



Ava Peattie / Shutterstock.com

The ANC and Apartheid South Africa's Nuclear Weapons Program

By Jo-Ansie van Wyk and Anna-Mart van Wyk

Abstract

The African National Congress (ANC) was established in 1912 and banned by the apartheid government in 1960. Many members of the organisation went into exile, and it continued underground. The organisation became synonymous with the anti-apartheid and liberation struggle in South Africa until its unbanning in 1990. The organisation had early on adopted an anti-nuclear weapons position and its awareness of, and resistance against, the apartheid regime's secret nuclear weapons program became one of the pillars of its global struggle to end apartheid. This paper traces the early development of the ANC's position on nuclear energy and nuclear weapons, before discussing its international anti-nuclear initiatives, including its armed struggle and attack against the Koeberg nuclear power plant close to Cape Town, during its construction.

Introduction

The National Party (NP) that came to power in South Africa in 1948 moved rapidly to entrench apartheid as a political, social, legal, and constitutional system. Early opposition to apartheid included, inter alia, the Defiance Campaign, eliciting government responses in the form of death sentences, incarceration, violence, terror, and further expansion of white privilege. In 1974, Prime Minister John Vorster approved the construction of

a single peaceful nuclear explosive (PNE) device, mimicking the United States' Project Plowshare, which was aimed at developing techniques to use nuclear explosives for civil engineering purposes (Van Wyk, 2018; The Plowshare Program, n.d.). Four years later, following a perceived deterioration in its position of power in the Southern Africa region, and an escalating threat perception, the apartheid government (also referred to as Pretoria in this article) decided to embark on a top-secret nuclear

weapons programme as a deterrent, building on a strong civil nuclear base developed since the early 1960s. The African National Congress (ANC) followed these activities closely, and set out to influence international thought by framing or constructing the apartheid government and its nuclear weapons program as a threat to human rights and global security.

The focus of this article is the origins of the ANC's position on nuclear weapons and reaction to Pretoria's nuclear weapons programme. As a point of departure, it must be noted that the ANC's 'nuclear struggle' cannot be divorced from its larger liberation struggle. However, a pertinent focus on this aspect of the liberation struggle provides valuable insights into the transnational activism and anti-nuclear struggles of non-state actors, thus contributing to the historiography of the liberation struggle in South Africa. The organisation's tactics to express its anti-nuclear position, are discussed. These tactics include international pressure and an armed struggle, which included attacks on South African nuclear installations. A complete nuclear history of the ANC has not been published. However, archival research on South Africa's nuclear history is notoriously difficult (Fig, 2009, 56-87; Gould, 2009: 88-121) as documents were destroyed during the secret nuclear disarmament process, and there are considerable challenges in accessing surviving government documents, coupled with the ANC's banning and exile between 1962 and 1990. Consequently, this article is based on secondary sources and primary sources that are publicly available. It represents an ongoing attempt to contribute to South Africa's nuclear history in the context of apartheid, the liberation struggle, decolonisation, and the Cold War.

The ANC and the Cold War

The history of the apartheid government and of the ANC's international human rights struggle aimed at ending racial discrimination in South Africa are well-documented and therefore not detailed here.¹ However, the history of Southern Africa cannot be divorced from the bigger Cold War theatre. As Africa shook off the shackles of colonialism throughout the 1950s and 1970s, the anti-communist apartheid government feared a communist take-over of Southern Africa. All of

this escalated after the ANC and other liberation organisations were banned on 4 August 1960, leading to many members of these organisations flocking into exile across Southern Africa. Pretoria's sense of insecurity further increased due to the rise of the newly independent and vocal Afro-Asian bloc in the United Nations, which supported South African liberation movements and isolated the apartheid state. To counter this sense of insecurity, the apartheid government expanded its techno-nationalist military-industrial complex. This complex was used for brutal suppression of anti-apartheid actors and states in South- and Southern Africa.

After its banning, the ANC realised that Pretoria's apartheid policies would increasingly subjugate the Black majority in South Africa. The immorality of apartheid, asymmetrical state-society relations, appeals to humanity, calls for equality, and the conceptualization of an armed struggle as a "just war" became moral justifications for the ANC to launch an armed wing, known as Umkhonto we Sizwe (meaning "Spear of the Nation", henceforth

“

n 1974, Prime Minister John Vorster approved the construction of a single peaceful nuclear explosive (PNE) device, mimicking the United States' Project Plowshare, which was aimed at developing techniques to use nuclear explosives for civil engineering purposes (Van Wyk, 2018; The Plowshare Program, n.d.).

”

MK), on 16 December 1961. The choice of date was symbolic: it was an important date in Afrikaner nationalism, as it commemorated a victory over the Zulu nation in 1838.

Under Prime Minister John Vorster, the apartheid government's nuclear ambitions developed in response to Cold War threat perceptions, the ANC's armed struggle, and the Border War, which broke out in 1966 on the border between Angola and South African-administered Southwest Africa. After the June 1976 Soweto Uprising, young refugees fled to the Front-Line states (Walters, 1997; Shearar, 1993), where many joined MK. They received training by Cuban and Soviet instructors in Angola and later by ANC and MK instructors, while other operatives attended specialized courses in Algeria, Bulgaria, Cuba, the German Democratic Republic (GDR), Hungary, the Soviet Union, and the former Yugoslavia (Motumi, 1994). The ANC's closest relations was with the Soviet Union, which was also the major arms supplier to the ANC (Filatova & Davidson, 2013: 298-339).

During the 1970s and 80s, the South African Defence Force (SADF) conducted regular cross-border raids and attacks on ANC bases in neighbouring countries, and fought a Border War with Angola. The Cold War had arrived in Southern Africa, and the region had become a proxy theatre for conflict between the socialist and capitalist blocs. Soviet and Cuban support for liberation movements in Southern Africa, as well as Angola and Mozambique's independence from Portugal, became major security threats to the apartheid state. Pretoria's sense of insecurity and isolation deepened amidst these Cold War rivalries, and, coupled with perceived security threats made against the country (known as "Total Onslaught"), it embarked in 1978 on a secret nuclear weapons program as part of its so-called "Total Strategy" (Von Wielligh & Von Wielligh-Steyn, 2014). The question is – how did the ANC respond to this?

