these processes were essential to the long-term economic prosperity of the country. It thus provides a context in which the decision to develop nuclear weapons was made. The authors argue that the implementation of a strategy to boost skills and knowledge in key technologies,[5] including nuclear technology, coincided with South Africa's isolation. South Africa felt abandoned by Western powers to deal with what was believed to be a formidable threat posed by the Soviets in the region. Steyn, Van der Walt and Van Loggerenberg state that the rationale for the development of nuclear weapons was that, since the country was unable to meet its security needs through the production and use of conventional weapons, '[a] more cost effective way had to be found to reduce the threat of a conventional conflict in the sub continent with the USSR as the major sponsor of one of the parties'.[6] While this provides perhaps some understanding of the factors influencing the decision to establish a nuclear weapons capacity, it does not answer the very specific question about when the decision was taken and who was responsible for making it.

In 2005 requests for information were made by SAHA to Armscor, the arms procurement agency, for the answers to these questions. The first request was for 'records regarding the initiation of nuclear weapons development';[7] the second was for 'nuclear weapons feasibility study/studies'.[8] In the case of both requests, Armscor stated that it had conducted a search, but concluded that the documents did not exist in its archives.[9]

As a result of the research conducted prior to submitting the requests, SAHA was in possession of an excerpt from a book entitled A Will to Win that had been commissioned by Armscor to record its achievements. According to the authors of this book, it was the outstanding achievements of the scientists working on the nuclear explosives programme that 'caused the government to consider the possibility of producing nuclear warheads'.[10] The committee that did so, called the Witvlei Committee, was chaired by P.W. Botha (the prime minister), and included the minister of mining (F.W. de Klerk), the minister of

Figure 1. Kentron Circle Nuclear Weapons Facility at Gerotek's Elandsfontein Vehicle Test Range.
Source: Institute for Science and International Security

Figure 2. Storage vaults for nuclear materials and nuclear warheads at Kentron Circle.
Source: Institute for Science and International Security

foreign affairs (R.F. 'Pik' Botha), the ministers of finance and defence, the chairman of Armscor (Commandant Marais), Dr Wally Grant of the Atomic Energy Board (succeeded by Dr Wynand de Villiers), and the director general of foreign affairs (Dr Brand Fourie) as secretary. It was this committee, according to A Will to Win, that was responsible for all nuclear-related decisions. Indeed, it would appear that the Witvlei Committee may have made the decision to pursue nuclear weapons in 1978: 'At the beginning of 1978 this Committee had to reflect on the progress and continuation of South Africa's nuclear capability. They voted for the continued development of the bomb'.[11] Steyn, Van der Walt and Van Loggerenberg also refer to a cabinet committee established by P.W. Botha to oversee the military programme in 1978:

> [W]ithin a month of coming to power at the end of September 1978, the new South African Prime Minister, Mr P.W. Botha, set up a Cabinet committee to oversee the military aspects of nuclear devices. At a meeting held on 31 October of that year it was decided that Armscor, the Defence Force and the Atomic Energy Board should start to work together intimately and prepare a program to initiate a nuclear weapons programme. This program was immediately classified as Top Secret.[12]

In any event, with the exception of one reference to the minutes of an ad hoc cabinet committee in 1990 that advised on the termination of the programme,[13] all other information contained in the Armscor document appears to be publicly available. Nevertheless, the reference to these minutes suggests that similar documents of relevance to understanding the decision-making process with regard to the nuclear weapons programme may still be in existence.

Peter Liberman identifies the problem of pinpointing a date and motive for the shift from a civilian explosives programme to a military programme in his article entitled 'The rise and fall of the South African bomb'.[14] He suggests that the difficulty in doing so may be a result of the shift from a civilian to a military programme having been gradual. He analyses the decision-making processes involved in the nuclear programme, drawing from open source information and interviews with key figures involved in the programme. One such person is Professor Andre Buys, whose recollection of the decision-making structures was as follows: 'The chief of the defence force, the minister of defence and the prime minister were involved in the decision-making. Authority to go ahead with the weapons programme was obtained from the minister of defence, at that time P.W. Botha.' Asked whether the prime minister, B.J. Vorster, would not have had to give approval for the shift, Buys said he believed that Vorster would have been consulted.[15]

The question for this book and this chapter is whether the application of PAIA resulted in the release of new information about the weapons programme. In this case, it did not. Nevertheless, the release of the excerpt from the Armscor publication adds a little more detail to what was known already and is therefore valuable. However, a huge effort and a great deal of time was invested by the requester to obtain the information. In this

case, the requester did not have a fixed or limited deadline by which the information had to be obtained. This is seldom the case for researchers, who usually work to tight deadlines set by publications or by funders. It is seldom that a researcher can afford to wait for three years for information that may or may not provide new insights.

ii. What were the key elementsof South Africa's nuclear strategy?

Much has been written about South Africa's nuclear strategy, based almost entirely on the testimonies of those involved in its development. Without any official documentation against which to measure these accounts, it is impossible to know whether the version of the strategy as recalled by the scientists and politicians is an accurate account of that adopted by P.W. Botha's government.

In August 2003 Armscor was asked for 'records regarding: nuclear strategy, plans for nuclear future, and analysis of past approach to nuclear programmes'. In 2005, when no results were obtained, the request was refined to ask specifically for 'Armscor's nuclear strategy document', believed to have been authored by Professor Buys. In response, Armscor submitted an affidavit by Gideon Smith, general manager: acquisition of Armscor, stating that the documentation relating to the nuclear programme had been destroyed *after inspection by IAEA* to ensure that it could not be used for purposes of proliferation in the future. Quite how the strategy document could contribute to proliferation is unclear. In addition, there is no evidence to confirm that IAEA inspected this document.

SAHA rejected Armscor's claim on the basis that other nuclear-related documents had been released by the Department of Defence (DOD) and that there was no need to destroy strategy documents to prevent future proliferation; however, no further information was forthcoming from Armscor.[16] The 'Armscor nuclear strategy document' does no more than describe, in somewhat vague terms, the shift in South Africa's nuclear programme from a focus on the development of non-military explosive devices to the development of the weapons programme.[17] In other words, it takes us no closer to a measure against which to assess the memories of individuals about the details of the strategy.

Professor Buys, an author of the nuclear strategy document approved by the minister of defence,[18] has explained the development of the nuclear strategy as he recalled it. He remembered that while the point of the nuclear weapons programme was to create a credible deterrent, there was much debate and disagreement between the Atomic Energy Corporation (AEC) and scientists about what exactly constituted such a deterrent. Some argued, he said, that a civilian explosive device that could be exploded on demand was sufficient. Others argued that this strategy amounted to a bluff and was not a credible deterrent. This was an ongoing debate throughout the project. Buys stated that the scientists and engineers argued that a credible deterrent had to involve a functional system:

'The military agreed with this argument and that's the basis on which we developed the programme.'[19] But a coherent nuclear strategy came later. This final strategy, according to Buys, was developed by the scientists and engineers who were concerned by the apparent lack of clarity about the nature of the deterrent on the part of politicians and military leaders. Buys also recalls there being some resistance to the nuclear weapons programme from the military, who saw it as a drain on military funds that did little to assist troops and commanders who were fighting in Angola.

While Buys is very clear, his memory of events and inter-agency tensions will inevitably be subjective. Indeed, the release of a document (see below) that shows that the South African Defence Force (SADF) was considering purchasing a system capable of delivering a nuclear warhead suggests that the SADF's resistance to the nuclear weapons programme may not have been as emphatic as Buys remembered, or that there were differences of opinion within the military about the utility of nuclear weapons. These are nuances that have historical relevance, but which will not be adequately understood and recoded in the absence of official documents.

