

## CHAPTER FOUR

### SOUTH AFRICA AND THE INTERNATIONAL ATOMIC ENERGY AGENCY

#### 1. Introduction

Since its inception in 1957, the International Atomic Energy Agency (hereafter IAEA or the Agency) has been the primary multilateral institution to prevent nuclear proliferation, to oversee the peaceful uses of nuclear energy and to secure the safety of nuclear material and facilities. The IAEA can also be regarded as the “implementation agency” of the NPT. As a founder member of the IAEA, South Africa has subscribed to these principles. However, once the NP-led government’s nuclear weapons programme went ‘critical’ and global opposition to the Government’s domestic policies increased, relations between South Africa and the IAEA deteriorated.<sup>32</sup> South Africa was suspended from the IAEA Board of Governors (hereafter Board or IAEA Board) which is the IAEA’s principal decision-making body. It was only by the beginning of the 1990s, after South Africa had again taken up its position in the IAEA that relations normalised. However, following the return of the “prodigal nuclear son” relations have at times been strained due to South Africa’s stance and the IAEA’s demands on particular issues.

The aim of this chapter is to analyse South Africa’s nuclear diplomacy with the IAEA since the country terminated its nuclear weapons programme. Although the period between 1990 and 2010 is considered, references to earlier relations will be made. The main emphasis is the IAEA’s verification of the dismantling of South Africa’s nuclear weapons programme; the implementation of the Comprehensive Safeguards Agreement between South Africa and the IAEA from 1989 to 1994; the process of converting the SAFARI-1 nuclear research reactor from using HEU to LEU (1991-2005); South Africa’s position in favour of greater representation for developing countries on the Board (1995 onwards); its ambition to be elected to the position of Director General (2008-2009); and its refusal to support the establishment of a nuclear fuel bank in Russia under the IAEA’s auspices (2009-2010).<sup>33</sup>

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<sup>32</sup> The term ‘critical’ refers to the minimum mass of a uranium-235 (U-235) isotope required to cause a nuclear chain reaction.

<sup>33</sup> The IAEA uses the spelling Director General instead of Director-General. See <http://www.iaea.org>.

Accordingly, the objective is to show how South Africa constructed a brand of niche diplomacy in its relations with the IAEA by employing the diplomatic practices of confrontation, parallelism and partnership. It is argued that these practices have provided South Africa with material and non-material rewards that include status, prestige and trade opportunities. One of the *raison d'être* of niche diplomacy is its ability to “generate return worth having” (Henrikson 2005: 70-71), implying that a state wants to achieve non-material objectives. This, in turn, can generate international prestige, status, material benefit, soft power and moral authority. These incentives are of particular importance to convince the international community of South Africa’s commitment to continue with a non-weapons nuclear programme and to uphold its commitment to nuclear non-proliferation.

Four main themes dominate South Africa’s diplomacy with the IAEA. These are South Africa’s commitment to nuclear non-proliferation; its call for the complete elimination of nuclear weapons; its support of the inalienable right of all states to develop nuclear energy for peaceful purposes; and its call for more representation of developing countries in the IAEA. In order to contextualise these themes, the next section chronicles South Africa’s involvement in the establishment of the Agency, as well as the country’s relations with the Agency until 1990. The chapter then proceeds to an analysis of South Africa’s relations with the IAEA between 1990 and 2010 by focusing on selected case studies. The selected cases include the membership and leadership of the Board of Governors; the expansion of the membership of the Board; the IAEA nuclear fuel reserve; the Khan network; and the conversion of SAFARI-1. The chapter concludes with an assessment of South Africa’s nuclear diplomacy with the IAEA.

## **2. South Africa’s pre-1990 relations with the International Atomic Energy Agency**

The “Atoms for Peace” address to the UNGA by US President Dwight D Eisenhower on 8 December 1953 paved the way for the establishment of the IAEA. In his address, Eisenhower (1953) proposed the establishment of an atomic energy commission by stating that governments developing nuclear energy:

should begin now and continue to make joint contributions from their stockpiles of normal uranium and fissionable materials to an international atomic energy agency. We would expect that such an agency would be set up under the aegis of the United Nations.

Eisenhower (1953) also proposed that the purpose of the agency should be to “devise methods whereby this fissionable material would be allocated to serve the peaceful pursuits of mankind”. Eisenhower’s address resulted in a series of developments; most notably the establishment of the IAEA. Moreover, for South Africa it signalled its first multilateral involvement in nuclear diplomacy.

## **2.1 South Africa’s role in the establishment of the International Atomic Energy Agency (1953-1964)**

Typical of most Cold War relations, the USSR dismissed Eisenhower’s proposal. By November 1954, the US presented more concrete proposals to the UNGA for the establishment of an atomic energy agency. In December 1954, the UK presented the US with a proposed draft of a Statute for the agency to which the US responded with a revised draft of its own. In the beginning of 1955, the US, the UK, France, Canada, Australia, South Africa, Belgium and later Portugal commenced with negotiations in Washington on the Statute of the new agency based on the US/UK draft. South Africa’s involvement - as a member of the Eight-Nation Negotiating Group that also included Australia, Belgium (due to the uranium-rich Belgian Congo), Canada and Portugal (Hecht 2006: 27) - stemmed from its status as a major uranium-producing country. The main purpose of the Eight-Nation Negotiating Group was to reach agreement on the text of a Statute for the agency, establish the agency and invite other states to join as members (Fischer 1997: 30). When the USSR finally joined the negotiations on 18 July 1955 - the “first major thaw in the post-war relations between Moscow and Washington” (Fischer 1997: 31) - the proposed agency was already named the IAEA.

From 8 to 20 August 1955 the UN convened the first major international conference on the peaceful uses of atomic energy in Switzerland. The so-called “First Geneva Conference” was attended by 1 500 delegates, including scientists and engineers. More importantly, the Conference was the first ever inter-governmental gathering on

the peaceful uses of atomic energy and paved the way for the formal establishment of the IAEA. However, South Africa was not part of the negotiating group (the US, USSR, UK, France, Canada and Czechoslovakia) which met at the Geneva Conference to “consider the technical questions that would arise in drawing up a system of safeguards” (Fischer 1997: 33). At the UNGA session in 1955 it was agreed that the Eight-Nation Negotiating Group would be expanded to 12 as per a proposal of the USSR. The UNGA also took a decision that a revised version of the draft Statute would be circulated to all UN members and specialised agencies, and that the UN would host a conference towards the end of 1956 to review and finally approve the Statute (Fischer 1997: 31-34).

However, in March 1956, while the Twelve-Nation Negotiating Group met in Washington, UN Secretary-General Dag Hammarskjöld implemented the UNGA’s call for an atomic agency and established the UN Scientific Committee on the Effects of Atomic Radiation (UNSCEAR). His decision ensured that the UN - rather than the IAEA - would play the major role in securing global nuclear safety (Fischer 1997: 46).

When the US distributed the draft Statute to all UN members in April 1956, the question of China’s representation (as a permanent member of the UNSC) was still unresolved. The matter was eventually resolved and on 20 September 1956, 82 states attended the Conference on the Statute of the IAEA at the UN headquarters in New York. This was an *ad hoc* meeting of concerned states and not of the UN itself. By 23 October 1956, the Conference approved the complete revised text of the Statute. On 29 July 1957, the IAEA Statute entered into force with the ratification of the Statute by 26 states (Fischer 1997: 47, 49).

South Africa, as indicated in Section A of the Annex of the IAEA Statute, along with 18 other states, became a member of the First Preparatory Commission (PrepCom) on 26 October 1956 (the day that the Statute opened for signature) and remained a member of the PrepCom until the formal establishment of the IAEA on 3 October 1957 (IAEA 1957). These 18 states included the Twelve-Nation Negotiating Group and six other states elected by the Statute Conference. The PrepCom designated the members of the first Board of the IAEA, including:

- Canada, France, the USSR, the UK and the USA;

- Five states from other regions leading in nuclear technology (Australia, Brazil, India, Japan and South Africa);
- Two producers of uranium (Czechoslovakia and Portugal); and
- A purveyor of technical assistance (Sweden) (Fischer 1997: 64).

South Africa became a member of the IAEA on 6 June 1957. Reflecting on these negotiations, a South African diplomat and delegate at these meetings, Donald Sole (1997: 21), admitted that his “major concern in the drafting of the IAEA Statute was to secure for South Africa a seat on the Governing Body of the new agency”. Sole, who was later elected as the third Chairman of the IAEA Board, acknowledged that the South African delegation had achieved their “primary objective - a seat on the Board of Governors” (Sole 1997: 21). However, according to Sole (1997: 20), at this early stage in the life of the Agency pressure was already mounting against South Africa as a “pariah state” due to its domestic policies.

The first phase of South Africa’s diplomatic relations with the IAEA demonstrated its use of partnership as a diplomatic strategy. During this phase, South Africa’s diplomatic relations also focused on the institutionalisation of the norms of the peaceful uses of nuclear energy; nuclear disarmament; and nuclear non-proliferation. This is further evidenced in South Africa’s support for the institutionalisation of the IAEA as the main global organisation to promote and maintain nuclear safeguards for the peaceful uses of nuclear energy. However, the next phase (1965-1990) of South Africa’s diplomatic relations with the IAEA turned out to be more confrontational as a result of international opposition to the country’s domestic policies and the development of South Africa’s nuclear weapons programme and the “nuclear devices” announced by FW de Klerk in 1993.