The Emergence of the ANC's Anti-Nuclear Weapons Position

As early as the 1950s, the Congress Movement, which consisted of a conglomeration of anti-apartheid organisations, including the ANC, arranged anti-nuclear peace and protest meetings in South Africa. Hence, the democratic movement

in South Africa opposed nuclear proliferation long before there was any prospect of the apartheid government developing an atomic bomb (Minty, 1994). A 1958 ANC report confirms this early nuclear consciousness, noting that: "it is a matter of regret and great concern to all peace-loving people of the world that the great powers ... have not found an answer to the question of disarmament and prohibition of the use of nuclear weapons" (ANC, 1958). Furthermore, in 1961, Chief Albert Luthuli, the President of the ANC (1952-1967) mused that if ever he became the Prime Minister of South Africa, he would seek to bring about the banning of nuclear warfare and work for some degree of disarmament (Luthuli, 1961).

Elsewhere on the continent, other events also impacted the ANC's early anti-nuclear position, including the independence of numerous Anglo-phone states, which endowed many African states, leaders, and liberation movements with greater confidence to assert African agency and Pan-African ambitions, interests, and norms on the international stage. In contrast, the Francophone states were still held in the geo-strategic and political grip of France, who continued with nuclear tests in the Sahara Desert. These tests became a catalyst for African states' positions on nuclear weapons (as discussed in detail by another paper in this special edition). On 25 May 1963, the Organisation of African Unity (OAU) was established. Its objectives included decolonisation, an end to apartheid in Southern Africa, and denuclearization across Africa (OAU, 2002). To achieve the third objective, African states, and liberation movements, including the ANC, supported the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), which was signed in 1968 and entered into force in 1970 (Ogunbadejo, 1984). Besides these developments, the decade also saw the inauguration of South Africa's first nuclear reactor and considerable nuclear developments in the country. On 18 March 1965, South Africa's first nuclear reactor went critical, and on 5 August 1965, Prime Minister Hendrik Verwoerd, widely regarded as the 'father' of apartheid, inaugurated the South African Fundamental Atomic Research Installation (SAFARI-1), a nuclear research reactor operating on highly enriched uranium (HEU), at Pelindaba near Pretoria (Von Wielligh and Von Wielligh-Steyn, 2014). Pretoria skirted the NPT, only signing it in June 1991, after its secret nuclear arsenal was destroyed.

Redefining and Internationalising the Liberation Struggle

African support for South African liberation movements, the Ghana-led opposition to French nuclear tests in the Sahara Desert, and the OAU Cairo Declaration (1964) on the denuclearisation of Africa contributed to the ANC's redefinition of its liberation struggle and its position on nuclear weapons. Whereas the 1950s and 1960s can be described as the first phase of the ANC's international engagement on nuclear issues, the 1970s emerged as a second phase during which the ANC redefined its liberation struggle to include an anti-nuclear struggle. Moreover, the organisation increasingly internationalised its cause. During this time, the ANC adapted to global and regional Cold War realities. Given the apartheid state's closed nature, the ban on the ANC, limited press freedom, and South Africa's global isolation against the background of Cold War paranoia, information became a rare but especially important commodity in the ANC's international relations. To convince the international community of Pretoria's nuclear intentions, the ANC collected information and intelligence on the regime's nuclear development and its much-denied nuclear-related collaboration with Western countries, which continued despite UN arms embargoes against South Africa (SADET, 2010; SADET, 2015).

Pretoria's heavy-handedness prompted the ANC leadership to instruct some of its members in Britain to establish the Boycott South Africa Movement (BSAM) in June 1959. The BSAM changed its name to the British Anti-Apartheid Movement (AAM) in 1960, following the Sharpeville Massacre on 21 March 1960. The AAM became an important instrument in the internationalisation of the ANC's liberation struggle. This enabled the ANC to project and communicate their demands for democracy, as well as information about the ills of apartheid and South Africa's suspected nuclear weapons program, to a global audience, including state and non-state actors (See AAM Archives at the Bodleian Libraries, Oxford).

The ANC's information and intelligence gathering on South Africa's nuclear development started early. Following the bilateral cooperation agreement between the United States (US) and South Africa, signed under the Atoms for Peace program in

“

On 25 May 1963, the Organisation of African Unity (OAU) was established. Its objectives included decolonisation, an end to apartheid in Southern Africa, and denuclearization across Africa (OAU, 2002).

”

1957, the ANC monitored collaboration and nuclear scientist and technologist visits between the US and South Africa, and between the latter and West Germany (Minty, 1994). The ANC's dissemination of information accelerated after Vorster announced in July 1970 that South African scientists had developed a secret and innovative process to create HEU concentrate – a crucial element in a nuclear bomb (DIRCO, 20 July 1970). In 1975, the pilot uranium enrichment plant that was built to test the process was announced as operational, and plans to build a fully commercial plant were also announced (NTI, n.d.). This prompted the ANC to publish a special issue of its official journal, *Sechaba*, in November 1975, which contained detailed accounts and copies of secret documents concerning nuclear collaboration between South Africa and West Germany, including assistance to build the commercial enrichment plant, as well as an agreement to provide pre-revolutionary Iran with uranium oxide in exchange for financial participation in the plant (*Sechaba*, 1975). West Germany, France, the US, the United Kingdom (UK), and Italy were also accused of complicity in South Africa's nuclear development since the 1960s (*Sechaba*, 1975). The ANC concluded that the apartheid government, “which has not hesitated to use the most ruthless terror against its own people, will not flinch, when driven to desperation,

“there is now shocking news that the racist regime is about to test its own atomic bomb...”

from unleashing a holocaust upon the continent of Africa and the world” (*Sechaba*, 1975). Therefore, it petitioned the UN for action against Pretoria, as it posed a threat to international peace and security. A subsequent edition of *Sechaba* included a report by the UN Special Committee against Apartheid (established in 1962), which outlined international nuclear cooperation with South Africa, its uranium mining and enrichment and details pertaining to the construction of a nuclear power plant at Koeberg, near Cape Town (*Sechaba*, 1976).