Ultimately, as is well documented by academic scholars on the basis of interviews with scientists and engineers, the strategy that was adopted was aimed at gaining diplomatic leverage if Soviet or Soviet-backed forces threatened South Africa. Gradual disclosure of South Africa's nuclear capability, it was believed, would bring Western nations to the country's aid. A former IAEA assistant director for external relations, David Fischer, has questioned the notion that a nuclear deterrent would have brought the United States to the aid of South Africa in the event of the country being substantially threatened by a foreign military power. He argues that in the 1960s and 1970s South Africa was of geostrategic importance as a result of its location on the sea routes and its mineral resources. Reactions to information about the 1977 test site showed that there was international concern about South Africa's nuclear capabilities, but, he argues, 'within a few years, a South African threat to test would surely have been empty and indeed self-defeating'.[20] By the mid-1980s, at the height of visible resistance to apartheid, the United States was more likely to react to a test by increasing pressure on Pretoria to change rather than to act in support of the government:

> [O]nly in the event of a direct Soviet invasion of South Africa (and only if that was seen as threatening an important US strategic interest) was the nuclear test tactic likely to have succeeded — and in such a case it would probably have proved unnecessary. Test, or no test, the United States would have intervened.[21]

While this calls into question the reasoning of those responsible for determining the nuclear strategy and shows that they may have been deceived by their sense of South Africa's strategic importance to the United States in particular, it is not to say that the account given by the South African scientists is not an accurate reflection of their thinking

at the time. Nevertheless, if, as Armscor and Buys allege, the nuclear strategy document was destroyed, it is unlikely that proof that this was indeed the strategy adopted will be found. The problem remains that the organisation that was the custodian of the strategy document, Armscor, has denied its existence and the reasons given for the document's destruction are not entirely credible. Application of PAIA has not brought us any closer to knowing what the official position was.

iii. Were targets identified for the use of nuclear weapons?

If the nuclear strategy were indeed as described above, it would make sense that no targets were identified against which nuclear weapons would be used. That is because at no stage was the actual use of nuclear weapons part of the strategy. Yet, in the absence of documentary proof that this was the case, questions persist about whether targets were set by the military.

In an attempt to find answers, DOD was asked for 'records regarding Angola (Luanda) and nuclear strikes',[22] and 'records that refer to potential, and/or intended targets for nuclear strikes (whether defensive or offensive)'.[23] A request was made to the Office of the President for the same records.[24] Again, this is information of historical value, but which would have no obvious relevance to proliferators. In other words, if such documents existed, there would have been no need to destroy them in order to meet the non-proliferation objectives of the post-1993 governments. In terms of the first request, DOD responded that, despite extensive searches, no relevant documents could be found. The second request, however, resulted in the release of a document entitled 'The Jericho weapon system', which was arguably the most significant to be obtained by SAHA during the course of the project.

Dated March 1975, the document is an analysis and advisory note to the chief of the defence force from the chief of staff.[25] It reveals that the SADF was considering delivery systems for nuclear warheads in 1975, two years before the nuclear programme apparently shifted focus from peaceful nuclear explosives (PNEs) to military development. It also suggests an acceptance by the SADF that if South Africa did not produce nuclear warheads itself, they may be purchased elsewhere. In 1975 the SADF was engaged in an intense military campaign in Angola; a nuclear threat was believed to be a real danger. The SADF expressed particular concern that China may provide a tactical nuclear weapon for use against South Africa. Interestingly, in light of far more recent threat perceptions, the document notes that 'the Director of the United States "Arms Control Agency" maintains that nuclear weapons will become available to sub-national groups such as terrorist organisations within the next ten years'.[26]

The reasoning in this document differs markedly from that of those who developed the nuclear strategy. Indeed, while the Soviet Union or Soviet-backed forces were identified as

the most serious threat by the Nuclear Strategy Working Group, the SADF's analysis was that Western solidarity had been 'shattered'; that 'confrontation between the Free World and the Socialist Block has been replaced by consultation, thus lessening the danger of nuclear escalation'; and that the greatest threat was from sub-state groups supported by China. Despite the apparently differing assessment of the threat, the conclusion reached by the SADF was that a nuclear deterrent was necessary. The Israeli Jericho weapon system was considered an important addition to the SADF's arsenal because of its range and ability to deliver nuclear warheads. This is made clear from the conclusion reached by the chief of staff:

> In spite of the considerable cost involved in acquiring even a limited number of missiles with the Jericho weapon system, in view of the potential threat which faces the RSA in the foreseeable future, the possession of such a system will greatly add to our ability to negotiate from a position of strength.[27]

The release of this document raised hopes that other records dealing with issues relating to South Africa's nuclear posture, if not the nuclear weapons programme directly, had not been destroyed and could be located if the right questions were asked of the right institutions. However, it does not directly answer the question of whether South Africa had identified targets for the use of nuclear weapons. According to information obtained by Liberman through interviews with those involved in the nuclear programme, the strategy never went further than to 'detonate a nuclear bomb 1000 kilometres south over the ocean' or a '*threat* [emphasis added] to use a nuclear weapon in a battlefield situation'.[28]

The requests made to the Presidency met with no success. Indeed, failure by the Presidency to respond within the legally determined time frame resulted in SAHA issuing an internal appeal against the deemed refusal for records. This too met with merely an acknowledgement of receipt from the Office of the President, and no documents were forthcoming in the more than two years the matter was pursued. Indeed, it was not clear whether any attempt was made to find relevant records. It would appear as though the Office of the President brushed off the requests and did not regard them as warranting serious attention.

iv. Which foreign countries were involved in the nuclear weapons production process or related activities?

Records alleging that foreign governments assisted the South African nuclear programme date back to the mid-1970s. One such document is a complex organogram that appeared in the African National Congress' publication Sechaba in November/December 1975 linking German businesses to the supply of nuclear equipment to South Africa.[29] In 1993, shortly after De Klerk's announcement that South Africa had manufactured nuclear weap-

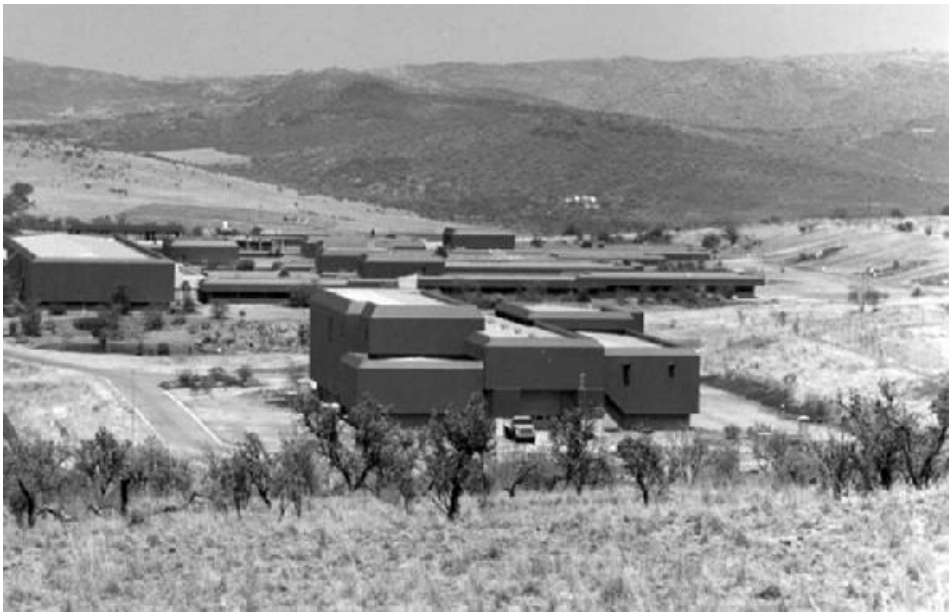

Figure 3. The ADVENA Nuclear Weapons Facility completed just before the termination of the Program.
Source: Institute for Science and International Security

Figure 4. Clean room in the ADVENA Nuclear Weapons Facility.
Source: Institute for Science and International Security

ons, it was reported in the South African press that researchers at the Stockholm International Peace Research Institute believed that Israel had helped the nuclear programme by providing expertise in exchange for uranium and permission to conduct nuclear tests in South Africa.[30] The same report referred to US assistance in the form of training for South African nuclear scientists. News reports in 1994 about the trial of Brigadier Johann Blaauw raised further questions about whether De Klerk had been honest in stating that South Africa had not been assisted by any other country in the development of its nuclear weapons programme. At issue was a series of deals brokered by Blaauw between Israel and South Africa that involved the exchange of nuclear materials and know-how.[31] In 1995 the Washington Report on Middle East Affairs reported that Israel and South Africa had cooperated for 30 years on nuclear weapons matters and referred to the natural alliance between two countries that were politically isolated and existentially threatened.[32]

In an attempt to obtain records relating to foreign assistance or involvement in the nuclear weapons programme, 11 requests were made to four different institutions: the Department of Foreign Affairs (DFA), the Department of Trade and Industry (DTI), DOD and Armscor.