## **2.2 South Africa’s role in the International Atomic Energy Agency (1965 - 1989)**

With the onset of the Cold War and the increase in the number of NWS, the need to prevent the proliferation of nuclear weapons culminated in the signing of the NPT in 1968 and its entry into force in 1970 (see Chapter 6). As part of nuclear export control regimes and in terms of Article I of the NPT, NWS undertook “not to transfer to any recipient whatsoever nuclear weapons or other nuclear explosive devices or control over such weapons or explosive devices” and not to “assist, encourage, or

induce any non-nuclear-weapon State to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices, or control over such weapons or explosive devices” (NPT 1970). For their part, according to Article II, NNWS undertook not to “receive the transfer”, not to “manufacture or otherwise acquire nuclear weapons” or not to “receive any assistance in the manufacture of nuclear weapons or other nuclear explosive devices” (NPT 1970).

Therefore, the NPT reiterated and expanded the IAEA’s authority by requiring that all state parties accept and apply IAEA safeguards to “all source or special fissionable material in all peaceful nuclear activities within the territory of such State, under its jurisdiction, or carried out under its control anywhere”. In addition to this, the NPT also requires state parties not to provide “source or special fissionable material” or:

equipment or material especially designed or prepared for the processing, use or production of special fissionable material, to any non-nuclear-weapon State for peaceful purposes unless the source or special fissionable material shall be subject to the safeguards required” [by the IAEA] (IAEA 1970).

During the first years of IAEA membership South Africa had complied with the IAEA Statute. This initial phase of partnership and cooperation lasted until 1964, after which South Africa’s relationship with the IAEA gradually regressed into one of confrontation. This was mainly due to the country’s domestic policies and suspicions of norm deviance as far as nuclear energy was concerned. As a result, from 1965 when Prime Minister Hendrik Verwoerd inaugurated the first nuclear reactor on the African continent (SAFARI-1) the relations between South Africa and the Agency changed. South Africa embarked on a collision course with the aforesaid normative and legal framework. For years the NP-led government denied the country’s nuclear capabilities and weapons.<sup>34</sup> Until the full extent of its nuclear weapons programme from 1969 to 1989 became evident, the relationship between South Africa and the

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<sup>34</sup> Walters (1987) and Moore (1987) reported the existence of a secret South African nuclear weapons programme prior to President de Klerk’s announcement in March 1993. Further archival and primary research by Reiss (1995); Hounam and McQuillan (1995); Van Vuuren (2003); Purkitt and Burgess (2005); Venter (2008) and Van Wyk (2010) revealed the extent of South Africa’s nuclear weapons programme from 1969 to 1989. This archival and primary research was supplemented by presentations and publications by South African scientists and military officials such as Waldo Stumpf (1995a & 1995b); and Hannes Steyn, Richardt van der Walt and Jan van Loggerenberg (2003).

Agency deteriorated and changed.<sup>35</sup> This was evidenced by a series of developments which, amongst others, contributed to South Africa losing its designation as a member for the African region on the Board in 1976 and being replaced by Egypt in 1977 (Nzo 1994: 28; Hecht 2006: 46) (see *Figure 5*).

Between 1969 and 1979, all research and development on South African nuclear explosive devices were undertaken by the South African Atomic Energy Board (AEB), the predecessor of the AEC. In 1979, this responsibility was transferred to Armscor, which operated from its so-called Circle facilities, 15km from Pelindaba where the AEC was located. The AEC, however, remained responsible for the production and supply of HEU and for theoretical and development studies on nuclear weapons technology (Von Baeckmann, Dillon & Perricos 1995: 47).

Although South Africa's nuclear explosives programme was "officially still aimed at peaceful uses until about 1977...the emphasis changed officially to a strategic deterrent capability" (Stumpf 1995a). As an adjunct of this shift in April 1978, Prime Minister John Vorster approved a three-phased "deterrent strategy" for South Africa (see *Figure 6*). More pertinent were the results of the South African nuclear weapons programme that underpinned the deterrent strategy. The first South African 'device' was completed in 1978 with more 'devices' completed at an "orderly pace of less than one per year" (Stumpf 1995a). The first aircraft-deliverable vehicle was completed in 1982. Eventually, six "nuclear devices" were produced (De Klerk 1993).

South Africa ignored repeated calls by the IAEA to subject itself to IAEA safeguards and inspections. According to Ambassador Ampie Roux (1970), the South African delegate at the IAEA, some states are "understandably reluctant to surrender, almost irrevocably, long-held sovereign rights without having precise details of all the implications". This view became South Africa's nuclear mantra until it finally ratified the NPT in 1991. South Africa's refusal to ratify the NPT meant that none of the country's nuclear research facilities and activities was covered by IAEA safeguards and inspections.

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<sup>35</sup> Waldo Stumpf (1995a) indicated that results from an indigenous uranium enrichment process were achieved as early as 1969.



**Figure 5: A summary and contextualisation of South Africa's diplomatic relations with the IAEA (1957 - 2010)**



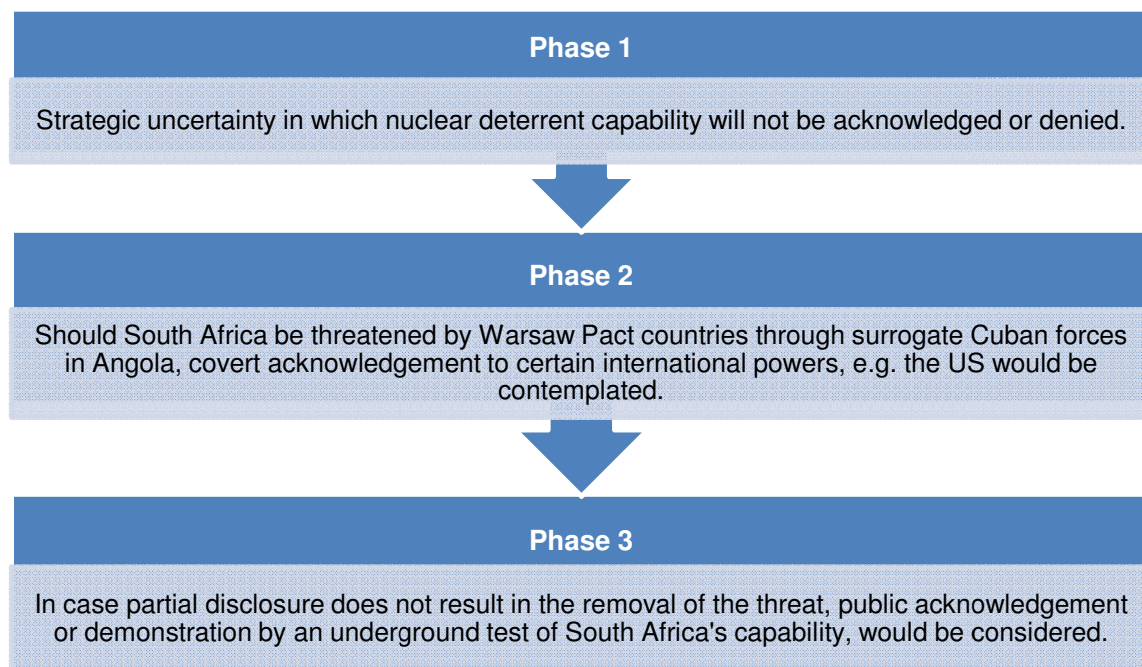
Author's own compilation

In contrast, South Africa eagerly informed the Agency of its nuclear development activities. In 1972, for example, Ambassador Roux (1972) informed the IAEA General Conference (GC) that the construction of South Africa's small-scale enrichment plant was progressing and that South African advances in nuclear



science had “far exceeded expectations”.<sup>36</sup> In 1975 Roux informed the IAEA that “apart from developing its enrichment capability, South Africa was constantly intensifying its prospecting activities”; that the first phase of the country’s pilot enrichment plant was successfully commissioned; and that feasibility studies for the construction of a “full-scale commercial plant” were completed ‘satisfactorily’ (Roux 1975).

**Figure 6: South Africa’s three-phased nuclear deterrent strategy**



De Klerk (1993) & Stumpf (1995a)

The IAEA also made various attempts to persuade the South African government to terminate its nuclear weapons programme. Amongst others these included South Africa’s suspension from the IAEA Board of Governors in 1977, a position the country held from 1957; the adoption of several resolutions against South Africa; and the institution of South Africa’s nuclear weapons programme as a standing issue on the IAEA GC agenda. Moreover, the credentials of the South African delegation attending the IAEA GC in 1979 were refused and several calls were made by,

<sup>36</sup> The IAEA GC is the highest policymaking body of the Agency. Composed of representatives of all member states of the IAEA, the GC meets annually to discuss and approve the Agency’s annual programme and budget. The GC also considers and decides on any other matters brought before it by the Board of Governors, the Director General or any member state (IAEA 1957 & 2012a).

amongst others, Nigeria and the Group of 77 (G-77), to terminate South Africa's membership of the IAEA (Khan 1997: 307) (see *Figure 6*).

Once it became clear that the IAEA attempts to influence South Africa had failed, the confrontation between the IAEA and South Africa shifted to the main organs of the UN. When the UNGA urged South Africa in December 1982 to stop the development of its nuclear weapons capability, it also requested the IAEA to discontinue its assistance to South Africa on nuclear issues and to exclude South Africa from all of its technical working groups. As the political situation in South Africa deteriorated, the IAEA Board and the GC considered the suspension of South Africa's privileges and rights of membership of the IAEA. Amidst all of these concerns, South Africa's first nuclear power station, the Koeberg Nuclear Power Station, began to supply the national power grid on 4 April 1984 (Xingwana 2004: 20).