Meanwhile, the ANC worked hard to harness support at the UN, which was deeply engaged with the question of apartheid through its Special Committee Against Apartheid and passed numerous resolutions aimed at sanctioning and isolating South Africa. The ANC was concerned about the Western states’ veto power and decided to target international public opinion, especially in Western states known to support South Africa. The Special Committee supported this, and in 1966, the UNGA endorsed an international campaign against apartheid “involving governments and the public” (Reddy, 1994: xiii). Subsequently, the ANC established a permanent mission to the UN and leaders of the organisation were invited to all activities of the Special Committee. According to Enuga Reddy, the Principal Secretary of the Special Committee since 1963, and Head of the UN Centre against Apartheid, these leaders enjoyed “full rights of participation” and election as officers (Reddy, 1994: xiii). This was an unprecedented practice as no UN Committee had ever developed such “intimate relations” with a non-governmental organisation. He credited Abdul S. Minty (refer to the transcript of an interview with Minty in this special issue) for fostering these relations (Reddy, 1994: xiii). Minty was an exiled South African and prominent anti-apartheid activist who became Honorary Secretary of the British AAM in the 1960s, and later established the World Campaign Against Military and Nuclear

Collaboration with South Africa in 1979. He did not have a formal affiliation with the ANC, but passed information on to them, and as such, supported the ANC’s efforts (Onslow, 2013).

The UNGA requested the Secretary-General to produce annual reports on South Africa’s nuclear capability. With links to the Special Committee and other UN entities established, the ANC fed the UN information unceasingly, through various means, including on nuclear developments in South Africa. Various senior ANC members also regularly addressed different UN forums. In one such address to the UNGA, on 26 October 1976, ANC President Oliver Tambo highlighted the Soweto uprising and the subsequent violent crackdown on protesting Black students. Tambo referred, *inter alia*, to international collaboration with South Africa to “fulfil its ambition to produce the atomic bomb” (Reddy, 1991: 68-69). Tambo also reiterated the ANC’s call on the international community to terminate military collaboration with Pretoria, which constituted a threat to world peace and international security due to its violent domestic crackdowns and escalating cross-border raids into other countries in Southern Africa (Reddy, 1991: 68-69). A few months later, on 25 March 1977, the ANC’s Special Representative to the UN, Johnstone Mfanafuthi (Jonny) Makatini, addressed the UNSC. *Inter alia*, he described the apartheid government of being equipped with a military nuclear capability (DIRCO, 2012). (It is not clear on what basis Makatini made this allegation, but it likely had to do with the uranium enrichment alluded to earlier). Makatini addressed the UN annually, and maintained his contention that, despite embargoes and sanctions, Western states continued to support and collaborate with the apartheid government on nuclear issues (DIRCO, 2012).

Meanwhile, the Atomic Energy Board (AEB) was preparing an underground nuclear explosive testing facility at Vastrap in the Kalahari Desert for a planned cold test of a PNE in August 1977. This was envisaged to be followed by a full test with HEU in 1978 (Albright and Stricker, 2016: 74) but these plans were abandoned in July 1977 when a Soviet satellite discovered the test site (Pabian, 2015: 37). Even before Moscow alerted Washington to the existence of the test site, Tambo announced at a World Conference for Action Against Apartheid in Nigeria on 3 August 1977 that “there is now

shocking news that the racist regime is about to test its own atomic bomb, thanks to the extensive scientific, technological and financial support given by Western imperial powers to the racists' nuclear programme" (Reddy, 1991: 80). It is not clear how Tambo knew about the impending test or the discovery of the test site, but it is highly probable that he was tipped off by the ANC's ally, the Soviet Union. In March 1978, at the launch of the UN International Year against Apartheid, Tambo reminded the international community that "the world is confronted by the reality that the racist regime has the capacity to produce nuclear weapons and has acquired the means of their delivery" (Tambo, 1978: 28).

On 4 November 1977, the UNSC passed Resolution 418, which imposed a permanent and binding arms embargo against South Africa under Chapter VII of the UN Charter. It was declared that the "acquisition by South Africa of arms and related material constitute[d] a threat to the maintenance of peace and security." It further noted that the UNSC was "gravely concerned that South Africa [was] at the threshold of producing nuclear weapons," amongst other concerns, and decided "that all States shall refrain from any cooperation with South Africa in the manufacture and development of nuclear weapons" (Van Wyk, 2005: 89). Subsequently, Tambo and Makatini continuously argued, with support from Minty, that some states assisted the apartheid regime in building up its military and nuclear complex, despite sanctions and the 1963 and 1977 arms embargoes. Makatini accused countries collaborating with Pretoria of becoming "active accomplices in all the crimes committed by that regime against the South African people and against neighbouring states" (DIRCO, 2012: 58-59).

In 1979, a US Vela satellite detected a suspected nuclear explosion close to South Africa's sub-Antarctic Prince Edward Island in the Indian Ocean. Pretoria denied any complicity, but the incident granted the ANC more ammunition. It recounted information received from a "former Russian spy in the South African Navy" (i.e. Dieter Gerhardt) that South Africa provided logistical support to Israel during the test (Albright, 1994: 149). The ANC also launched an extensive campaign to terminate South Africa's membership of the International Atomic Energy Agency (IAEA) (Minty, 1994). Their success was limited: the IAEA's only steps was to

refuse to accept the South African delegation's credentials, and replacing South Africa's seat on the Board of Governors with Egypt (Minty, 1994).

The ANC's Armed and Anti-Nuclear Weapons Struggle

By the 1970s, the ANC had a clear position on nuclear weapons and had established a major transnational network. But it took 15 years of active lobbying, both at the UN and elsewhere, for the UNSC to institute the mandatory arms embargo, and for MK to gain new momentum. In 1978, following a visit by ANC leaders to communist leaders in Vietnam, the ANC released a Politico-Military Commission Report known as the Green Book (ANC, 1997; O'Brien, 2003: 44). The report signalled a new phase in the ANC's approach to the apartheid government, with a focus on using a combination of political and military action to weaken its grip on political, economic, social, and military power (ANC, 1997). Following the release of the Green Book, MK resumed operations in South Africa, known as "G5 Operations."

A related development was the 1979 establishment of the 19-member MK Special Operations Unit (SOU), which was also called the Solomon Mhlongo Unit (TRC, 2000). It had approximately 60 members and its own command structure, which reported directly to the president of the ANC. Details of operations were classified and only the SOU Command had full knowledge of them. According to Aboobaker Ismail, the purpose of the SOU was to attack "strategic targets of an economic and military designed nature to have maximum impact" (Ismail, 2013: 33). Attacks would be executed by small units consisting of between two and six MK members. In 1982, the SOU established the Dolphin Unit in Durban as an additional internal unit to operate in South Africa, under the general command of Aboobaker Ismail, who had the freedom to identify targets and recruit members (TRC, 2000). Meanwhile, a new MK military headquarters was established in Lusaka, Zambia. Additional facilities were also established in Angola, Mozambique, and Tanzania (Ismail, 2013: 33).