DFA was asked for 'communications between Israel and South Africa regarding nuclear programmes and/or nuclear weapons'[33] and 'records pertaining to nuclear testing and Israel'.[34] DFA responded to these requests, noting the tremendous difficulty in obtaining records. An affidavit from Johan Kellerman, deputy director: nuclear and non-proliferation, described the steps taken to obtain records, which involved tracing the records from one archive to another. These efforts finally resulted in a find of a large cache of files that '[were] so voluminous it would require weeks — if not months — to adequately study all the documents contained in them'.[35] By March 2004 these problems had not yet been overcome; however, DFA made a number of documents available to SAHA, of which some referred to the nuclear collaboration between South Africa and Israel. While initially the documents provided to SAHA were masked in such a way as to make it impossible to determine their context, following a request by SAHA for clarity on the source and dates of the documents, a full set of unmasked documents were made available.

One of these documents is a telex (the author and recipient are not clear from the document) reporting on a question and answer session between Mike Richardson and US Ambassador Vernon Walters in Singapore in June 1986. Walters defended American policy towards South Africa, stating:

> We believe that by continuing the pressure rather than packing up our baggage and saying, 'to hell with you' — I personally happen to believe that if we did that the South Africans, in accordance with their traditions, would form their wagons in a circle and probably try to develop nuclear weapons and say, 'to hell with the world'.

He went on to refer to Soviet satellite information about the Kalahari test site and said that

he would not be surprised if South Africa had developed a nuclear weapons capability, correctly speculating that South Africa's strategy would be to use the nuclear weapons to force foreign intervention: an interesting snippet of information, but nothing that takes us any closer to answering the question that SAHA had posed. Indeed, a good portion of the documents made available by DFA are news clippings that are of limited utility because several are not dated and the publication name does not appear on the records.

Only one of the documents, a telex from the South African embassy in Tel Aviv to DFA, hints at the furore that must have resulted from a news report that appeared on the front page of the Israeli newspaper Yediot Ahronot on South African–Israeli nuclear collaboration in 1989. The report claimed that large numbers of Israeli experts and military officials had been cooperating with South Africa in the conduct of nuclear tests from 'Bofat' Island in the Antarctic since 1985. The report also alleged Norwegian involvement in the collaboration.[36] Yet, in the absence of any more information, this too is nothing more than an interesting aside.

DTI was asked for 'records pertaining to nuclear devices exported',[37] 'records relating to agreements between Israel and South Africa relating to technology transfers relevant to nuclear weapons'[38] and 'records relating to technology transfer and assistance between South Africa and Germany relevant to nuclear weapons'.[39] DTI responded that it did not have any records of relevance to the requests, and it referred SAHA to the Department of Minerals and Energy (DME), which then failed to provide a response. SAHA lodged an internal appeal against the initial refusal by DTI on several grounds, about which it informed DME. Despite numerous efforts to get DME to address the requests, no response was forthcoming.

The one indication that documents revealing the relationship between Israel and South Africa still exist came from the refusal of DOD to provide 'records related to agreements between South Africa and Israel regarding co-operation in nuclear weapons and related areas',[40] 'navy records regarding Israel and use of/interaction with Simonstown Naval Base'[41] and a '1974 military cooperation agreement between South Africa and Israel'.[42] Not only were the requests refused, but DOD also refused to confirm or deny whether relevant documents existed.[43] The department relied on section 41 of PAIA to deny access to documents, which allegedly required protection because they contained information supplied in confidence to South Africa by another state and related to information held for intelligence relating to another state used by South Africa in the conduct of international affairs. What remains unclear is why the current South African government felt bound to honour confidentiality agreements made by the apartheid government. Certainly, the current government has been very concerned to show itself to be a fair and honest player in international affairs. Nevertheless, it seems inexplicable that it would feel bound to protect nuclear dealings between South Africa and other states that were made more than twenty years ago. According to Defence Intelligence, a memorandum of

understanding (MOU) between South Africa and Israel defines what information could be released and what could not.[44] SAHA obtained a copy of the MOU in 2007 pursuant to a request; however, masking ensured that it revealed little about the substantive issues being protected.[45]

Some years following the refusal of access, SAHA was approached by a researcher requesting assistance to pursue records that he had independently requested from DOD regarding substantially similar subject matter. Interestingly, a large proportion of these requests were granted to him without masking. In discussions with DOD officials, they could not provide any clear explanation as to why SAHA's requests had been refused some years earlier; however, they conceded that they could not now prevent access. One factor that may have led to the release was that the researcher had identified from DOD's lists which files he wished to access.[46] Nevertheless, the documents failed to reveal any substantial information relating to the key questions pursued by the project.

Box 4.1: Obtaining records of the nuclear weapons programme

Obtaining records concerning the South African nuclear programme remains one of the most difficult tasks facing any researcher interested in apartheid era history. Finding documents relating to South Africa's alleged nuclear collaboration with other countries is even more difficult. Many of the key figures involved in the nuclear programme claim that all records were destroyed prior to F.W. de Klerk's 1993 announcement of the programme to Parliament and South Africa's eventual accession to the Nuclear Non-Proliferation Treaty.

However, some documents do still exist. At the central repository of the National Archives of South Africa there are several boxes of records detailing Pretoria's uranium sales to a variety of countries during the 1960s, including Israel. These documents are unclassified and available to researchers willing to wade through pages of extraneous information; they provide an early glimpse of South Africa's nuclear policy prior to the advent of the nuclear weapons programme. The DFA archive in the basement of the Union Buildings contains a smattering of documents that touch on the issue of nuclear cooperation. These files do not include any discussion of nuclear weapons collaboration, but there is a wealth of information on Israeli–South African scientific partnerships and exchanges under the auspices of the Council for Scientific and Industrial Research, including visits by nuclear scientists. These archives, up to the year 1986, were made available to me for extensive perusal without a PAIA request.

Another key source is the South African National Defence Force (SANDF) Documentation Centre. Unfortunately, access to SANDF files is far more difficult, and a PAIA request is no guarantee that they will be released. In 2005 I was permitted to consult a series of indexes listing military intelligence files by subject. I used these

indexes to create a spreadsheet, which formed the basis of the PAIA request I filed in March 2005. Numerous redacted files were finally released to me in July 2006 after many complaints and a substantial reduction of the scope of my request. Other files were subsequently shipped to me in September 2006. These files cover a range of subjects, and the vast majority focus exclusively on conventional armaments and military intelligence cooperation between Israel and South Africa. However, there are a few unredacted documents discussing South Africa's chemical and biological weapons doctrine, as well as a set of documents detailing the initial arms deals negotiated by the Israeli and South African governments in 1974 and 1975, including references to nuclear weapons. Armscor refused to provide actual contracts or other records beyond raw financial data. This data is not specific enough to discern whether nuclear transactions occurred.

The fact that two major documents (the 'Jericho memorandum' of 31 March 1975 and the 1987 judgment from *The State v. Johann Blaauw*) are now in the public domain make it easier to write a coherent, albeit incomplete, narrative of this intensely secretive and controversial relationship. Ultimately, any scholar interested in this topic will have to cross-reference his or her declassified written sources with oral history interviews and other existing documents in order to piece together the puzzle of South Africa's nuclear cooperation with Israel and other countries.