Whereas the calls for South Africa's suspension mainly emanated from African member states such as Egypt and Nigeria, Western governments such as the US and the UK pressurised South Africa to ratify the NPT. They argued that South Africa's suspension would undermine the IAEA's efforts to engage South Africa on the termination of the country's nuclear weapons programme. Subsequent to South Africa's suspension from the Board, the GC adopted various resolutions condemning South Africa's domestic policies and its nuclear weapons programme. In addition to this, several IAEA reports on the South African nuclear weapons programme served before the GC and various resolutions calling on South Africa to submit its nuclear facilities to IAEA safeguards were also adopted (IAEA 1985 & 1986).<sup>37</sup>

Communication between the Agency and South Africa during 1984 revealed that South Africa was considering the application of IAEA safeguards for the nuclear facility Valindaba. Subsequent to meetings between the IAEA and South Africa in May 1985, an IAEA delegation visited the country in August 1985 and met with the AEC to discuss drafts of a safeguards agreement with the South African government (IAEA 1985). Despite these interactions, the South African government refused to accept the IAEA proposals. Consequently, the IAEA decided to take stricter action against the country. Despite the efforts of Western countries to influence South

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<sup>37</sup> These included resolutions of the GC, namely GC(XXVIII)/RES/423 (1985) and GC(XXX)/RES/789 (1986).

Africa to accede to the NPT, the Board decided to suspend South Africa from the Agency in June 1987 and recommended that the GC should proceed with South Africa's suspension from the Agency (Fischer 1997: 109-110).

However, South African State President PW Botha announced on 21 September 1987 that the South African government "hopes that it will soon be able to sign the NPT and has decided to open discussions with others to this end" (UN 1991: 9). Consequently, the Board decided to defer its decision to suspend South Africa's membership of the Agency. Subsequent to President Botha's announcement diplomatic efforts shifted to influencing the South African government to accede to the NPT. From August 1988, a series of talks between South African officials and the NPT depository countries, the US, the Soviet Union and the UK took place at the IAEA headquarters in Vienna. Led by South Africa's Minister of Foreign Affairs, Pik Botha, the South African delegation was mainly interested in "clarifying the cost and benefits of adherence" as well as the responsibilities under the IAEA Safeguards Agreement (UN 1991: 11). These commercial - rather than security and military - concerns date back to 1968 when South Africa explained to the UNGA that it would not submit to IAEA safeguards as it was concerned about commercial espionage. This view was repeated in 1970 when the South African Prime Minister explained to Parliament that South Africa was willing to accept IAEA safeguards on the condition that the safeguards "did not allow commercial espionage or hinder South African civilian nuclear research" (UN 1991: 11).

The next round of talks between the South African government and the depository countries took place in Vienna in December 1989. This time the South African delegation, composed of pro- and anti-NPT delegates, expressed concern about the practicalities of acceding to the NPT. The talks concluded with the South African delegation indicating that domestic concerns about accession to the NPT should first be addressed before the country could accede. However, it took almost a year to address these domestic concerns.

By September 1990, a written statement by Minister Pik Botha was circulated at the 34<sup>th</sup> Regular Session of the GC. In the statement, Botha indicated that South Africa was "prepared to accede to the Treaty" - but with a *caveat* - "in the context of an equal commitment by the other states in the Southern African region" (Minister of

Foreign Affairs 1990: 1). Moreover, Botha also indicated that his government intended to commence with talks with the IAEA on concluding a safeguards agreement with the Agency. South Africa's diplomatic effort paid off. At its conclusion, the IAEA Director General indicated that the Agency was ready to commence with talks with South Africa "without delay" (UN 1991: 11).

Thus, South Africa's diplomatic relations with the IAEA between 1965 and 1990 were characterised by confrontation as the country deviated from IAEA norms. The Agency pressurised the South African government to reveal the extent of its nuclear weapons programme, whereas the South African government refused to yield on any of the IAEA's demands due to the government's threat perception and the country's increased isolation. South Africa also faced increasing UN sanctions and was severely criticized by, amongst others, the G-77. However, as forthwith indicated, once South Africa 'returned' to the IAEA, it became a vocal campaigner for the right of developing countries to access nuclear energy for peaceful purposes.

### **3. South Africa's post-1990 relations with the International Atomic Energy Agency**

The first years of South Africa's 'return' to the IAEA overlapped with the constitutional negotiations and the political transition in the country. Since 1994, successive Government statements to meetings of the IAEA reiterated the good technical cooperation between the country and the IAEA (Nzo 1994; Mlambo-Ngcuka 1999; Xingwana 2004). This was a repetition of South Africa's historical stance on the technical - rather than political - role of the IAEA since the establishment of the IAEA (Hecht 2006: 30).

#### **3.1 The legal and diplomatic framework of South Africa's post-1990 relations with the International Atomic Energy Agency**

In 1991, South Africa concluded two major international nuclear-related agreements, namely the ratification of the NPT (10 July 1991) and the conclusion of a Comprehensive Safeguards Agreement with the IAEA (16 September 1991) (see Chapters 3 and 6). The Safeguards Agreement was preceded by the approval of the dismantling and destruction of South Africa's nuclear weapons and programme by President de Klerk and the assurance that "all of the HEU from the weapons, [was]

melted down and returned from Armscor to the AEC” by 6 September 1991 (IAEA 1993a: 7).

### **3.1.1 The verification process and the implementation of the Safeguards Agreement**

Comprising 98 articles, the Safeguards Agreement between South Africa and the Agency entered into force on 16 September 1991 (IAEA 1991). The implementation of the Safeguards Agreement, including *ad hoc* inspections of South African facilities by a team of senior IAEA officials specially appointed by the Agency’s Director General, began in November 1991. This followed the IAEA’s receipt of South Africa’s *Initial Report* (submitted on 31 October 1991) as well as the *Report on the completeness of the inventory of South Africa’s nuclear installations and nuclear material as of 30 September 1991* produced by the AEC in 1991 (AEC 1991). Notwithstanding these two South African reports, the IAEA maintained that the initial assistance provided by the South African government “was not considered to be sufficient” (AEC 1991: 2).

Between November 1991 and September 1993 the IAEA carried out 22 inspection missions in South Africa. These missions included more than 150 inspections at individual South African nuclear facilities and locations outside facilities (IAEA 1993a: 1) to “implement the [Safeguards] agreement and verify the completeness and assess the correctness of South Africa’s Initial Report” (IAEA 1993b: 27). The IAEA team found “no evidence that the list of facilities and locations outside facilities” provided by South Africa in its Initial Report was ‘incomplete’ (IAEA 1993a: 2). However, the IAEA inspection team reported that “the uranium-235 [U-235] balances they had calculated for both the pilot enrichment plant and the semi-commercial enrichment plant showed apparent discrepancies” (IAEA 1993a: 2).

Subsequent to this report, the IAEA inspection team made additional visits to South Africa to examine these U-235 discrepancies. Based on historical records provided by the AEC, the IAEA team concluded that, at the time, South Africa’s U-235 balance of the HEU, LEU and depleted uranium produced by the pilot enrichment plant “is consistent with the uranium feed” and that the amounts of HEU “which could have been produced by the pilot enrichment plant are consistent with the amounts

declared in the initial report [by the South African government]" (IAEA 1993a: 2-3). The "apparent discrepancy" in the U-235 balance of the semi-commercial enrichment plant was not resolved at the time (IAEA 1993a: 3). Against the background of the U-235 discrepancies, the US expressed concerns about the South African programme by stating that the US had "serious questions about South Africa's compliance" with its obligations in terms of the NPT (Lockwood & Wolfsthal 1993: 253).

According to Von Baeckmann, Dillon and Perricos (1995: 42), the South African verification process was 'complex' and "further complicated" by President de Klerk's announcement on 24 March 1993 which meant that the IAEA was required to extend its assignment and include nuclear weapons experts in its teams verifying the destruction and dismantling of South Africa's nuclear weapons and its programme. In addition to this, the IAEA (1993a: Annex 1; 1993a: 7) alleged that President de Klerk ordered the destruction and damage of "classified documents" and 'sensitive' equipment. In response to these allegations, the South African government invited the IAEA inspection team to assess the status of South Africa's former nuclear weapons programme. These visits occurred from 22 April to 4 May; from 3 to 11 June; and from 9 to 13 August 1993. The team had to determine the 'adequacy' of the measures taken by the South African government to destroy sensitive components of its nuclear weapons and to recover the nuclear material involved in terms of the Safeguards Agreement with South Africa (IAEA 1993a: 3).

When the IAEA inspection team visited South Africa, the dismantling and the destruction of weapons components and technical documentation (during what was designated as Operation Masada) of the country's nuclear weapons programme had been "nearly completed" (IAEA 1993a: 8). No records had been kept of the dismantling of the demonstration device or on "any of the pre-production experimental devices or on the destruction of their components" (IAEA 1993a: 8). In response to this, the IAEA inspection team recommended the "complete destruction" of all remaining "components, photographs and drawings" which could reveal any information of the nuclear material core and components (IAEA 1993a: 8-9).

The IAEA inspection team concluded that it found "substantial evidence" of the destruction of non-nuclear material components; that it found "no indication" that "substantial amounts of depleted or natural uranium used in the nuclear weapons

programme are unaccounted for”; and that South Africa’s nuclear weapons programme had been terminated (IAEA 1994a: 157). Unlike previous inspections, South African authorities provided “extensive co-operation” with the Agency in the implementation of safeguards, the IAEA inspection team “encountered a highly cooperative attitude on behalf of the South African authorities” and in arranging access to all the facilities, concluded that no information about the existence of “any undeclared facilities” could be determined and that the Vastrap test site in the Kalahari Desert was “rendered useless” (IAEA 1993a: 2, 9, 10 & 27). Despite the destruction of documentation during Operation Masada, the South African government was complimented for the “transparency and openness shown” during the verification process (Von Baeckmann, Dillon & Perricos 1995: 48). South Africa’s norm compliance was confirmed by several IAEA publications and officials (see IAEA 1993a).