The establishment of the SOU resulted in an increase in sabotage incidents. It is estimated that 150 to 160 attacks took place between 1976 and 1982 (ANC, 1997; Lodge, 1983/4: 153-154), on targets including

police stations, fuel storage facilities, electric power stations, railroads, the Army Headquarters, the Air Force headquarters, and the Koeberg nuclear power station. For the ANC, these were “spectacular operations that would hit the economy hard” (ANC, 1997). Moreover, these attacks were regarded as evidence of a “new level in the armed conflict” between the apartheid government and the ANC and its allies (Tambo, 1983).

Of relevance to this contribution, is the 1982 attack on the Koeberg nuclear power station, which had been under construction near Cape Town (Van Wyk, 2015; ANC, 1997). As international suspicion towards South Africa's nuclear development increased, the construction of Koeberg became a focus area for the ANC's actions against Pretoria. It was suspected that Koeberg and other civilian programmes may have been a cover for a nuclear weapons program, and that Koeberg was geared to produce weapons-grade plutonium (Minty, 1994; Stam, 2016). These sentiments were shared by Renfrew Leslie Christie, who would play a major role in planning the bombing of Koeberg following observations during guard duty as a conscripted soldier of the SADF, at an ammunition dump east of Johannesburg, which convinced him that Pretoria was developing nuclear weapons (Smirnova, 2018; Anti-Nuclear Activism Conference, April 2023).² He subsequently started ‘hunting’ for “apartheid's nuclear bombs” (SAHO, n.d.) while completing his master's and doctoral studies on aspects of electrical power systems in South Africa (SAHO, n.d.; Stam, 2016). His studies stemmed from his suspicion that Pretoria was using these systems to enrich uranium. As the uranium enrichment process needs enormous quantities of cheap electricity, Christie figured that monitoring the facilities capable of producing such power was the best way to keep an eye on Pretoria's nuclear endeavours (Stam, 2016). He was allowed to do research for his postgraduate studies at South Africa's state-owned power utility, Eskom, which gave him an excuse to investigate Eskom's plans on uranium enrichment (SAHO, n.d.). He used his access to Eskom's libraries and archives to track the nuclear program's progress, by monitoring how much electricity was being used for uranium enrichment. He then used the information to calculate when there would be enough uranium for a nuclear bomb (Stam,

2016). Christie concluded that “the apartheid government ha[d] all it need[ed] to make nuclear weapons” (Smirnova, 2018).

After completing his doctoral studies at Oxford University, Christie returned to South Africa in 1979 and began spying on Pretoria's nuclear program for the ANC. Based on his calculations, which he proudly considered to be “very accurate” (Smirnova, 2018; Stam, 2016), he informed the ANC step-by-step of the progress being made at Koeberg. But, within three months of his arrival back in South Africa, a double agent outed Christie and he was arrested under the Terrorism Act. He was found guilty on multiple charges and spent seven years in prison. When he was arrested, he had sensitive documents in his possession, which pertained to a study of locations where nuclear weapons of diverse sizes could be detonated in South Africa without damaging physical property. The study looked at seismic effects and where an explosion would affect different ethnic groups (i.e., by apartheid-defined racial groups – White, Black African, Indian, etc.). According to Christie, the study could be read simply to find a place in the country where Pretoria could safely test bombs, but it could also be read as a potential strategy for ethnic cleansing (Stam, 2016; McDonald, 2013). It is unclear where he obtained the documents. He later revealed how, after he was arrested, he wrote a carefully crafted confession, in which he attempted to make public the information he had gathered on Pretoria's nuclear program. In the confession, Christie offered recommendations to the ANC on what to do about the program (Smirnova, 2018). He also “included as explicit instructions as he could on how to bomb the Koeberg nuclear power station” without endangering the people of Cape Town (Stam, 2016).

During Christie's trial, “in an effort to demonize [him] to the public, the judge read his full confession out loud” (Stam, 2016; Smirnova, 2018). This was exactly what Christie wanted, as it helped his recommendations to be printed and spread to the ANC, who used it two-and-a-half years later to blow up a part of Koeberg (SALO, 6 June 2016). The bombing fell on the shoulders of Rodney Wilkinson and his girlfriend, speech therapist Heather Gray (Smirnova, 2018). Wilkinson has stated that his sympathies lay with the ANC from the start, but Christie's arrest in 1979 inspired him to act

(Birch, 2015; Anti-Nuclear Conference, April 2023). Wilkinson was successful in gaining employment as a draftsman at Koeberg, despite his anti-nuclear sentiments and a history of desertion from the SADF. After 18 months, he stole a set of Koeberg's building plans. These were presented to the ANC's Mac Maharaj during a meeting in Zimbabwe, with a proposal to use it to plan an attack on Koeberg (O'Malley, 2003).

Maharaj was suspicious of infiltration by the South African security establishment, and put Wilkinson and Gray through a vetting process. As part of the process, the building plans were passed on to SOU Commander Joe Slovo, with a warning that Koeberg would become operational in the next six months. The stolen plans were authenticated by both Soviet and Western nuclear scientists (Beresford, 2010: 103; Maharaj, 1998; ANC, 1996) and Wilkinson and Gray were vetted. Wilkinson subsequently agreed to carry out an attack on Koeberg (code-named Operation Mac). Maharaj had suggested that Wilkinson, rather than a trained MK soldier, take on the task because he "had a better chance than anyone else of gaining access to Koeberg's most vulnerable points" by virtue of his employment at the plant (Birch, 2015).

Concerned about radiation leakages, it was agreed that Koeberg had to be bombed before it was loaded with enriched uranium. According to Wilkinson: "the purpose was to make a political statement and to cause as much damage as possible. We didn't want to hurt anybody, and I completely didn't want to get killed" (Birch, 2015). Hence, when he returned to South Africa in 1978, Wilkinson successfully applied for re-employment at Koeberg without any background check whatsoever (SAHO, 2013). Dolphin Unit general commander Ismail was assigned to lead Operation Mac, and he regularly met with Wilkinson in Swaziland to plan the attack (O'Malley, 2003), under the pretence of enjoying a "dirty weekend" outside the borders of conservative South Africa (Beresford, 2010). Three possible targets were identified: the two reactor heads (the heart of the plant), a section of the containment building, and a concentration of electric cables under the main control room (SAHO, 2013). The 110-ton steel reactor head was deliberately chosen, as it would be used to control the nuclear reaction and maximize the propaganda effect (Beresford, 2010). As the day of

“

Concerned about radiation leakages, it was agreed that Koeberg had to be bombed before it was loaded with enriched uranium.