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Requests to Armscor for 'records relating to technology or assistance between South Africa and Germany relevant to nuclear weapons',[47] 'records relating to commercial dealings with foreign countries and nuclear weapons'[48] and 'records related to Jericho Missile'[49] met with the same answer noted before: Armscor no longer had any documents relating to the nuclear weapons programme.

Although it is clear from DOD's response that the South African government is concerned that revelations about international links to the nuclear weapons programme could have a negative effect on current foreign relations, the argument has been rejected by critics. The same concern was raised by DFA during the Truth and Reconciliation Commission investigation into the chemical and biological warfare programme. In that instance, documents were discovered (and subsequently provided to SAHA) that revealed the nature of interactions among the United States, the United Kingdom and South Africa about the termination of the programme. While for a short time these revelations may have had uncomfortable consequences for South African diplomats, they did not cause permanent damage to foreign relations.

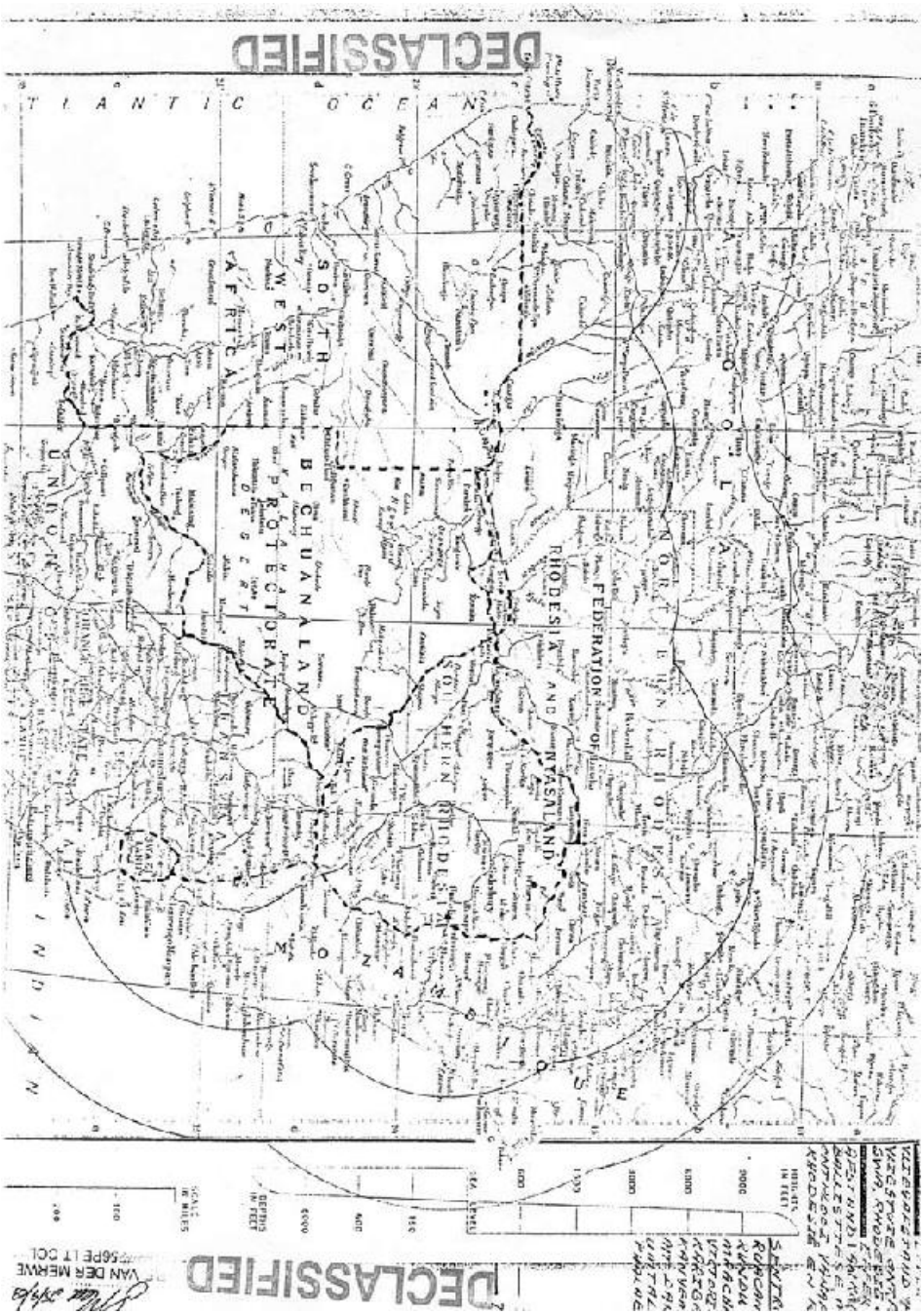

Figure 5: A map that is part of the first official record documenting South Africa's former Nuclear Weapons Program to be released since the Apartheid Government's pre-1994 disclosures. It concerns South Africa's consideration in the mid-1970's of acquiring the "Jericho Missile" and potential launch trajectories.

If, as is suggested by the DOD response, there are documents still in existence that reveal the nature of foreign involvement in the nuclear programme, it is vital to the historical record that some arrangement is made for their release. The existence of documents confirming Israeli assistance to the South African nuclear weapons programme was given further credence in a statement made by Deputy Minister of Foreign Affairs Aziz Pahad to an Israeli newspaper, Haaretz, in 1997 that he had 'numerous reports on relations between academics from the two countries and on [nuclear] cooperation between the two to develop specific equipment'[50] of a military nature. Given Pahad's candidness about the cooperation and his admission that he had documents to prove it, the responses from government departments to requests for information are even more difficult to comprehend.

v. What was the nature of the nuclear weapons that were produced, and how many were there?

Figure 6: RSA-3 Missile, South African Air Force Museum, Swartkops AFB, Pretoria.

In 1993, when De Klerk made the announcement that South Africa had developed nuclear weapons, he spoke of the existence of six devices. Yet there remained suspicion in some quarters that smaller, tactical nuclear weapons had been developed and not revealed. There were even allegations that one or more of these smaller devices were unaccounted for and had landed in the hands of extreme right-wing groups. While these allegations are unlikely to have been true, they will persist in the absence of evidence to the contrary. SAHA attempted to locate records relevant to this question from four institutions: Armscor,[51] the Nuclear Energy Corporation of South Africa (NECSA),[52] DOD[53] and Denel.[54]

Armscor's response was the same as for all previous requests submitted: that all documents relating to the nuclear programme had been destroyed. This was despite the refusal being followed by a letter from the Wits Law Clinic rejecting the grounds for

refusal, and letters from the requester following up. In 2005, after gaining no ground towards resolution, Armscor stopped responding.

NECSA's response was no less frustrating, but certainly more revealing. Asked for a report by Dr N. von Williegh to IAEA about the programme, NECSA stated with some measure of irritation:

> [A]s you were previously informed, this confidential report by Dr N. von Williegh was submitted to the International Atomic Energy Agency in terms of international nuclear safeguards agreements. I herewith confirm that we are still awaiting clearance from the IAEA to make this report available to you. We have also, in the mean time, received instructions from the Department of Minerals and Energy that all requests about the weapons programme must be cleared with the Minister as well. Such clearance with regard to your request will be requested as soon as we receive a positive reply from the IAEA.

By August 2004, following letters from SAHA, there was still no response from NECSA, not even confirmation or denial that the document was in its possession. A formal letter of complaint about NECSA's failure to respond was sent by SAHA in July 2005 to the South African Human Rights Commission and to the public protector; this too failed to yield any positive results.

NECSA's shifting of responsibility to IAEA is curious. The document in question was written by South Africa to satisfy the requirements of the IAEA safeguards agreement. It is therefore curious that permission would need to be granted by IAEA for the release of the document. It is hard to imagine that IAEA would be required to grant South Africa permission to release its own document, particularly one that does not contain detail that could be seen to pose a proliferation risk. Indeed, the document is already in the public domain. This would suggest that NECSA's response was nothing more than a cynical attempt to delay the release of the document. Whether this was because the agency is honestly concerned about violating its international obligations is not clear.