The IAEA’s verification process was, according to the Agency’s publication entitled *History of the International Atomic Energy Agency: The first forty years*, “made easier by the co-operation of the South African nuclear authorities, who provided the IAEA with access and data beyond those required by its NPT safeguards agreement” (Fischer 1997: 110). Moreover, the IAEA confirmed that the South African government provided the IAEA verification team with “all the operating records of South Africa’s previously unsafeguarded enrichment plant, and permitted the IAEA inspectors ‘to go any place, any time’” (Fischer 1997: 110).

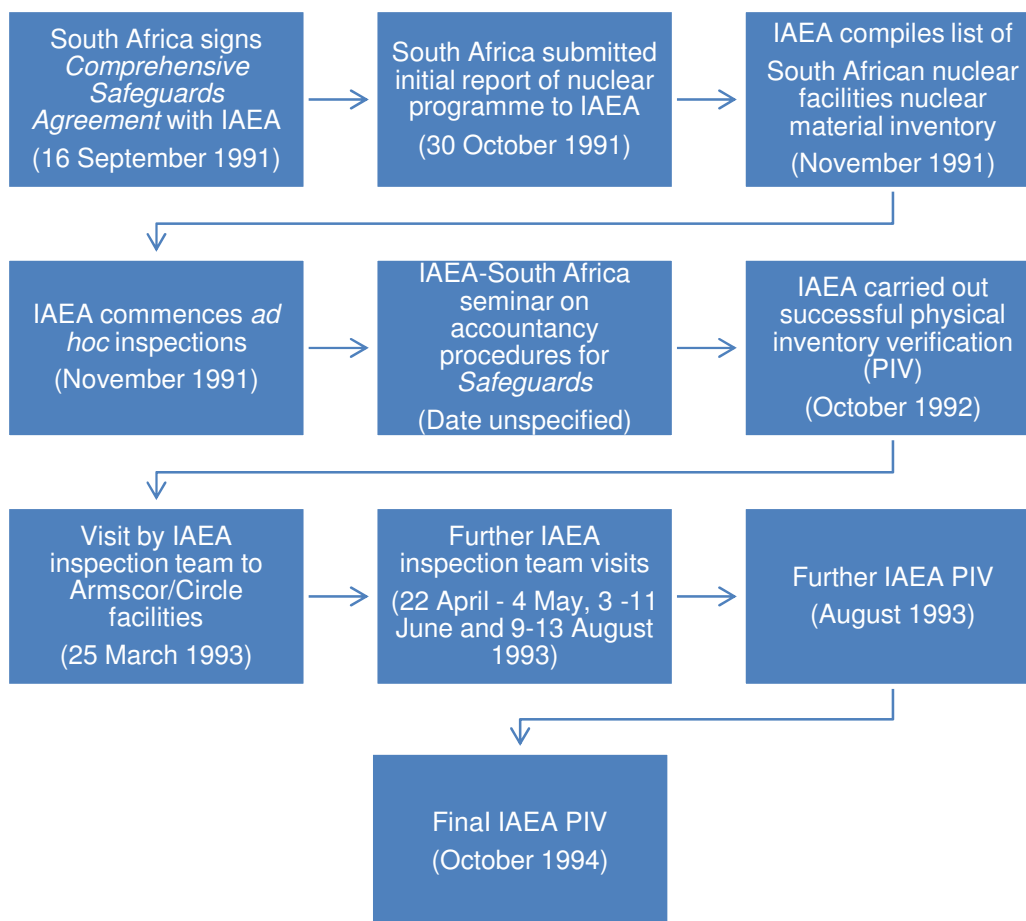
By September 1993, the IAEA (1993a: 10) concluded that the status of the Safeguards Agreement between South Africa and the IAEA was ‘satisfactory’ (see *Figure 7*). In particular, the IAEA (1993a:10, 11 & 27) reported that:

- the HEU amounts presented to the IAEA were “consistent with amounts declared in the initial report”;
- there was nothing “to suggest that substantial amounts of depleted or natural uranium used in the nuclear weapons programme are unaccounted for”; and
- There was nothing “to suggest that there remain any sensitive components of the nuclear weapons programme which have not been either rendered useless or converted to commercial non-nuclear applications or peaceful nuclear usage”.



With this, the IAEA concluded that South Africa's nuclear weapons programme had been terminated, that all South Africa's HEU had been accounted for and that no evidence of any sensitive components of the nuclear weapons programme existed as these components had been rendered useless or converted to commercial non-nuclear applications.

**Figure 7: The IAEA verification process of South Africa's declared nuclear inventory (1991-1994)**



Von Baeckmann, Dillon & Perricos (1995: 42-43, 45)

In summary, the post-1990 South African government cooperated with the IAEA during the Agency's verification process and the implementation of the Safeguards Agreement in South Africa. Employing cooperation as a diplomatic strategy paved the way for greater acceptance of South Africa's intention to comply with nuclear

non-proliferation norms. The next section outlines South Africa's bilateral agreements with the IAEA as a further indication of the Government's norm compliance during the final stages of the NP Government.

### 3.1.2 South Africa's bilateral agreements with the International Atomic Energy Agency

Apart from the Safeguards Agreement with the IAEA, South Africa concluded several other agreements with the IAEA (see *Table 11*), most of them since the termination of South Africa's nuclear weapons programme.

**Table 11: South Africa's agreements with the IAEA (1990-2010)**

Agreement	Status	Date
<i>NPT-related agreement</i>	Entry into force	16 September 1991
<i>African Regional Cooperative Agreement for Research, Development and Training related to Nuclear Science and Technology</i>	Entry into force	18 May 1992
<i>Improved procedures for designation of safeguards inspectors</i>	Accepted	19 July 1995
<i>First Country Programme Framework</i>	Implemented	1999-2004
<i>Second Extension Agreement</i>	Entry into force	4 April 2000
<i>Protocol Additional to the Agreement between the Government of the Republic of South Africa and the International Atomic Energy Agency for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons</i>	Entry into force	13 September 2002
<i>Second Country Programme Framework</i>	Implemented	2006-2010
<i>Supplementary Agreement on provision of technical assistance by the IAEA</i>	Entry into force	Not available
<i>Agreement on Privileges and Immunities</i>	Entry into force	Non-party

Of the bilateral agreements the *Protocol Additional to the Agreement between the Government of the Republic of South Africa and the International Atomic Energy Agency for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons* (hereafter the Additional Protocol) is one of the most important SA-IAEA agreements since 1990. The Additional Protocol is designed for states which have already signed a Safeguards Agreement with the IAEA. The purpose of the Additional Protocol is to strengthen the IAEA's ability to "detect undeclared nuclear material and activities in order to provide credible assurances of and confidence in the peaceful application of nuclear energy" (South Africa 2011). Signed by South Africa on 13 September 2002, the Additional Protocol, according to the South African government, placed an "extra burden on South Africa in terms of comprehensive information to be submitted and kept up to date in terms of Articles 2 and 3 of the Protocol" (South Africa 2005b). In terms of the Additional Protocol, IAEA inspectors also have greater access to South Africa's nuclear sites, facilities and activities. According to the South African government, this "additional burden" is outweighed by the "advantages in terms of strengthening our goals of nuclear disarmament and nuclear non-proliferation" (South Africa 2005b).

South Africa's diplomatic relations with the IAEA was also techno-political in nature. In 2006 South Africa concluded a second *Country Programme Framework* (CPF) agreement with the IAEA, following on the first CPF (1999-2004). This made South Africa the only African country to have concluded a second CPF with the IAEA. The latter outlines South Africa's future needs for nuclear technological cooperation and development and its main objective is for the IAEA to establish a system of "supervision and controls" in order to prevent the Agency's assistance programmes or distributed materials being used for military purposes (DST 2006). Moreover, according to the DST Director General at the time, Philemon Mjwara, the CPF is a "mutually agreed strategy for matching nuclear technology to priorities identified by South Africa for its sustainable development" (*Independent Online* 5 December 2006). By 2010, the review of South Africa's third CPF with the IAEA commenced (NECSA 2010: 25).

Apart from bilateral agreements with the IAEA, South Africa has hosted several IAEA conferences and seminars. In June 2002, for example, South Africa and the Agency

co-hosted an intergovernmental seminar for African states which was attended by 80 government representatives from at least 33 African countries. According to the South African government, the seminar aimed to “encourage African countries to honour their commitment to the non-proliferation of nuclear weapons” (*BuaNews* 20 June 2002). From 14 to 18 December 2009 South Africa’s National Nuclear Regulator (NNR) hosted the IAEA *International Conference on Effective Nuclear Regulatory Systems* (Peters 2009). The IAEA also provided South Africa with technical assistance in preparation for South Africa’s hosting of the 2010 *Fédération Internationale de Football Associations* (FIFA) World Cup (Peters 2009).

Thus, South Africa maintains comprehensive bilateral links and agreements with the IAEA. It illustrates the country’s norm compliance and its application of cooperation as a diplomatic strategy. Moreover, it also signals a return to the relations South Africa initially had with the IAEA in the early years of the Agency.

### **3.1.3 Multilateralism as South African diplomatic practice**

Since the establishment of the IAEA, South Africa has reiterated the technical - rather than political - role of the IAEA. However, as the Cold War intensified, the IAEA took on a more political role. Once South Africa’s nuclear intentions and activities became known, the relations between South Africa and the Agency also took on a more political nature.