”

the attack drew near, members of MK left various dead letter boxes containing four limpet mines for Wilkinson and Gray in the isolated Karoo, which they fetched and took back to Cape Town. The date for the attack was set for 16 December 1982 on a day very symbolic for both Black and White South Africans, as alluded to before.

Despite meticulous planning, a series of unexpected events almost derailed the operation. Several security-related incidents at Koeberg during 1982 raised concerns. In May 1982, four men entered the facility's security zone and attempted to break into a safe. A second incident occurred in July 1982 when a fire broke out. Because Operation Mac was already underway, the ANC prematurely accepted responsibility. However, this was dismissed by Eskom, the owner of Koeberg. A third incident occurred in August 1982 when two men entered the security zone and were able to come within a few meters of the nuclear reactor before they were arrested (*Die Burger*, 20 December 1982: 1). In response to these breaches, security at Koeberg was tightened. However, Wilkinson was able to circumvent these security protocols. He managed to smuggle limpet mines through the perimeter of the security fence one by one in a hidden compartment of his car. He stored them in a desk drawer in his prefabricated office and then smuggled them, hidden in his overalls, through a security gate into the main building (Beresford, 15 December 1995). However, Wilkinson did not manage to install the mines to explode on the target date; he only finished planting them on

17 December, a Friday. The fuses were set with a 24-hour delay so that they would explode on 18 December, a Saturday, when the plant would be deserted (SAHO, 2013; Beresford, 1995). As planned, the mines were planted on the two reactor heads as well as at strategic points under the plant's control rooms (Beresford, 1995).

Ultimately, four explosions occurred, but not as planned. Because the springs on the firing mechanisms were brittle, the devices exploded over a period of several hours between 18 and 19 December instead of simultaneously (*Die Burger*, 20 Dec 1982). By then, Wilkinson had fled to Mozambique via Johannesburg and Swaziland. He met Gray and Tambo in Mozambique, and “the two men cried in each other's arms at their triumph” (Beresford, 1995). Wilkinson and Gray then proceeded to Britain, where they married and lived in exile for more than a decade.

The ANC accepted responsibility for the Koeberg attack on 19 December 1982. In a statement issued in Dar es Salaam, the organisation stated that the attack was meant as a “salute to all our fallen heroes and imprisoned comrades, including those buried in Maseru,” referring to 42 ANC members killed in a SADF raid on 8 December 1982 (*Independent Online*, 11 March 2006). Maharaj later described the attack as a carefully planned propaganda operation designed to avoid casualties while “send[ing] a message to the apartheid regime that the ANC had the capacity to strike anywhere in the country” (McDonald, 2013). Indeed, the attack on Koeberg caused major damage (around 500 million Rand) and delayed construction for a year and a half (McDonald, 2013). It was a major propaganda victory for the ANC.

In the late 1990s, the Wilkinsons applied for amnesty at South Africa's Truth and Reconciliation Commission (TRC) for the bombing of Koeberg (TRC, 1999). In its submission to the TRC, the ANC emphasized that Koeberg was not operational at the time of the bombing and that they went to the trouble of employing reliable nuclear experts in Europe to determine without any shadow of doubt that there would be no danger to civilians because of the explosions (ANC, 1996). The TRC found that “the proposed attack was part of the overall strategy of attacking apartheid and its installations” (TRC, 1999). Considering it a “successful act of sabotage,”

which “was clearly politically motivated,” the TRC granted amnesty to the Wilkinsons on 31 May 1999 (TRC, 1999).

Besides the Koeberg attack, an incident listed in MK's submission to the TRC involves an arson attempt at the Pelindaba nuclear research facility in February 1983 (ANC, 1997). Unfortunately, details on this attempt could not be found during the research for this paper.

Towards Nuclear Disarmament in South Africa

By the beginning of the 1980s, the ANC noted that perceptions in the West towards South Africa were changing (*Sechaba*, 1984: 12), especially following the Vastrap and Vela incidents of 1977 and 1979, which confirmed what, for example, the international community and the Carter (US) and Callaghan (British) administrations already knew, i.e., that South Africa was developing nuclear weapons (Spence, 1981: 441-452). In 1981, Makatini noted the “limited but positive steps” of direct contact being established, and bilateral relations with the ANC being strengthened, by an increasing number of countries. He also hailed the progress towards authorisation of ANC offices in Vienna, Bonn, Brussels, and Paris, in addition to Rome, London and Stockholm (DIRCO, 2012). Yet, Minty admitted that he experienced tremendous opposition to his efforts to convince the international community that South Africa was developing nuclear weapons. He stated that, “despite having access to all the information,” the exiled ANC “had very little opportunity” to engage major Western powers on the issue. For instance, British Prime Minister Margaret Thatcher refused to meet with ANC leaders if their armed struggle continued. However, junior British officials such as Robin Renwick, Geoffrey Howe and Lynda Chalker were at the time in contact with the ANC (Renwick in Kandiah & Glencross, 2014: 20-21). Tambo's first-ever official meeting with representatives of Western governments did not occur until 1987 (Minty, 1994).

By May 1988, the Angolan Border War had reached a stalemate, leading to renewed concerns about Pretoria's nuclear capability and its possible employment. The parties to the Border War finally agreed to negotiations to discuss an end to the

conflict and grant independence to Southwest Africa (Namibia) (*The New York Times*, 14 August 1988; Massie, 1997: 494-495). The talks bore fruit on 22 December 1988 when representatives of Angola, Cuba and South Africa signed the New York Accords. It ended the direct involvement of foreign troops in the Angolan Civil War, and granted independence to Namibia (Saunders & Onslow, 2019: 240-241). Meanwhile, new Soviet leader Michael Gorbachev's progressive politics, coupled with the ongoing political protests across East Germany, and the fall of the Berlin Wall in November 1989, resulted in the withdrawal of Soviet support from Southern Africa (Saunders, 2007: 740-742). The Cold War in the region was ending abruptly, leading to an improvement in Pretoria's external security situation. Internally, P.W. Botha was replaced as state president by the more progressive F.W. de Klerk, after suffering a stroke. De Klerk embarked on fundamental domestic political reforms aimed at bringing full democracy to South Africa, which included, *inter alia*, talks with the ANC, the unbanning of the liberation movements, the relaxation of apartheid laws, and releasing Nelson Mandela and other political prisoners (Stumpf, 1996: 6; Shearar, 1993: 171-186; BBC, 11 February 1990).