What made the request particularly interesting is that SAHA had already obtained a copy through the research it conducted prior to submitting the requests. In submitting the requests, it aimed to ascertain what NECSA's position on the document was. Given that NECSA failed to substantively respond to the request, the request revealed little about NECSA's position in regard to the transparency of the nuclear weapons programme.

Denel responded to all requests with a standard refusal on the basis that all documents were destroyed, although attempts to obtain records about the destruction process also met with no success, despite extensive follow-up.

Ultimately, the question about the number and nature of weapons produced is answered in some detail by the Von Williegh document of May 1993. It refers to seven nuclear weapons devices. The record is as follows:

> [T]he first nuclear device produced by the AEB in 1978 and provided with HEU in November 1979 under the code name VIDEO, was transferred for temporary storage on the 15th of that month to Ammunition Depot 92 of the SA Defence Force …. The device was transported to the Circle facility in April of 1982 where the HEU was replated. It was renamed MELBA. The first Armscor device was completed in December 1982 at the Circle facility under the code name HOBO, which was later changed to CABOT.

Table 4.1, which lists the seven devices, provides a little more detail.

Table 4.1: South Africa's nuclear devices

Name of device	Front or rear part	Date of production of device	Remarks
Video/Melba		November 1979	Replated 1982
Hobo/Cabot		December 1982	HEU later reused in 503[55]
306	Rear Front	June 1988 June 1989	Upgraded, pre-production model
501	Front Rear	August 1987 June 1988	Production model
502	Rear Front	November 1988 October 1988	Production model
503	Front Rear	November 1988 March 1989	Production model
504	Rear Front	March 1989 March 1989	Production model

Source: N. von Williegh, 1993, 'A brief overview of the development of nuclear explosive devices in South Africa', Atomic Energy Corporation of South Africa, May, p. 6

In the document, Von Williegh also addresses the issue of whether South Africa considered the development of a cannon and implosion-type fission device and a thermonuclear device with a fission detonator. It is stated that while ministerial approval was granted for development work on both types of devices, the nuclear strategy and the decision to limit the number to seven fission devices meant that the implosion technology remained underdeveloped.

In light of the information contained in this document, the response from NECSA is confusing. Is the agency being overcautious in its responses to requests for information because it is worried that it may inadvertently or consciously violate international agreements, or is there some other reason for its recalcitrance?

vi. Was the Kalahari (Vastrap) nuclear test site ever used for a 'cold test', and why was the site reopened in 1987?

One of the key questions in relation to the South African nuclear programme is whether the Kalahari test site (known as Vastrap) was intended for testing a nuclear weapon device. The answer to this question appears to be answered in the document by Von Williegh, who asserts that the test site was established to test a full-scale explosive device (not with HEU) that had been completed in 1977. According to Von Williegh, and confirmed by Steyn, Van der Walt and Van Loggerenberg, the test site had been identified and approved between 1973 and 1974. By 1977 two test shafts had been drilled and were ready for the tests. Since at that time no HEU was available for the test, SADF decided to go ahead with a cold test to establish the effectiveness of the 'logistic (the device was 4.4m long, had a diameter of 610mm and weighed 3 450kg), diagnostic and data acquisition systems'.[56] However, international attention on the site led to it being abandoned in August 1977, when the shafts were sealed. Confusion about whether the site was developed to test weapons or civilian explosive devices was understandable, given that the decision to change the nuclear programme's focus from the development of PNEs to the development of nuclear weapons for deterrent purposes took place in the same year, 1977.

According to Steyn, Van der Walt and Van Loggerenberg, the 1977 underground test was of an explosive device for civilian application in mining, rather than a test of a military nuclear device. Indeed, the authors appear to suggest that had the test site not been detected and the programme towards the development of civil nuclear devices not been halted, the military programme might not have started at that point.[57] Fear of detection of this first test detonation also resulted in a programme to reduce the size and yield of a device, such that

> [it] could be shipped to the site and detonated in a very short period of time. The only data that could be obtained by these tests were the measurement of the explosive yield and the detection of a possible radio-active release …. Preparations for a first fast deployment test were ready within six months of the detection of the site.[58]

Professor Buys recalled his own opposition to the Kalahari test on the basis that it was not necessary and would create the impression that South Africa had a weapon at a time when it did not, and thus create the possibility of a nuclear response from the Soviet Union.

Requests for information about the test, and particularly for information about whether Israel was involved, made to DFA,[59] Armscor[60] and NECSA[61] were fruitless, bringing us no closer to an official version of events. Once again, non-proliferation concerns in relation to the documents seem baseless.

vii. Did South Africa conduct a nuclear test in 1979?

In 1979 one of the satellites deployed in support of the Limited Test Ban Treaty of 1963 to detect nuclear explosions in the atmosphere detected a flash over the Indian Ocean that suggested that South Africa may have exploded a nuclear device. The evidence was, however, inconclusive, and those involved in the nuclear programme vehemently denied South African involvement in any such explosion. In 1993 Waldo Stumpf told the Saturday Star that '[i]f there was a nuclear explosion [in 1979], South Africa was definitely not involved'.[62] There is no reference to the alleged test in the Von Williegh document, suggesting that it was not reported to IAEA. Yet scientists from the US Los Alamos nuclear facility were convinced by the satellite data and released a press report in 1997 claiming that their view that South Africa did detonate a nuclear device had been vindicated by a statement by Aziz Pahad in which he confirmed that a nuclear test had taken place.[63]

Despite Pahad's statement, it is obviously important for historical reasons to obtain documentation that could affirm or refute the truth of these claims. Again, in light of the openness that Pahad demonstrated about both the test and Israeli cooperation, the refusal of documents seems inexplicable. Yet the documents obtained in response to several requests to DFA fell far short of the documentary confirmation sought. SAHA obtained:

- a letter dated 6 June 1985 from the South African ambassador to the United Kingdom's Director General of Foreign Affairs enclosing newspaper articles about the alleged nuclear test in 1979;
- a letter dated 24 May 1985 from the South African ambassador to the US director general of foreign affairs regarding '[r]enewed Allegation of SA Nuclear Explosion in 1979';
- a one-page letter dated 24 June 1985 from the executive chairman of the Atomic Energy Corporation of South Africa to the South African director general of foreign affairs regarding the '[r]enewed allegation of SA nuclear explosion in 1979';
- a letter dated 7 January 1987 from the general secretary of the Scottish Campaign for Nuclear Disarmament to the South African consul in Glasgow regarding Marion Island, indicating concern about a report of a runway planned for the island for use as a South Atlantic nuclear weapons testing base and alleged visits of South African and Israeli military advisors to the island; and
- a response to this letter from the South African consul in Glasgow on 19 January 1987 denying that such a runway was planned or that the island would be used as a testing base.

While each of these documents is relevant to understanding the history of the nuclear weapons programme, the fact that there was no indication of whether the documents formed part of a series held by DFA made it almost impossible for researchers to take the

matter any further through requests for additional information.

viii. Why did F.W. de Klerk decide to reveal South Africa's nuclear weapons programme in 1993, and, perhaps more importantly, did he make an honest declaration about the programme?

On 24 March 1993 De Klerk admitted to Parliament that South Africa had stockpiled nuclear weapons that had been dismantled prior to the country's accession to the Nuclear Non-Proliferation Treaty (NPT) on 10 July 1991 and its signature of a Comprehensive Safeguards Agreement with IAEA on 16 September 1991. Tienie Fourie, a former DFA official, is recorded as telling Garth Shelton that the timing of De Klerk's announcement was determined by a planned 'surprise' inspection by IAEA during which inspectors would have discovered evidence of the weapons programme. Such a discovery would have been extremely embarrassing for the South African government. This information led SAHA to request from DFA 'documents President De Klerk used to make [the] decision regarding revealing/dismantling the nuclear weapons programme',[64] and 'communications between Tienie Fourie and SA revealing the nuclear weapons programme and/or IAEA inspections'.[65] SAHA also requested 'communications between SA and the USA regarding dismantling of nuclear weapons'.[66] SAHA's requests to DFA (not limited to the requests noted above) resulted in the release of 21 documents (or parts of documents), but none provide or even suggest an answer to this question.