South Africa’s position on this was reiterated in 2005 when its delegation stated that the IAEA remains the:

internationally recognised competent authority responsible for verifying and assuring compliance with the safeguards agreements of States [*sic*] Parties concluded in fulfilment of their obligations under article III, paragraph 1, of the [Nuclear Non-Proliferation] Treaty, with a view to preventing the diversion of nuclear energy from peaceful uses to nuclear weapons or other nuclear explosive devices. Nothing should be done to undermine the authority of the IAEA in this regard (South Africa 2005b).

A similar view was expressed in 2006 by the South African Minister of Energy, Buyelwa Sonjica (2006), when she informed the 50<sup>th</sup> Regular Session of the IAEA GC that South Africa is “fully committed” to the objectives of the IAEA. In 2007, Sonjica (2007) reconfirmed that, for South Africa, the IAEA is the “sole internationally recognised authority” responsible for nuclear verification. This position was further reiterated by Abdul Minty (2007b) when he informed the Board that South Africa will continue to:

support activities aimed at strengthening and developing verification capabilities to provide assurance of compliance with nuclear disarmament agreements for the achievement and maintenance of a nuclear-weapon-free world.

Minty (2008a) is also on record for recognising the IAEA as the only global competent authority pertaining to nuclear non-proliferation:

My delegation has on numerous occasions stated that the IAEA is the only internationally recognised competent authority responsible for verifying and assuring compliance with the safeguards agreements concluded with the agency.

Once the political transition in South Africa resulted in the inauguration of the GNU, South Africa’s membership in numerous international organisations, including the IAEA, was normalised. A feature of South Africa’s diplomatic relations from 1990 to 1999 was the emphasis on bilateral diplomacy. Once Thabo Mbeki became the South African president, multilateral diplomacy became a dominant feature of South Africa’s diplomatic relations (Lee, Taylor & Williams 2006). Within the context of nuclear diplomacy, South Africa continued to emphasise the importance of multilateral diplomacy to achieve global nuclear non-proliferation. The importance South Africa ascribed to multilateralism was reiterated by Deputy Minister of Foreign Affairs Aziz Pahad (2004) when he stated that South Africa maintains that “multilateralism should be and could be the only cornerstone of global security”.

## **3.2 Selected case studies of South Africa's relations with the International Atomic Energy Agency**

A selection of case studies illustrates South Africa's relations with the IAEA. Each of these cases, as will be explained, is of particular significance to South Africa.

### **3.2.1 Membership of the Board of Governors**

Article VI of the Statute refers to the composition, responsibilities and powers of the Board of Governors, whereas Article VII refers to the role and powers of the Director General of the Agency. Appointed by the Board with the approval of the GC, the Director General is the chief administrative officer of the Agency (IAEA 1957). Membership of the Board is based on two discriminatory requirements. It includes not only a geographical requirement, but also a high level of technical competency or as Article VI stipulates, members should be among the "most advanced in the technology of atomic energy including the production of source materials" (IAEA 1957). For South Africa, these discriminatory requirements have been unacceptable since it resumed its seat on the Board in 1995. Subsequently, they became a key area of the country's diplomatic relations with the IAEA.

South Africa's position on this issue is informed by the statement of President Mbeki (2006) that one of South Africa's foreign policy objectives is to terminate global apartheid and any form of discrimination: "we [South Africa] have a duty to fight against domestic and global apartheid". This was reconfirmed by the Government publication *BuaNews* (22 September 2010) and the DFA document *South African foreign policy* (DFA 1996). The discussion below elaborates on this policy position in the context of South Africa's relations with the IAEA. Therefore, this section outlines South Africa's position on the membership of the Board, as well as South Africa's efforts to lead the Board by nominating its representative on the Board, Abdul Minty, for the position of the Director General of the Agency.

### **3.2.2 Article VI of the Statute**

Historically, South Africa's position on Article VI of the Statute had been to expand its membership (Sole 1997). Since 1995, South Africa has continued to take the

position that membership should be increased to include more developing countries, thereby also removing the discriminatory geographical requirement.

In terms of Article VI of the Statute, the Board is the principal decision-making body of the Agency. Of its current 35 members, 13 are designated, including the ten “most advanced in the technology of atomic energy including the production of source materials” and the most advanced members from each of the three geographical areas not represented among the ten (IAEA 1957). The remaining 22 Board members are elected from eight area groups, namely North America, Latin America, Western Europe, Eastern Europe, Africa, the Middle East and South Asia, South East Asia and the Pacific, and the Far East (IAEA 1957). Since its establishment in 1957, the number and proportion of African and Middle Eastern members of the IAEA have increased significantly. However, the Statute initially allocated only one elective seat to Africa and the Middle East respectively. As previously indicated, South Africa’s representation on the Board dates back to 1957 when it held the designated seat for Africa on the Board until 1977 (*BuaNews* 2 December 2008).

Since the Agency’s establishment, South Africa proposed the increase of the number of African seats on the Board (Sole 1997). South Africa’s proposal was accepted when, in 1961, the Board and the GC approved the first amendment to the Agency’s Statute by adding two more elective seats for the African region. A second amendment entered into force on 1 June 1973, resulting in the increase of Board membership to 34 with developing states having a small majority (Fischer 1997: 90). Developing countries used this majority to their advantage in September 1976 when the G-77 requested the Board to review the designation of South Africa as a Board member from Africa. Egypt’s challenge of South Africa’s membership proved beneficial to it when, in June 1977, the Board decided by a vote of 19 to 13 with one abstention, to uphold the nomination of Egypt as the member state in Africa, being the “most advanced in nuclear technology including the production of source materials” as per the requirement of Article VI of the Statute (IAEA 1957).

The 1977 decision introduced a new phase of South Africa’s diplomatic relations with the IAEA as the Agency’s members joined the international community in its condemnation of South Africa’s domestic policies as well as the country’s alleged nuclear weapons programme. One of the earliest actions against South Africa was



the rejection of its delegation's credentials for the session of the GC in September 1979. The diplomatic relations between South Africa and the IAEA became tenser between 1977 and 1989.

However, with the political transition underway in South Africa, at the 38<sup>th</sup> Regular Session of the IAEA GC in 1994, South Africa was invited to "resume participation in all activities of the Agency" as a result of "her dismantling her nuclear weapons programme" (IAEA 1994b: 1). Moreover, the GC requested the Board of Governors to "review the designation of South Africa to the Board" (IAEA 1994b: 2). Once the IAEA concluded its verification process in South Africa and with Egypt's concurrence, South Africa regained its seat on the Board in 1995 (Fischer 1997: 93-94). It was only on 25 September 1995 that South Africa returned to the Board as the representative of the African region since its suspension in 1977 (Nzo 1996).

Once reinstated as a Board member in 1995, South Africa sought to improve the representation of developing countries on the Board. South Africa's call for a "stronger voice for developing countries" (*BuaNews* 22 September 2010) is in line with South Africa's stated foreign policy, as well as its self-proclaimed role as a bridge between developed and developing countries. In March 1995, Alfred Nzo formulated South Africa's position:

The position in which South Africa finds itself is that it has features both of the developed and the developing world. It is truly at the point of intersection between both worlds - an industrialised state of the South which can communicate with the North on equal terms to articulate the needs, the concerns and the fears of the developing world. Conversely we can interpret the concerns and the fears of the developed world (DFA 1996).

Moreover, South Africa's call for a "stronger voice for developing countries" (*BuaNews* 22 September 2010) was in line with the "characteristics and crucial elements of South Africa's foreign policy and international relations", which included:

- A self-ascribed role as an African leader: "South Africa should assume a leadership role in Africa in all those areas where a constructive contribution could be made without politically antagonising the country's African partners".

- An orientation of non-alignment: “The Government should continue to pursue a non-aligned approach, with due regard for South Africa's SADC, OAU, NAM and other membership commitments”.
- A specific diplomatic style and role as a bridge builder: “A diplomacy of bridge-building between the ‘North’ and the ‘South’ should be pursued”.
- Multilateralism as the preferred diplomatic practice as well as the promotion of its national interests: “In multilateral forums, South Africa should strive to promote its interests in regard to the major global issues such as respect for human rights, democracy, global peace, security and the protection of the environment”.
- A self-ascribed role as an agenda setter and norm entrepreneur: “South Africa should constantly endeavour to positively influence and change the direction of events and developments internationally, to the extent that they affect South Africa” (DFA 1996).

Against this background, South Africa on numerous occasions expressed its position on the representation of the Board members of the IAEA. As early as 1998 South Africa stated that it “regretted deeply” the little progress that has been made on the expansion of the membership of the Board of Directors, which could have “benefited Africa” (Maduna 1998: 22). South Africa indicated that it felt that this situation is “unreasonable and unfair to the Africa Group” in the GC (Maduna 1998: 22). In advocating for the expansion of the membership and representation on the Board, South Africa is cognisant of the growing interest in nuclear energy to meet the energy requirements of developing countries.

Speaking at the *Symposium on International Safeguards: Addressing Verification Challenges* in 2006, Abdul Minty (2006) observed that there is “growing concern, especially among developing countries, at the growing resort to unilateralism and unilaterally imposed prescriptions”. Moreover, according to Minty, “developing countries believe that the IAEA-established multilateral mechanism is the most effective way to address verification and safeguards issues and challenges”.