De Klerk's reforms also required a re-assessment of the nuclear weapons program. In his memoirs, De Klerk stated that from the mid-1980s he had moral qualms about the nuclear weapons programme and believed nuclear weapons to be a burden, as it had lost its deterrence purpose following the end of hostilities in Angola (De Klerk, 1999: 274). He ordered the secret termination of the program in November 1989. All the nuclear bombs were dismantled, the uranium enrichment plant closed, the enriched uranium downgraded to make it unsuitable for weapons, and the blueprints and related documents destroyed. The relevant Armscor facilities were decontaminated and converted to conventional weapons work and non-weapon commercial activities (DIRCO, 14 November 1989; Van Wyk & Botha, 2009; Albright, 1994; Liberman, 2001: 56; Stumpf, 1996: 6).

The existence of the top-secret nuclear weapons program was only revealed publicly for the first time at a joint session of Parliament in March 1993. The ANC suspected an attempt to cover up important evidence and questioned the quick

disposal of nuclear documents and materials (AAM Archives, MMS AAM 1550; *The Independent on Sunday*, 26 March 1993: 13). Very few ANC members who were destined for high office questioned the dismantling decision, except for future Minister of Defence, Joe Modise, who expressed that "we wanted a bomb for Africa" (Hartley, 2014). However, such opinions were never the mainstream opinion of the ANC leadership, and in particular not Nelson Mandela, who unambiguously agreed that nuclear weapons would not be a part of South Africa's future (Jackson, 2017).

Meanwhile, preparations were underway for the first fully democratic elections in the history of South Africa. After the ANC defeated the NP in the April 1994 elections, Deputy President Thabo Mbeki announced at the UNSC in May 1994 that South Africa would forthwith fulfil all its commitments resulting from its international agreements, including the NPT (Pretorius & Swart, 1994: 1; Swart, 1994: 4). Subsequently, South Africa emerged as a world leader that promoted nuclear non-proliferation and disarmament among non-aligned nations. Indeed, within a year of the inauguration of the new government, in April 1995, South African diplomacy at the NPT Review Conference played a major role in forging a consensus to extend the treaty indefinitely, by outlining a plan for indefinite renewal of the NPT and acting as a bridge to the non-aligned nations (Crossette, 1995: A1; Onderco & Van Wyk, 2019). The ANC was also eager to see the rapid establishment of a treaty on a nuclear-weapons free Africa (Jackson, 2017) – an objective that became a reality on 11 April 1996, when the African Nuclear-Weapon-Free-Zone (ANWFZ) Treaty (or Pelindaba Treaty) opened for signature (NTI, n.d.). South Africa also passed the Non-Proliferation of Weapons of Mass Destruction Act (Act 87 of 1993) (Government Gazette, 1993) and ratified the Treaty on the Prohibition of Nuclear Weapons (TPNW) in February 2019 (ICAN, n.d.).

Conclusion

One of the ANC's main objectives was to convince the international community on the exact meaning and consequences of apartheid to maintain international pressure on Pretoria. It operated in a domestic and international environment of asymmetry. Therefore, access to power and limited resources meant that it had

to use the “power of ideas.” By redefining and internationalising the anti-apartheid liberation struggle, ANC leaders influenced international opinion by framing the apartheid government and its nuclear weapons program as a threat to human rights and global security. This became one of its most successful strategies. An example is the ANC’s cognitive framing of the discovery of the Vastrap nuclear test site. Through so-called frame alignment, the ANC reiterated the grave importance and meaning of the discovery of the site. In this regard, the ANC also, as indicated earlier, employed frame resonance, i.e., framing the discovery as a confirmation of its years of campaigning to convince the international community of South Africa’s nuclear ambitions, hence rendering South Africa’s nuclear denial

untrue (Keck & Sikkink, 1998). Anti-communist Washington and London were often not eager to entertain the ANC’s ideas and norms. The ANC prevailed, however, and was able to attract some international goodwill and to influence policies and international action against South Africa, particularly in the UN, which was a major target for the ANC’s transnational efforts. In addition to enjoying special status at the UN, the ANC was able to elicit transnational financial, ideological, and political support from sympathetic governments and civil society actors, often with the assistance of Minty and others. These efforts resulted in the almost complete isolation of apartheid South Africa in the UN, OAU, the Non-Aligned Movement (NAM), and the IAEA, in addition to the mandatory arms embargo introduced by the UN in 1977.

Endnotes

- ¹ The authors wish to acknowledge funding from the University of Johannesburg and Open University for the article processing fees. See, for example, the ten -volume series of the South African Democracy Education Trust (SADET), *The Road to Democracy in South Africa* (Pretoria: UNISA Publishers). Available from: <http://www.sadet.co.za/>.
- ² No indication could be found in the numerous publications consulted, of what Christie saw that alerted him to the apartheid government’s nuclear plans.