Buys and Fischer provide some detail. Fischer answered the question by referring to the obvious fact that by 1989 the security threat to South Africa was no longer sufficient to warrant a nuclear deterrent, and, indeed, the existence of the weapons posed a threat to South Africa's international relations. He describes the closure of the programme in some detail, and appears to conclude that the programme ended in an honest fashion:

> De Klerk ordered the decommissioning of the pilot enrichment plant that had made the fissile material for the devices and the conversion to civilian use of the factory that had manufactured the devices. When all the fissile material had been recovered from the devices, and returned from Armscor to the custody of the South African Atomic Energy Corporation, South Africa formally acceded to the NPT, on July 10, 1991. By September 16, it had promptly concluded the required full-scope safeguards agreement with the IAEA. Since then the IAEA has carried out 115 inspections in South Africa in order to verify the completeness of the initial report submitted by South Africa on the amount and location of all nuclear material in the country. The IAEA Board of Governors and the general Conference have been informed that the inspections 'found no evidence that the list of facilities and locations of outside facilities provided by South Africa in its Initial Report … was incomplete'. Nor was the IAEA Secretariat 'in possession of any other information suggesting the existence of any undeclared facilities or nuclear material'.[67]

PERMANENT MISSION OF SOUTH AFRICA
TO THE INTERNATIONAL ATOMIC ENERGY AGENCY

SANDGASSE 33, 1190 VIENNA
TELEPHONE 31 69 93 SERIE

137/10/26.

9/2/2
JEF/ems
29 June 1993

[redacted]

On 24 March this year I wrote to you on the instruction of my Government, inviting the IAEA to verify inter alia that South Africa has fully terminated its nuclear weapons programme, and that all the nuclear material has fully been accounted for.

Since then, two teams of nuclear weapons experts visited South Africa as part of this exercise. As was the case since South Africa acceded to the NPT and signed the Safeguards Agreement with the IAEA, South Africa offered all possible assistance to these teams. This was done in a spirit of ongoing co-operation and transparency and in acknowledgement of the sometimes difficult task the IAEA has in ensuring nuclear non-proliferation in the world

Today, in the same spirit of co-operation, I wish to invite - and indeed urge - the IAEA to complete its verification exercise in South Africa as soon as possible, and at the latest in time for the September meeting of the Board of Governors. South Africa therefore expects a final report on both its terminated weapons programme, as well as the completeness of its nuclear inventory, to be presented to the forthcoming Board Meeting which is due to start on 21 September 1993.

[redacted]
Director-General
International Atomic Energy Agency
P.O.Box 100
1400 Vienna

Figure 7. Correspondence dated 29 June 1993 from the South African Mission of the International Atomic Energy Agency (IAEA) to the IAEA requesting finalisation of verification process confirming South Africa had terminated its nuclear weapons programme, the only country ever to do so. It is unclear why the names of the sender and recipient have been masked.

Buys's recollection and analysis were more nuanced. He argued that, given the reality that a significant number of people knew about the programme in detail, destroying the documents was no guarantee that someone would not eventually speak out and thus undermine De Klerk's credibility. He said that the scientists advised De Klerk to invite the international community to verify and audit the closure of the programme.[68]

On the question of whether the South African government held back information about the nuclear weapons programme, Fischer concludes that the only point one can make is that IAEA was

> reasonably assured that the inventory of nuclear material declared by South Africa [was] complete; the IAEA's 115 inspections have not discovered anything that would suggest otherwise, and it's difficult to see what incentive the government, knowing that its hour was coming, would have had in concealing any HEU.[69]

In a speech made by the South African ambassador to Japan at the Second United Nations Conference: Towards a World Free of Nuclear Weapons, the process of dismantling the nuclear weapons programme was laid out:

Events leading to De Klerk's 1993 announcement were preceded by the establishment of a steering committee of senior officials who were appointed by the then State President of South Africa in November 1989 to investigate the possibility of dismantling the nuclear programme. The officials were, inter alia, tasked to:

- dismantle the devices under controlled and safe conditions;
- melt and recast the High Enriched Uranium (HEU) from these devices and return it to the AEC of South Africa for safekeeping;
- decontaminate facilities fully and return severely contaminated equipment to AEC;
- destroy all hardware components of the devices as well as technical design and manufacturing information;
- advise the government of a suitable time table of accession to the NPT, signature of a Comprehensive Safeguards Agreement with the IAEA and submission of a full and complete national initial inventory of nuclear material and facilities as required by the Safeguards Agreement; and
- terminate the operation of the Pilot Enrichment Plant at the earliest opportunity.[70]

The reasons given in this speech for the termination of the nuclear weapons programme are those echoed throughout the literature. They include the changing political circumstances both in South Africa and internationally that resulted in a dramatic reduction in the threat perceptions of the government, the tremendous cost of the programme, and (not mentioned in this speech) concern that the nuclear weapons would end up in the hands of an African National Congress (ANC) government. Ironically, it could be argued that the

moral advantage gained by South Africa through the voluntary termination of the nuclear programme has given the ANC government the basis on which it can play a prominent and important international role as far as nuclear weapons control is concerned. Augmented by the credibility of those in the ANC who lobbied against the apartheid nuclear weapons programme during the struggle against apartheid, South Africa is an important international voice on nuclear issues and has played a significant role in the establishment of Africa as a nuclear weapons-free zone. Perhaps the present government is concerned that additional details about the programme could undermine its hard-earned credibility.

ix. How did IAEA verify the termination of the weapons programme, and what were the details of the reports South Africa made to IAEA

Of all the questions posed in this chapter, the question of verification by IAEA is perhaps the one that could have been expected to result in the most substantial responses. While reports by states to the IAEA remain confidential, it is difficult for analysts to understand why details of the verification process would be secret at this stage. Yet requests for documents from NECSA, Armscor and Denel met with the same results as those recorded above.[71] Only a query to DFA met with a positive result in the form of a letter dated 29 June 1993 from the Permanent Mission of South Africa to Dr Hans Blix, director general of IAEA, regarding verification of South Africa's nuclear weapons programme.[72] This letter reiterated South Africa's request for IAEA to verify that the nuclear weapons programme had been terminated. It noted that two teams of nuclear weapons experts had already visited South Africa, and requested that the verification process be completed by the September 1993 meeting of the IAEA board of governors. It contains no details of what was involved in the verification exercise. It is clear from the letter (authored by Jannie Roux) that South Africa was intent upon having the verification exercise completed as soon as possible. Once again, the existence of this document strongly suggests that other similar documents do exist, and there appears to be no convincing reason for them not to be placed in the public domain.

x. Were all the documents relating to the nuclear weapons programme destroyed?

There are several answers to this question — certainly, there are strong indications that the documents held by former members of the programme that related to the details of the programme and the devices, as well as the nuclear strategy, were in fact destroyed in a process described by Buys in some detail in an interview in August 2006 that is reproduced in full in an annexure to this chapter. However, the fact that the application of PAIA

137/28 121

Atomic Energy Corporation of South Africa Limited

Office of the Executive Chairman

Pretoria 0001 ≠3-2147SA ☎ International +27 12 National (012) 28-4775

AEK AEC

Reference No.

D.1070

24 June 1985

The Director General
Department of Foreign Affairs
P O Box 152
PRETORIA
0001

[redacted]

Dear Sir

RENEWED ALLEGATION OF SA NUCLEAR EXPLOSION IN 1979
Your ref. 137/28 (253) of 85051414u19 of 17 June 1985

Thank you for the documentation attached to your letter referenced above.

I agree with the assumption that the report of the WOA was released to coincide with the debates on anti-South African bills in Congress. The so-called "new" evidence which purports that high concentrations of radioactive iodine were found in Australian sheep thyroids after the alleged "event", is highly suspect in our estimation. However, no comments are necessary or indeed advisable - we will just have to "ride out the storm".