A similar view was expressed in 2007 when South Africa's Minister of Minerals and Energy, Buyelwa Sonjica (2007), stated: “I need to encourage the Secretariat to work

tirelessly in ensuring that representation of developing countries is improved.” More recently, in September 2010, Abdul Minty stated that a failure to achieve greater African and developing country representation “would delay the agency’s democratisation” (*BuaNews* 22 September 2010). Explaining South Africa’s position, Minty (2010a: 5) reiterated South Africa’s position that there should be an increase in the number of African countries on the Board in order to reflect the “proportionate increase to 42 African countries” which are members of the IAEA. This duality in South Africa’s diplomatic relations with the IAEA is not new. As Hecht (2006) indicates, since the negotiations on the establishment of the IAEA began in the 1950s, South Africa used this position as well as its identity as a unique case or a bridge builder to promote its interests in the IAEA.

### **3.2.3 Leadership of the Board of Governors**

With his election as IAEA Director General on 4 June 1997, Egyptian Mohamed ElBaradei became the Agency’s first Director General from a developing country. By the time ElBaradei’s 12 year tenure ended in 2009, deep divisions between the Board’s advanced nuclear states on the one hand, and developing and non-aligned IAEA member states that form the majority of the Board’s members on the other hand became increasingly evident (Hibbs & Persbo 2009: 21). With ElBaradei’s departure, Board members from advanced nuclear states intensified their search for a “candidate who would scale back the IAEA’s ambitions” (Hibbs & Persbo 2009: 22), preferring a “strong consensus candidate bridging divisions between industrialised and developing nations” (*Reuters* 14 May 2010).

ElBaradei’s departure presented South Africa with an opportunity to nominate a South African candidate to lead a major multilateral organisation. By 2008, South Africa had already hosted conferences of several multilateral organisations such as the AU and the NAM, and the United Nations Conference on Trade and Development (UNCTAD). On 12 September 2008, Ayanda Ntsaluba (2008), the Director-General of the South African DFA announced the nomination of Abdul Minty for the position of the Director General of the IAEA. This followed Ntsaluba’s successful request to Parliament in 2006 to extend Minty’s employment contract with the DFA (Portfolio Committee on Local Government and Administration 2006). He admitted that it is “the first time that South Africa is going to engage such a senior

position". Ambassador Minty's candidature was endorsed by the AU Summit of Heads of State and Government held in Sharm El Sheik in Egypt. According to Ntsaluba (2008), South Africa requested the "[AU's] endorsement on condition that the current Director General [Egyptian Mohamed Elbaradei] would not stand" as a gesture of African solidarity.

South Africa's efforts to become elected to the position of the IAEA Director General can be analysed in terms of Muller's (1976) typology of foreign representation. Minty's candidature is indicative of South Africa's symbolic representation at the IAEA. The country is a founder member that had served on the Board during the early years of its existence. Moreover, with South Africa's verified dismantling of its nuclear weapons programme, the country's election would be a symbolic 'return' to the country's nuclear non-proliferation origins. Moreover, Minty's election would be an example of substantive representation. This refers to the qualities and qualifications of the representative. Therefore, given Minty's background as an anti-apartheid and anti-nuclear activist, he combines these two types of foreign representation.

In presenting Minty's candidature, Ntsaluba (2008) provided the rationale for the South African government's decision. From his explanation and Minty's (2008b) comments at the announcement, there were three main reasons for the decision, namely South Africa's identity and unique nuclear experience; Minty's personal background and credentials as a disarmament activist; and South Africa's role as a bridge between developed and developing countries. With regards to the latter, Minty (2008b) reiterated South Africa's role as a bridge between these countries by stating that South Africa will be "combining the developed world and the developing world's perspective of these global issues". Minty (2008b) also returned to the duality of South Africa being:

part of the developing world and so the combination of this means we will try to bring together the perspectives of the developing countries and the developed world's perspectives to try and produce and have a possible global consensus on the kind of issues that we face.

With regard to his personal background and credentials as a disarmament activist, Ntsaluba (2008) referred to Minty's involvement in multilateral disarmament fora and issues since 1977. Amongst others, Minty served as a special consultant at the second UN-OAU Conference in Lagos, Nigeria, where the establishment of the World Campaign against Military and Nuclear Collaboration with South Africa (hereafter World Campaign) was initiated.<sup>38</sup> Established under the patronage of Tanzanian President, Julius Nyerere, and other leaders of the Frontline States (FLS), the World Campaign's sponsors included Swedish Prime Minister Olof Palme; David Steel of the UK; and Coretta Scott King, wife of the late US civil rights activist Dr Martin Luther King (Ntsaluba 2008). Between 1977 and 1994, Minty also gave evidence to the UNSC and the UNSC Arms Embargo Committee on South Africa's apartheid policies. Once Minty returned from exile to South Africa, he was appointed to the DFA in 1994 (Ntsaluba 2008).

Other aspects of Minty's candidature were his leadership qualities and contribution to the activities of the IAEA. Minty regularly attended the annual GC of the IAEA in Vienna to lobby for sanctions against the NP-led South African government. This, and other efforts, eventually resulted in the removal of South Africa from the designated seat for Africa on the Board of Governors (Ntsaluba 2008). Since his appointment as Governor for South Africa on the Board, Minty has developed a good working relationship with the African Group of the NAM and other members of the IAEA. Minty also "played a major role in shaping key decisions" of the Board (Ntsaluba 2008). In addition to this, Minty has served as an advisor to South Africa's delegation to the 1995 REC of the NPT. In 2000 and 2005, he also led the South African delegations to the RevCons of the NPT. Since June 1995, he served as the chairperson of the South African NPC and has been a member of the UN Secretary-General's Advisory Board on Disarmament Matters (2001 to 2002); President of the 50<sup>th</sup> Session of the IAEA GC on behalf of Africa (2006); and chairperson of the NSG (April 2007 to May 2008) (Ntsaluba 2008).

At the announcement of his candidature, Minty (2008b) explained the diplomatic process pertaining to the election of the IAEA Director General. Minty's explanation is produced *verbatim* and divided into distinguishable phases. The purpose is to

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<sup>38</sup> Refer to Reddy's (1994) collection of Minty's speeches, statements and writing during this period.

provide insight into the operations of the IAEA and a procedure South Africa had been involved in earlier with the election of Donald Sole, the third Chairman of the Board in the 1960s. Moreover, it provides an account of South Africa's diplomatic history and nuclear diplomacy in the words of one of its most important post-1990 diplomats in the field of nuclear issues:

**Phase 1: Commencement of process**

The formal process is that the new Board of Governors will be confirmed, some elected, at the GC of the IAEA which will be at the end of September this year [2008].

**Phase 2: Meeting of new Board, circulation of procedures and formal invitation to members to submit candidatures**

In the first week of October the new Board of Governors will meet and the Chairman of the Board of Governors will then circulate a document which will outline the procedures. The procedure is that countries will be formally invited to submit candidatures and that process will be terminated at the end of December this year [2008].

**Phase 3: Chairperson of Board employs methods to determine candidate(s) with largest support**

Then from January to June [2009] the Chairman [of the Board of Governors] can use a number of methods, or a number of methods together, to determine which candidates has [sic] the largest support. The Chair has in the past consulted with members of the Board - 35 including South Africa - and through that consultation if they find that some candidates have the support of five or six members, they may request them to withdraw - some may withdraw and some may remain in the race. In the end the procedure is that if they have to take a vote then you need two thirds support for any one candidate for the Chair - a lady this time - to feel she can then put it forward as the decision of the Board of Governors. That then goes formally to the GC next year [2009] in September and the conference endorses it. It has never happened that the GC takes a decision different from the Board so far.

**Phase 4: Vote**

The Board also meets in March next year [2009] and should they make remarkable progress and decides [sic] on the candidate in March [2009] then it would be clear from March [2009] that the Board will make a recommendation. But often because of the high level political and other interaction that takes place the Board usually makes the decision by June when it meets. That is the last meeting of the Board before the GC where it has to submit all the documentation. So the decision will be made by the Board no later than June [2009].

**Phase 5: Confirmation by GC**

Decision needs to be confirmed by the GC in September [2009].

**Phase 6: Incumbent completes term**

The current Director-General then completes his term at the end of November in 2009.

**Phase 7: New incumbent takes office**

The newly-elected Director-General will have to take over the Agency's helm by the first of December 2009.

From Minty's explanation it is clear that the election process can be divided into seven phases and that it was relatively short, its duration ranging from October 2008 until July 2009 when the election took place.

On 27 November 2008 South Africa submitted the nomination of Minty for the position of Director General to the Chairperson of the IAEA Board. In a statement on the submission, the DFA (2008b) made reference to South Africa's identity as "founder member of the IAEA" and the "most advanced country in the nuclear field on the African continent"; its role as promoter of the peaceful uses of nuclear energy; and its preferred diplomatic practice (multilateralism) as it "firmly believes in a multilateral approach as the only sustainable road" to address global issues.

Minty's main contenders included experienced candidates from Spain, Belgium, Slovenia and Japan (see *Table 12*). Realising the strength of Minty's contenders, Ntsaluba (2008) stated that:

We [the South African government] will obviously doing [*sic*] what is necessary to support ambassador Minty's candidature up to and including the fact that he will have to obviously, as this is the normal practice for this sort of things [*sic*], visit quite a number of capitals so that people could have the opportunity to pose the questions that they may wish to pose to be sure that he has the necessary credentials.

Speaking on the agenda item of the election of the Director General on 5 March 2009, Minty (2009a) outlined his commitment and intentions should he be elected by focusing on the following issues:

- The "need to maintain the Agency's impartiality and integrity";
- The role of the IAEA as the "leading international organisation seeking to accelerate and enlarge the contribution of nuclear energy to peace, health



and prosperity throughout the world, but without contributing to any military purpose”;

- Nuclear disarmament and nuclear non-proliferation;
- Strengthening the safeguards system;
- Improving the human, financial and technical resources, and operation of the IAEA;
- The political and technical role of the IAEA by stating that the Agency “by its very nature has a political role”; and
- “Inclusive and consultative leadership” and decision-making based on consensus.