References

- African National Congress. (1958). The Annual Report of the National Executive Committee of the 46th Annual General Conference of the ANC. Durban, 13-14 December 1958. Available from: http://www.historicalpapers.wits.ac.za/inventories/inv_pdf/A3299/A3299-G1-1-18-002-jpeg.pdf.
- African National Congress. (1996, August). Statement to the Truth and Reconciliation Commission. Available from: <https://omalley.nelsonmandela.org/omalley/index.php/site/q/03lv02167/04lv02264/05lv02303/06lv02304/07lv02305/08lv02312.htm>.
- African National Congress. (1997, May 12). Second Submission to the TRC: Umkhonto we Sizwe Operations Report. Available from: <https://www.justice.gov.za/trc/hrvtrans/submit/anc2.htm>.
- Albright, D. (1994). South Africa's Secret Nuclear Weapons. ISIS Report. Available from: <https://isis-online.org/isis-reports/detail/south-africas-secret-nuclear-weapons/13>.
- Albright, D. & Stricker, A. (2016). *Revisiting South Africa's Nuclear Weapons Programme: Its History, Disarmament, and Lessons for Today*. Washington: Institute for Science and International Security.
- Anti-Apartheid Movement (AAM) Archives, Bodleian Library, Oxford.
- MMS AAM 1550.
 - MMS AAM 1550, World Campaign Memorandum to Professor Gambari, Chairman, UN Special Committee Against Apartheid, 3 April 1993.
- BBC. (1990). On this Day, 11 February 1990: Freedom for Nelson Mandela. Available from: http://news.bbc.co.uk/onthisday/hi/dates/stories/february/11/newsid_2539000/2539947.stm.
- Beresford, D. (1995, December 15). How We Blew Up Koeberg (... and Escaped on a Bicycle). *Mail & Guardian*. Available from: <http://mg.co.za/article/1995-12-15-how-we-blew-up-koeberg-and-escaped-on-a-bicycle>.
- Beresford, D. (2010). *Truth is a Strange Fruit: A Personal Journey through the Apartheid War*. Jacana Media: Auckland Park.
- Birch, D. (2015). South African who attacked a nuclear plant is a hero to his government and fellow citizens. Available from: <https://publicintegrity.org/national-security/south-african-who-attacked-a-nuclear-plant-is-a-hero-to-his-government-and-fellow-citizens/>.
- Crossette, B. (1995, April 23). South Africa Emerges as a Force for Extending Nuclear Arms Pact. *The New York Times*, A1.
- De Klerk's Bomb Story Incomplete. (1993, March 26). *The Independent on Sunday*, 13.
- De Klerk, F.W. (1999). *The Last Trek – A New Beginning*. New York: St. Martin's Press.
- Department of International Relations and Cooperation (DIRCO) Records Division:
- File 2/5/2/1: Kernkrag, Vols. I, II, Announcement by Prime Minister John Vorster, 20 July 1970.
 - Main points arising from Luncheon on 14 November 1989.
 - Diplomacy for Democracy. A Collection of Keynote Speeches and Contributions made towards the Liberation Struggle of South Africa by Mfanafuthi Johnstone (Jonny) Makatini, Special Representative of the African National Congress to the United Nations (1977-1987), 2012.
- Fig, D. (2009). In the Dark: Seeking Information about South Africa's Nuclear Energy Programme. In *Paper Wars: Access to Information in South Africa*. 56-87. Edited by Allan, K. Johannesburg: Wits University Press.
- Filatova, I. & Davidson, A. (2013). *The Hidden Thread: Russia and South Africa in the Soviet Era*. Cape Town: Jonathan Ball Publishers.
- Gould, C. (2009). The Nuclear Weapons History Project. In *Paper Wars: Access to Information in South Africa*. 88-121. Edited by Allan, K. Johannesburg: Wits University Press.
- Government Gazette. (1993). *South African Act on the Non-Proliferation of Weapons of Mass Destruction (Act 87 of 1993)*. Available from: https://www.gov.za/sites/default/files/gcis_document/201504/act87of1993.pdf.
- Hartley, R. (2014). *Ragged Glory: The Rainbow Nation in Black and White*. South Africa: Jonathan Ball.
- Independent Online. (2006, March 11). Koeberg: SA's ill-starred nuclear power plant. Available from: <http://www.iol.co.za/news/politics/koeberg-sa-s-ill-starred-nuclear-power-plant-1.269096>.
- International Campaign to Abolish Nuclear Weapons (ICAN). (n.d.). South Africa. Available from: https://www.icanw.org/south_africa#:~:text=Signature%20and%20ratification&text=The%20national%20assembly%20of%20South,general%20on%2025%20February%202019
- Ismail, A. (2013). The ANC's Special Operations Unit. *The Thinker*, 58: 33.
- Jackson, A.D. (2017, September 28). A Lesson for Today: South Africa, the Racial Double Standards of Nuclear Disarmament. *Atlanta Black Star*. Available from: <https://atlantablackstar.com/2017/09/28/lesson-today-south-africa-racial-double-standards-nuclear-disarmament/>.
- Kandiah, M.D. & Glencross, M.P. (2014). *South Africa Witness Seminars: The History, Role and Functions of the British Embassy/High Commission in South Africa, 1987-2013; Britain & South Africa, 1985-91*. London: Foreign and Commonwealth Office. Available from: https://kclpure.kcl.ac.uk/ws/portalfiles/portal/70715277/Witness_Seminars_Pretoria.pdf.
- Keck, M. & Sikkink, K. (1998). *Activists Beyond Borders: Advocacy Networks in International Politics*. Ithaca: Cornell University Press.
- Koeberg Aanval Sy Werk: ANC. (1982, December 20). *Die Burger*.
- Lieberman, P. (2001). The Rise and Fall of the South African Bomb. *International Security*, 26(2): 56.