Yours sincerely

[redacted]

EXECUTIVE CHAIRMAN

27 -06- 1985

[redacted]

Figure 8. Correspondence dated 24 June 1985 from South Africa's Atomic Energy Corporation to the Director General of Foreign Affairs, with respect to 'hanlding' allegations relating to South Africa's nuclear weapons programme in the broader context of international efforts to secure comprehensive sanctions against South Africa.

resulted in the release of several documents of relevance suggests that others still exist and managed to escape destruction. What remains most confusing is the apparent inability of Denel, Armscor, NECSA or DOD to be able to provide confirmation or details of the destruction process: DOD confirmed in 2006 that it was not able to locate the disposal authority ordinarily required prior to destroying documents, but alleged that the person responsible for destroying them had taken it.[73]

Conclusion

The fact that South Africa voluntarily terminated its nuclear weapons programme has provided the basis for the current government to engage internationally in discussions about nuclear non-proliferation and to play the role of honest broker in Iraq and to some extent in the controversy around the Iranian nuclear programme. This may mean that, as far as the Mbeki government is concerned, the information that is already in the public domain, however limited in detail, is sufficient to meet its foreign policy requirements. Indeed, it could be argued that any more detailed revelations, particularly about the nature and extent of foreign assistance to the South African nuclear weapons programme, would not necessarily serve the best interests of current foreign relations.

Nevertheless it would seem obvious that a detailed analysis of the factors resulting in the decision to develop nuclear weapons, as well as to terminate the programme, would allow for an even more positive role to be played by the country in international nuclear affairs. Indeed, analysts would be justified in believing that if South Africa is to play a useful role internationally in sharing its nuclear weapons experience in support of the voluntary termination of other nuclear weapons programmes, documentary evidence of the nature of the strategy would be important; but this has not proved to be the case.

This chapter has shown that the application of PAIA has resulted in very little new information being placed in the public domain. Indeed, the value of documentation obtained in terms of revealing important new details of the nuclear weapons programme required a disproportionate investment of time and energy by the applicants. The unfortunate conclusion, therefore, is that PAIA is a blunt instrument for researchers attempting to obtain documents from government departments. There are a number of reasons for this being the case. The experiences of SAHA suggest that there are few government institutions that have, since the demise of apartheid, expended time and resources on archiving and indexing documents from the past. Capacity constraints certainly play a role in making it difficult for institutions to trawl through what must be large caches of documents from the past. The fact that DFA has moved from one building to another added to the difficulty it faced in finding the information sought by applicants. Yet, this did not appear to be the problem faced by Armscor, DME, the Office of the President or DTI. While DME and NECSA appeared to be concerned about the political implications of releasing documents in their possession, their strategy and that of the Office of the President appeared to be

to obfuscate and delay their responses until the applicant ran out of steam. Unless there is a clear political advantage to be gained by the institutions in searching for and making documents available, or unless requesters have considerable resources to litigate requests, it is unlikely that PAIA will become and effective tool for those attempting to analyse and record the past.

Annexure A: Approved notes from an interview with Professor Andre Buys

University of Pretoria
14 August 2006

The intention of this interview, conducted by Chandré Gould, was to obtain clarity on the status of the official documents of the South African nuclear weapons programme.

Buys: During all phases of the programme, from the explosives programme to the weapons programme and finally the dismantlement, all the documents relating to the programme were top secret. Top secret security clearance was required of the staff. When the programme changed from a civilian explosives programme to a weapons programme, security became more comprehensive. During the explosives programme at AEC, security clearance [of staff] was done through the police. The process was much less comprehensive than the security clearance process later, when it became a military programme. Then, the security restrictions were far more serious.

As an aside, Buys said that he believed that in the 1970s the United States had a South African informant in the civilian nuclear explosives programme.

In 1970 we started with the nuclear explosives programme. At that time, all the documents and reports were classified top secret, a record was kept of all documents and these were kept on file by the nuclear engineering division of the Atomic Energy Board (AEB). I am not 100 per cent sure, but the records were probably physically kept by the secretary of the head of that division of the AEB. But document control was also left to the discretion of individuals who were working with them, and the documents were kept in their offices. That was before it became a nuclear weapons programme. In retrospect, one could say that the documents were treated casually, especially in comparison to the very strict system that followed later.

Interest in nuclear weapons came after the disclosure of the test site in 1977. In 1974 we started preparing the test site. The test site was in the Kalahari, miles away from anything else, and the AEB had no security personnel out there. There was a need for some security at the site, and that's the first time that the SADF was informed about the nuclear

explosives programme. At that stage, the contact was not at the highest level; it was the quartermaster general whom the AEB dealt with to get security personnel at the test site. The military provided the protection and personnel control on site. The SADF only became directly involved with the programme when we moved to the Circle site. That's when questions started about document protection. Then we were far more security conscious. Armscor security personnel were responsible for document control; some of them were civilians and some had military backgrounds. But there was full-time staff to look after security. Now security became a major priority.

At the beginning, when we started talking about a nuclear weapons programme for deterrence, some people at the AEC said that we already had a deterrent, that a civilian explosive that could be exploded on demand was sufficient, so there was no need to go any further. But by taking that approach, you are asking the government to bluff, and that bluff could be exposed. In other words, we would not have a credible deterrent taking that route. That was an ongoing argument throughout the life of the programme — when was the deterrent sufficiently credible?

When we started to work (at Circle), we argued that to be credible there must at least be a functional system, even if we knew that we were never going to fight with the weapons. The military agreed with this argument, and that's the basis on which we developed the programme.

When it became a military programme, it was run from the highest level. The chief of the defence force, the minister of defence and the prime minister were involved in the decision making. Authority to go ahead with the weapons programme was obtained from the minister of defence, at that time P.W. Botha.

Gould: Would Vorster not have had to give the go ahead?

Buys: He would have been consulted.

Gould: At what level, or where would the meetings about the programme have taken place? Would it have been in the State Security Council?

Buys: Probably not at the Security Council level, because the Security Council kept minutes and not all Security Council members would have known about the programme. It was only an inner group of cabinet members who would have known about it, right up to the end. It would have been the minister of defence (P.W. Botha), the minister of foreign affairs (Pik Botha), the minister of finance (Barend du Plessis) and the minister of minerals and energy affairs, at that time, F.W. de Klerk.

Gould: So De Klerk knew about the programme from the start?

Buys: Yes, he knew about it from the early 1980s.

As engineers we had to design something. Usually the first step in the design process would be to sit with the user and develop a user requirement specification. For us, that was quite unusual, though, because we had been working for the AEB [which was its own client for the nuclear explosives programme]. Now, for the first time, there was an external client. We were from the AEB, and Armscor was represented by Kentron. The Kentron people taught us how the process would work. There was a user specification requirement needed, but at that stage there was no user, because it was just intended as a deterrent. The military thought that the programme was unnecessary to the fight they were having in Angola and were worried that the programme was drawing funds from the military budget. They were not convinced about this programme at all. So we had to turn to the politicians, but they didn't know what they wanted. So it was left to the scientists. When the facility was first opened, we had a sense that something was missing. Brigadier John Huyser from the SADF's strategic planning division was asked to liaise with us. He had an insider relationship with P.W. [Botha] and could go to him directly without going through official channels. He told us: 'Don't ask too many questions — just make a bomb.' When we asked how big, he said 'very big'. When we asked other questions, we didn't get any satisfactory answers. I was worried; in fact, I was quite panicked, because here we were developing a very serious weapon that we felt nobody knew how to use. That was why I made the statement to P.W. [Botha] when we unveiled the weapons that is quoted in the book by Steyn, Van der Walt and Van Loggerenberg:

> [Mr President, we are proud, today, to show you and your colleagues these sophisticated products of South African ingenuity. By placing these weapons in your hands, we are placing a terrible responsibility on your shoulders. We want you to know that we, who understand the consequences of these systems, regularly pray for you and your colleagues. We pray that you will have the wisdom and the necessary understanding of your accountability when you consider their use.]