**Table 12: Candidates and non-binding poll results for the position of the Director General**

Candidate	Nationality	Position	Votes received
<b>Luis Echávarri</b>	Spanish	Head of the Organisation for Economic Cooperation and Development’s (OECD) nuclear arm	4
<b>Jean-Pol Poncelet</b>	Belgian	Former Belgium Defence and Foreign Minister	0
<b>Ernest Petrič</b>	Slovenian	Judge	0
<b>Yukiya Amano</b>	Japanese	Japan’s Ambassador to the IAEA	20
<b>Abdul Minty</b>	South African	South Africa’s Ambassador to the IAEA	11

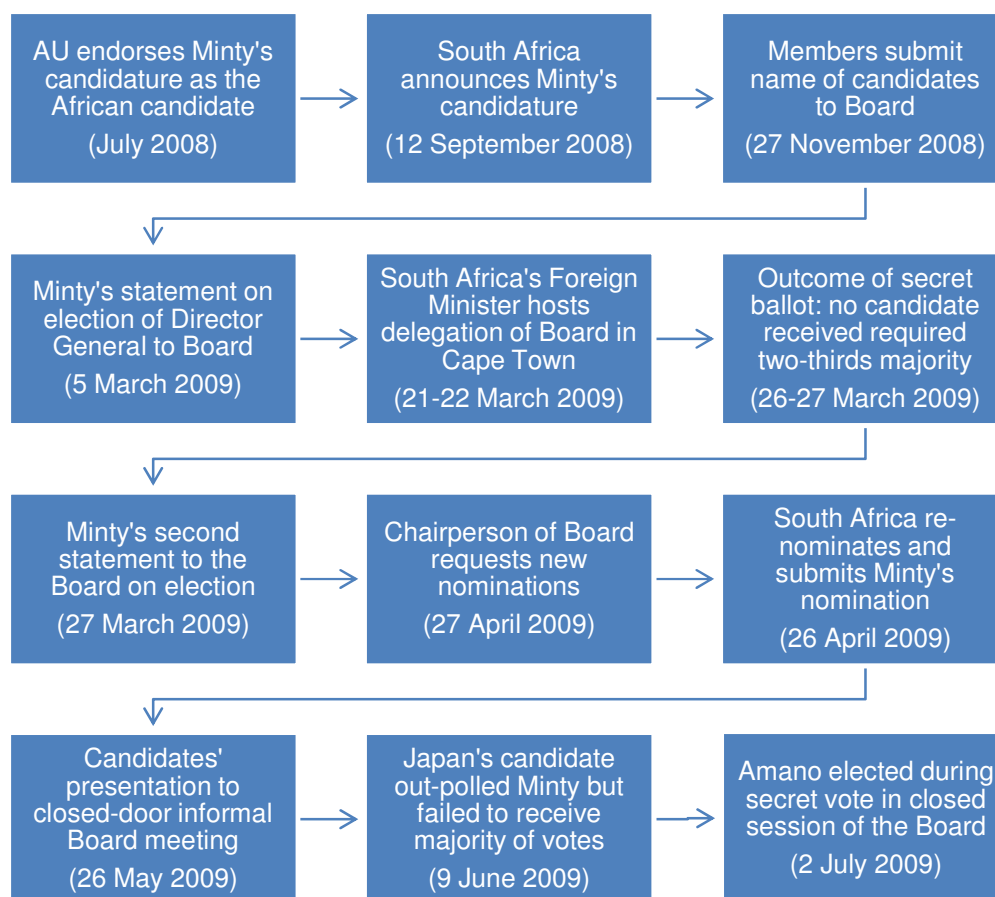
IAEA (2009c) & *Reuters* (14 May 2010)

Minty (2008a) made very few references to developing countries in his first statement on the elections but in his second statement on 27 March 2009, he returned to the issue of developing countries’ right to nuclear energy by stating that he “will also be vigilant that developing countries are not denied access to the

benefits of nuclear energy and advanced technologies needed for their own development” (Minty 2008b); a position that has often resulted in diplomatic confrontation between South Africa and NWS on the Board, especially on South Africa’s support of Iran’s nuclear programme.

On 9 June 2009 the Board of Governors conducted an informal non-binding poll on the five candidates. The purpose of the poll was to indicate to member countries if their prospects of success were declining or not (NTI 2009b). The Japanese candidate, Yukiya Amano, received the most votes, with Minty receiving the second highest number of votes. Amano beat Minty in the March 2009 run-off, but did not achieve the majority vote (IAEA 2009c).

**Figure 8: The process of the election of the Director General of the IAEA (2009)**



Minty (2008a & 2008b); DFA (2008b & 2009b); NTI (2009b); IAEA (2009c) & *Reuters* (14 May 2010)

In accepting defeat after the final secret vote on 2 July 2009, Minty (2008c) admitted that the election process “has been a long drawn out and hard fought campaign” and declared South Africa’s support for Amano’s tenure as Director General (see *Figure 8*). Ntsaluba’s (2008) “doing what is necessary” eventually amounted to more than R 3 million, which the Minister of International Relations and Cooperation, Maite Nkoana-Mashabane, confirmed (*News24* 6 September 2010).

The election of the Director General is an extremely political process requiring intense diplomatic efforts. The election of past Director Generals likewise involved their own diplomatic wrangling with both Hans Blix and Mohamed ElBaradei being elected as ‘compromise’ candidates (McGoldrick 2009: 2). Eventually, South Africa’s identity and unique nuclear experience, Minty’s personal background and credentials as a disarmament activist and South Africa’s role as a bridge between developed and developing countries did not contribute to the election of the country’s candidate as the Director General. Minty’s election failure may be regarded as a failure of South Africa’s nuclear diplomacy.

Despite a concerted effort by South Africa to support Minty’s candidature, Western countries with nuclear capabilities supported the Japanese candidate. The South African candidate whose activist credentials may have worked against him, whereas developing countries preferred a “moderate G-77 candidate” (*Reuters* 14 May 2010), namely South Africa’s Abdul Minty, who was “intensely opposed by most advanced nuclear members” (Hibbs & Persbo 2009: 22). Another aspect which may have undermined Minty’s election was the South African government’s ongoing support of Iran’s nuclear programme.

#### **3.2.4 The Nuclear Fuel Reserve**

South Africa has repeatedly expressed the view that there should be “no unwarranted restrictions on the inalienable right of states to the peaceful application of nuclear energy” (Minty 2007b). In this way, South Africa has adopted a position on the upholding of all states’ nuclear sovereignty.<sup>39</sup> Its support of Iran’s right to develop

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<sup>39</sup> Nuclear sovereignty refers to a state’s right to use nuclear energy for peaceful purposes. In Chapter 7, the concept is discussed in the context of the provisions of the NPT. Article IV of the NPT provides for “the inalienable right of all the Parties to the Treaty to develop research, production and use of nuclear energy for peaceful purposes without discrimination”.

nuclear energy for peaceful purposes has resulted in several diplomatic confrontations between South Africa and other Board members.

South Africa's support of the "inalienable right" of all states to develop nuclear energy for peaceful purposes has also resulted in diplomatic partnerships on the issue with India, Brazil and the NAM (Pahad 2006b & 2008b). As a NAM member South Africa subscribed to the Movement's support of the "basic and inalienable right" of a state (including Iran) to "develop research, production and use of atomic energy for peaceful purposes, without any discrimination and in conformity with their respective legal obligations" in terms of Article IV of the NPT (Pahad 2008b). In an indirect reference to the opposition of states such as the US and the UK to Iran's nuclear programme and their efforts to influence the IAEA in this matter, the 2008 NAM Ministerial Conference reiterated the role of the IAEA as the:

sole competent authority for verification of the respective safeguards obligations of Member States and stressed that there should be no undue pressure or interference in the Agency's activities, especially its verification process, which would jeopardize the efficiency and credibility of the Agency (Pahad 2008b).

Apart from its support of Iran and the right of developing countries to develop nuclear energy, South Africa's position on nuclear sovereignty and the inalienable rights of states to develop nuclear energy was illustrated by its opposition to the nuclear fuel reserve established under the auspices of the IAEA.

The origins of the idea of a nuclear fuel reserve go back to 2006. Addressing a summit of the Eurasian Economic Community on 25 January 2006 in St. Petersburg, Russian President Vladimir Putin proposed the creation of a Global Nuclear Power Infrastructure (GNPI) which would establish a network of service providers to provide full fuel-cycle services; including uranium enrichment; fuel fabrication; and reprocessing to states lacking such capabilities. He also suggested that these facilities should be placed under IAEA safeguards and that they would provide states with fuel cycle services on a non-discriminatory basis. According to Putin, his proposed initiative aimed to limit the proliferation of sensitive technologies while

providing nuclear fuel supply assurances to states that refrain from acquiring full fuel-cycle capabilities (UN 2006).

In a subsequent interview, Minty indicated that South Africa would not support the Russian initiative since it would ‘preclude’ South Africa and developing countries from pursuing uranium enrichment (quoted in *News24* 22 March 2006); especially as the South African *Nuclear energy policy for the Republic of South Africa* of 2008 indicated the Government’s intention to enrich uranium (DME 2008). South Africa’s stance on the NWS position to limit newcomers’ efforts to develop nuclear energy was linked to South Africa’s relations with developing countries.