- Lodge, T. (1983/4). The African National Congress in South Africa, 1976-1983: Guerilla War and Armed Propaganda. *Journal of Contemporary African Studies*, 3(1): 153-154.
- Luthuli, A. (1961, December 2). *If I Were Prime Minister*. Available from: <https://www.sahistory.org.za/archive/if-i-were-prime-minister-article-albert-luthuli-2-december-1961>.
- Maharaj, S.R. (1998, November 6). Testimony to the TRC. Available from: https://www.justice.gov.za/trc/amntrans/1998/98110206_pre_98116pta.htm.
- Massie, R. (1997). *Loosing the Bonds: The United States and South Africa in the Apartheid Years*, 1st ed. New York: Nan A. Talese/Doubleday.
- McDonald, D. (2013). A Convicted South African Terrorist Discusses the Future of His Country. *Vice*, 24 July. Available from: https://www.vice.com/en_ca/article/vdp4md/a-convicted-south-african-terrorist-talks-about-the-future-of-his-country.
- Minty, A.S. (1994). Keynote Address in Environmental Monitoring Group (EMG) & Western Cape ANC (African National Congress) Science & Technology Group. In *The Nuclear Debate: Proceedings of the Conference on Nuclear Policy for a Democratic South Africa, 11-13 February 1994*. Cape Town: EMG.
- Motumi, T. (1994). Umkhonto we Sizwe: Structure, Training and Force Levels (1984 to 1994). *African Defence Review*, 18. Available from: <http://www.iss.co.za/pubs/asr/ADR18/Motumi.html>.
- Nuclear Threat Initiative (NTI). (n.d.). *Pelindaba Treaty*. Available from: <https://www.nti.org/education-center/treaties-and-regimes/african-nuclear-weapon-free-zone-anwzf-treaty-pelindaba-treaty/>.
- Nuclear Threat Initiative (NTI). (n.d.). *South Africa*. Available from: <https://www.nti.org/countries/south-africa/>.
- O'Brien, K. (2003). A Blunted Spear: The Failure of the African National Congress/South African Communist Party Revolutionary Strategy 1961-1990. *Small Wars & Insurgencies*, 14(2).
- Ogunbadejo, O. (1984). Africa's Nuclear Capability. *The Journal of Modern African Studies*. 22(1): 19-43.
- O'Malley, P. (2003, February 21). Interview with Aboobakar Ismail. The O' Malley Archives. Available from: <http://www.nelsonmandela.org/omalley/index.php/site/q/03lv03445/04lv03833/05lv03891/06lv03900.htm>.
- Onderco, M. & Van Wyk, A. (2019). Birth of a Norm Champion: How South Africa Came to Support the NPT's Indefinite Extension. *The Nonproliferation Review*. 26(1-2): 23-41. DOI: [10.1080/10736700.2019.1591771](https://doi.org/10.1080/10736700.2019.1591771).
- Onslow, S. (2013, February 12). *Interview with Abdul Minty*. Available from: https://sas-space.sas.ac.uk/6531/1/abdul_minty_transcript.pdf.
- Organisation of African Unity (OAU). (2002). Agenda Item III: Summit Conference of Independent African States, 22-25 May 1963. In *The Treaty of Pelindaba on the African Nuclear-Weapon-Free Zone*. Edited by Adeniji, O. Geneva: United Nations Institute for Disarmament.
- Pabian, F. (2015). The South African Denuclearization Exemplar. *The Nonproliferation Review*, 21(2): 37.
- Pretoria Says It Can Build A-Arms. (1988, August 14). *The New York Times*, 16.
- Pretorius, W. & Swart, F. (1994, May 23). Wapenverbod Teen SA Kan Gou waai; Thabo Mbeki na VN met Brief van Pres. Mandela. *Beeld*, 1.
- Reddy, E. (1991). *Oliver Tambo, Apartheid and The International Community: Addresses to United Nations Committees and Conferences*. New Delhi: Sterling Publishers Private Limited.
- Reddy, E. (1994). *Anti-Apartheid Movement and the United Nations: Statements, Papers and Letters of Abdul S Minty, Honorary Secretary of the British Anti-Apartheid Movement and Director of the World Campaign against Military and Nuclear Collaboration with South Africa*. New Delhi: Sanchar Publishing House.
- Saunders, C. (2007). The Role of the United Nations in the Independence of Namibia. *History Compass*, 5(3): 740-742.
- Saunders, C. & Onslow, S. (2019). The Cold War and Southern Africa, 1976-1990. In *The Cambridge History of the Cold War*. Edited by M.P. Leffler & O.A. Westad. Cambridge: Cambridge University Press.
- Sechaba.
- (1975). Introduction. Vol. 11/12: 12.
 - (1976). International Nuclear Conspiracy with Racist South Africa. Vol. 10: 32-39.
 - (1984, February). Public Hearing Accuses South Africa of Aggression, 12.
- Shearar, J. (1993). Denuclearization in Africa: The South African Dimension. *Disarmament*, 16(2): 171-186.
- Smirnova, O. (2018, February 8). Interview with Renfrew Christie: Spying on South Africa's Nuclear Bomb. Available from: <https://www.bbc.co.uk/sounds/play/w3csvg1w1>.
- South African Democracy Education Trust (SADET), *The Road to Democracy in South Africa*.
- Volume 1: 1960-1970 (Abridged). Pretoria: Unisa Press. (2014).
 - Volume 2: 1970-1980. Pretoria: Unisa Press. (2010).
- Southern African Liaison Office (SALO). (2016). SALO Commemorates the Anniversary of Dr. Renfrew Christie's 10 Year Prison Sentence, on the 6th of June. Available from: <https://www.salo.org.za/salo-commemorates-the-anniversary-of-dr-renfrew-christies-10-year-prison-sentence-on-the-6th-of-june/>.
- South Africa History Online (SAHO). (n.d). Renfrew Leslie Christie. Available from: <https://www.sahistory.org.za/people/renfrew-leslie-christie>.

- South Africa History Online (SAHO). (2013). *The Freedom Struggle in Cape Town*. Available from: <http://www.sahistory.org.za/cape-town/conflict-among-civic-organisations?page=2>.
- Spence, J.E. (1981) South Africa: The Nuclear Option. *African Affairs*, 80(32): 441-452.
- Stam, E. (2016, June 27). Spying on Apartheid's Bomb: Espionage, Nuclear Secrets, and the Struggle for a Democratic South Africa – Renfrew Christie. Mayibuye Archives. Available from: <https://cdig.missouri.edu/spying-on-apartheids-bomb/>.
- Stumpf, W. (1996). South Africa's Nuclear Weapons Program: From Deterrence to Dismantlement. *Arms Control Today*, 25.
- Swart, F. (1994, May 24). Kernkrag: SA se rol ter sprake, Mbeki woon debat in Veiligheidsraad by. *Beeld*, 4.
- Tambo, O. (1978, March 21). Statement by the President of the ANC on the Occasion of the Launching of the International Year against Apartheid, New York. *Sechaba*, 12: 28.
- Tambo, O. (1983, July 5). Opening Speech at the First Conference of the ANC Department of Information and Publicity, Lusaka, Zambia. Available from: <http://www.anc.org.za/show.php?id=4425&t=ES>.
- The Plowshare Program. (n.d.). Available from: <https://st.llnl.gov/news/look-back/plowshare-program>.
- Truth and Reconciliation Commission (TRC).
 – Amnesty Committee Decision AM3996/96, 31 May 1999. Available from: <https://justice.gov.za/Trc/decisions/1999/ac990206.htm>.
 – Amnesty Committee Decision AC/2001/003, 16 January 2000. Available from: <http://www.justice.gov.za/trc/decisions/2001/ac21003.htm/>.
- Van Wyk, A. (2009, December). Conversation with Roelof 'Pik' Botha.
- Van Wyk, A. (2018). South African Nuclear Development in the 1970s: A Non-Proliferation Conundrum? *The International History Review*: 1152-1173. Available from: <https://doi.org/10.1080/07075332.2018.1428212>.
- Van Wyk, J. (2015). Nuclear Terrorism in Africa: The ANC's Operation Mac and the attack on the Koeberg Nuclear Power Station in South Africa. *Historia*, 60(2): 51-67.
- Van Wyk, M.S. (2005). The 1977 Arms Embargo Against South Africa: Institution and Implementation to 1997. (Unpublished Doctoral Thesis). University of Pretoria, Hatfield, Pretoria. Available from: <http://hdl.handle.net/2263/26051>.
- Von Wielligh, N. & Von Wielligh-Steyn, L. (2015). *The Bomb: South Africa's Nuclear Weapons Program*. Pretoria: Litera.
- Walters, R.W. (1987). *South Africa and the Bomb: Responsibility and Deterrence*. Lexington, Mass: Lexington Books.