My recollection of my statement is somewhat different. I think I said:

> Mister President, I and my colleagues working in this facility are constantly aware of the huge potential for destruction of these systems. We therefore assure you that we will constantly pray for you and the government that you will have the wisdom to use this capability to the benefit of South Africa and ALL its people.

After that statement, P.W. [Botha] ignored me for the rest of the evening, throughout the cocktail party. But F.W. [de Klerk] came up to me and said that he had thought I was right, and brave to have said that.

When there was no leadership coming from the top — we had to go ahead and design

the system. We took the initiative ourselves as engineers and scientists. We developed the nuclear strategy ourselves. The Nuclear Strategy Workgroup initially included Huyser, but he was like a bull in a china shop. I was then chair, and tried to draw up a sensible nuclear strategy for the country. The first strategy document was written by Huyser; that one was signed by P.W. [Botha], but it was ambiguous and spelt out various options: (i) that the weapons could be used as a political tool with no accompanying physical support [the 'bluff' option], (ii) that a nuclear weapon is built and kept secret — covert option, and (iii) once we have a minimal capability — in other words, one weapon — we would disclose it strategically — overt option. In his argument in support of the options, he recommended that we go overt with this. When P.W. [Botha] signed, he wrote on the document, 'I approve but we will wait until we are ready to go public'. But it was not clear what constituted 'ready'. Did it mean when the bomb was ready or when the political situation demanded disclosure? We saw the ambiguity and were concerned that the document was not clear enough. Then we went ahead and developed a strategy that was signed by Magnus Malan [the minister of defence]. We didn't have P.W. [Botha]'s signature on that document. It was a big document, properly bound, a top secret document.

There were three categories of documents relating to the programme: technical documents, strategy documents and technology development documents that related to other work that we did to keep the scientists busy — advanced warhead types and delivery systems.

The document management system was very comprehensive. It was illegal for us to copy any documents, unless we obtained permission and were authorised to do so. Then when copies were made, they were signed for and numbered. Information, including the numbers of the documents and all copies and who had them in their possession, was kept in a formal documents register. Every document and every copy had a unique number. Audits of the documents were done regularly, about once a year, by the security people. Now security clearance was very thorough and included a psychological profile, the person's habits and so on. We were interviewed by professionally trained interviewers. Relatives and friends were also interviewed and personal records checked.

All documents were listed in a register. The physical documents themselves were kept by the people who needed them. When you no longer needed a document, it was returned. When the extra copies of documents were no longer required, they were immediately destroyed.

When F.W. de Klerk took over from P.W. [Botha] in 1989, the decision was made to terminate the programme. One of the first things F.W. [de Klerk] did, in the first week as president, he called in the people from the AEC and Armscor and spoke to them about the programme. He told them, we are now going to negotiate the future of the country and we don't want the nuclear programme to become a red herring — an issue that could affect the negotiations — so we would rather get it out of the way. The deterrent was no

longer necessary. That was a view that we generally shared. In fact, that was consistent with the nuclear strategy — when there was no threat, there was no deterrent needed. There were one or two people who were concerned about their futures after the closure of the programme, but there was no one who did not want closure. F.W. [de Klerk] was clear: he didn't want the nuclear [weapons] programme to be a negotiating point for other parties. He wanted it wiped out as if it had never existed. Dr Stumpf interpreted that to mean that we must try to destroy everything in such a way that we could say that there was never such a programme. Its existence could be denied. Stumpf thought that De Klerk was going to want to deny the existence of the programme. Stumpf then called in Armscor, Advena and the AEB and said, 'the existence of the programme will be denied by the government therefore we must destroy all traces of the programme'. That was his interpretation of De Klerk's order. So, starting in 1989, there was a total clean-up of all materials, facilities and documents.

By that time I was no longer in the programme; I was a senior manager at Armscor. At that time, though, I still had some documents, including the original strategy document that had Malan's signature on it. One day, it must have been in 1989, some security guys came to see me about the termination of the programme. They knew, from the record, exactly which documents I must still have had. They told me I had to give them the documents for destruction. I argued with them, because I didn't agree that all the documents should be destroyed, specifically not things like the strategy document. In the end, I was forced to hand them the documents or face prosecution. They left with the documents. I tried to complain, but got the same answer from everyone. The security guys were from Armscor Information security.

I heard that the documents were taken to Advena or the old Circle plant, where they were put in the furnace and burned. That process was also audited. They wanted an independent audit to show that everything was destroyed, so Professor Mouton, who was at that stage at Stellenbosch and highly regarded at the top political level, was appointed to audit the destruction. There was a problem with the building where the uranium furnace had been: it was slightly contaminated still, so they pulled up the floor and recast it so that no radiation would be detected.

So why was the existence of the programme eventually declared? We said that you can destroy the physical stuff, but you cannot destroy people's memories. It would be stupid to deny the existence of the programme, anyway, as it will inevitably leak out at some point. Rather, we advised, go for open verification of termination and let them [the international community] approve of the audit. I think F.W. [de Klerk] also realised that there was an advantage to be gained from disclosure in 1991. Anyway, it had to be disclosed before it leaked out.

There is every reason to suspect that every single document was destroyed. But there is human nature. People do keep things, but one has to be careful in trying to find this

out, because if anyone kept copies of the documents, they would have been illegal copies, unofficial copies. I have tried to use my position of trust with people to try to find some documents, but I have not come up with anything substantial. I have found bits and pieces, but nothing of real value — for example, I would find a table of weights of materials, but that's it. Even the Jericho missile document that SAHA had released comes from a different area. John Huyser from strategic planning was asked to consider whether Jericho missiles would be of any use to us, probably because Israel had approached South Africa with an offer for them. But this document pre-dated the development of our nuclear weapons. It was not in any way related to the nuclear weapons programme.

In the programme, we were very cautious. We rather over-classified documents than risked them being under-classified. That is why no documents had any classification other than top secret. That is also why they were all destroyed. All there is now is an oral history.

I don't believe that there is still an attitude [in government] that we have to hide things. There are still sensitivities — commercial confidentialities — equipment that was purchased from other countries and these are relationships that people don't want to compromise. For example, if a company in the U[nited] K[ingdom] sold us a high-powered X-ray machine and that were to come out now, it would serve no purpose other than to harm the company. Let me give you an example.

In Armscor we wanted to have a history written about the armaments industry. So the Contemporary History Department at the University of the Free State was tasked, paid and given access to the Armscor archives. They even got permission to publish, but in the early 1990s, just before it was ready for publication, it was asked if it was really prudent to publish. It was felt that the timing would be inappropriate. We held the book back then, because it seemed a bit irrelevant to publish then, or even politically insensitive. In fact, it has still not been published.

During the TRC [Truth and Reconciliation Commission], Armscor was asked to make a presentation. I said that we should see if there was anything that we ought to confess, so we had an internal investigation. But we could not find any human rights violations. We could find violations of laws — the laws of other countries — but nothing of value to submit to the TRC. The TRC was not happy with that and sent their own team to the archive, but they didn't know where to start. It's a huge archive with many documents. We told them about the manuscript [described above] and officially presented it to them — that should still be part of the TRC records. Today, it would be silly to publish it — in any case, it would be more about how we beat sanctions, and that could look like bragging.

Prof. Buys' final comments: You must remember that in the 1970s, science was king. It was a pursuit of technology. The philosophy was to do the R&D [research and develop-

ment] and the applications would follow — don't let the market dictate what you should do. I disagreed; I felt that we should be more pragmatic. I later also opposed the Kalahari test because I thought that by doing the test (which wasn't really necessary) we would increase the threat to South Africa, because we would create the impression that we had a weapon before we in fact did. That could have brought Russian nuclear weapons into the region. The world would never have believed that it was a civilian test. Remember that for this programme, because we were under sanctions, there was no information about how to build nuclear weapons. We had to reinvent the wheel, and people were completely absorbed and motivated by the science. They didn't always think of the bigger picture.