Speaking at the GC of the IAEA in September 2006 (a few months after Putin’s proposal), the South African Minerals and Energy Minister, Buyelwa Sonjica, stated that South Africa cannot support “unwarranted restrictions” on countries that have decided to use nuclear energy for peaceful purposes in terms of the NPT (*BuaNews* 19 September 2006). She repeated a common theme of South Africa’s diplomacy, namely the prevalence of global inequities and observed that the:

imposition of additional restrictive measures on some NPT member states, while allowing others to have access to those capabilities, only served to aggravate existing inequalities that were already inherent; and undermined one of the central bargains contained in the treaty (*BuaNews* 19 September 2006).

Sonjica also referred to another theme, namely the support of “the unambiguous principle” enshrined in Article IV of the NPT which states that nothing in the NPT:

shall be interpreted as affecting the inalienable right of all parties to develop research, production and use of nuclear energy for peaceful purposes without discrimination and in conformity with Articles I and II (*BuaNews* 19 September 2006).

Russia’s 2006 proposal also included the establishment of several global International Nuclear Fuel Centres (INFCs) and its offer to host the first INFC. Kazakhstan joined the Russian initiative and, on 26 October 2006, the construction of a joint Russian-Kazakh enrichment centre at the Angarsk Electrolysis Chemical

Plant in eastern Siberia along with plans to enrich uranium from Kazakhstan was announced (UN 2006).

At the Board of Governors meeting in June 2009, Director General Mohamed ElBaradei (2009a) proposed the establishment of a LEU reserve under IAEA auspices. In addition, Russia proposed the idea of an “assurance of supply mechanism” (ElBaradei 2009a). In presenting the idea of a LEU bank to IAEA members, ElBaradei reassured members that the purpose of the IAEA LEU bank and the Russian proposal was to “provide assurance of supply over and above countries’ existing rights”. Moreover, he reiterated that the proposed fuel bank “does not limit countries’ rights in any way” and that “no state would be required to give up any of its rights, including the right to develop its own fuel cycle”. The Director General’s proposal entailed a physical LEU bank at the disposal of the IAEA as a “last-resort reserve for countries with nuclear power programmes which face a supply disruption for non-commercial reasons” and accessible to all states in order for states that “they might not need their own enrichment or reprocessing capability” (ElBaradei 2009a & 2009b). The rationale for ElBaradei’s (2009b) proposal was to “move from national to multinational control of the nuclear fuel cycle”.

Developing states, including South Africa, perceived ElBaradei’s nuclear fuel cycle initiative as intended to prevent them from benefitting from nuclear energy and technology (Hibbs & Persbo 2009: 22). ElBaradei’s proposal to commence with the planning of a multilateral civilian nuclear fuel supply was blocked by the Board on 18 June 2009 (NTI 2009c). However, later in 2009, the IAEA approved the establishment of the first international nuclear fuel repository. Twenty-eight IAEA member states voted in favour of the establishment of the facility, whereas six members abstained. In abstaining from the vote, South Africa agreed with Tunisia, Venezuela, Ecuador, Brazil and Argentina not to support the nuclear fuel reserve. Pakistan did not vote.

In what can be regarded as a reaction to the IAEA decision to establish a nuclear fuel reserve, South Africa’s Minister of Energy, Dipuo Peters (2009), reiterated South Africa’s intention to secure its own fuel supply for “future national energy needs” at the 53<sup>rd</sup> Regular Session of the IAEA GC in 2009. The Minister also indicated that various feasibility studies were undertaken by NECSA with the cooperation of some

“international players in fuel cycle services” (Peters 2009). In addition to this, Peters (2009) also announced that laboratories and facilities were under construction to “facilitate [the] re-establishment of fuel cycle operations in South Africa”.

By December 2010, the repository referred to above opened a uranium enrichment facility at the International Enrichment Centre (IEC) at Angarsk in Siberia (Russia). This followed an IAEA-Russian agreement to reduce nuclear proliferation and uranium processing by providing LEU to any IAEA member country that could be denied access to conventional nuclear fuel markets (NTI 2010c; *World Nuclear News* 1 December 2010). Under IAEA safeguards, the IEC would ensure an uninterrupted supply of LEU for nuclear power generation. Apart from funding the establishment of the 120 tonnes reserve, Russia also funded the maintenance, storage, safety, security and safeguards of the IEC.

At the time of Russia’s initial proposal of a global nuclear fuel reserve in 2006, Abdul Minty (2006) reiterated that developing countries maintain that it is “the basic and inalienable right of all states” to “develop research, production and use of atomic energy for peaceful purposes” and that this right “should be without any discrimination and in conformity with their respective legal obligations”. Minty (2006) pre-empted the outcome of the vote by some development countries on the establishment of the nuclear fuel reserve by stating their:

choices and decisions in the field of peaceful uses of nuclear technology and its fuel cycle policies must be respected. Just as for developed countries, developing countries also have a sovereign right to make their own decisions consistent with their national priorities and interest.

The decision by the South African government on nuclear fuel announced by Minister Peters (2009) signals a major departure from IAEA policies as well as the use of parallelism as a diplomatic strategy with South Africa initiating nuclear fuel facilities parallel to the IAEA’s nuclear fuel reserve.

South Africa employed confrontation as a diplomatic strategy in the IAEA’s establishment of the nuclear fuel reserve. It regarded NWS to be promoting their interests above those of other members of the IAEA despite the provision of Article



IV of the NPT. In addition to this, the South African government's decision not to support the initiative may have also undermined Minty's candidature. South Africa was protecting its national interests, especially since it was conducting feasibility studies to recommence with its uranium enrichment programme.

### **3.2.5 The AQ Khan network and the Wisser *Affaire***

Since 1994, it was very important for the Government to gain the trust of the international community on South Africa's commitment to nuclear non-proliferation. Presidents Mandela (1998) and Mbeki (2004a) and the government officials have repeatedly reiterated South Africa's commitment not only to nuclear non-proliferation but also to complete disarmament (DIRCO 2010c: 42). On this, ambassador Minty (2008a) clearly formulated South Africa's position:

The South African national liberation movement and after 1994, democratic South Africa has a long and consistent record of commitment to and engagement on the need to eliminate all weapons of mass destruction.

A few months after the involvement of South Africans in the AQ Khan network, Minty (2005) reconfirmed South Africa's position on nuclear non-proliferation and nuclear disarmament:

South Africa continues to believe that nuclear disarmament and nuclear non-proliferation are mutually reinforcing processes that require continuous and irreversible progress on both fronts. We are convinced that the only real guarantee against the use or threat of use of nuclear weapons is their complete elimination and the assurance that they will never be produced again ... South Africa believes that nuclear weapons do not guarantee security, rather, they distract [*sic*] from it. The longer nuclear weapons exist, the longer the world will have to wait to be free from the use or threat of use of such weapons. Many also fear that such weapons could also fall into the wrong hands. However, our belief is that nuclear weapons are illegitimate, irrespective of whose hands these weapons are in. Those who rely on nuclear weapons to demonstrate and exercise power should recognise that such

dependence on weapons of mass destruction only serve *[sic]* to increase insecurity rather than promote security, peace and development.

Speaking at a symposium on safeguards in October 2006, Minty (2006) yet again reiterated South Africa's position on nuclear non-proliferation and nuclear disarmament and reminded the audience that South Africa's position on the "mutually reinforcing processes" of nuclear non-proliferation and nuclear disarmament is widely documented:

The total elimination of all nuclear weapons is our common objective, and, therefore, the issues of nuclear disarmament and nuclear non-proliferation are inextricably linked to each other. Our concerted efforts to prevent the proliferation of nuclear weapons should be matched by a concurrent effort to eliminate, in a verifiable and irreversible manner, all nuclear weapons and universal adherence to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT).

This position has resulted in South Africa confronting states such as the US and China who support the idea of the limitation (rather than elimination) of nuclear weapons. South Africa's position on this has also resulted in partnerships. One such partnership is the India-Brazil-South Africa Dialogue Forum (IBSA). As early as IBSA's second summit in 2007, India, Brazil and South Africa repeated their commitment to the goal of the "complete elimination of nuclear weapons and expressed concern over the lack of progress in the realisation of this goal". These states also emphasised that nuclear disarmament and nuclear non-proliferation are "mutually reinforcing processes requiring continuous, irreversible progress on both fronts". IBSA members also stated that the objective of non-proliferation can be achieved by the "systematic and progressive elimination of nuclear weapons in a comprehensive, universal, non-discriminatory and verifiable manner" (Minty 2008a).

Nevertheless, South Africa's partnership with its fellow IBSA states requires more reflection. In the context of the NSG, South Africa supported the exception granted to India not to require an Additional Protocol in terms of the NSG Guidelines in terms of the US-India nuclear cooperation agreement. South Africa, however, opposed the proposal to grant an exception to Argentina and Brazil (NTI 2012). In both cases,

South Africa maintained that nuclear non-proliferation norms were compromised but it continued to cooperate with other states to protect the integrity of the export control regime as a member of NAM and in terms of its identity as a middle power.

More importantly, for South Africa the “primary goal” of its nuclear-related activities and diplomacy remains the promotion of South Africa as a “responsible producer, possessor and trader of advanced nuclear technologies and should adopt positions publicly supporting international peace and security” (DIRCO 2010c: 42). It was, therefore, a diplomatic embarrassment when a series of events caused the international community to raise concerns about South Africa’s commitment to non-proliferation (see Chapter 3).

In an effort to control the diplomatic damage caused by the *Wisser Affaire*, South Africa requested the IAEA to seal the 11 containers confiscated at Tradefin Engineering. Through the South African Police Service (SAPS), the Government maintained control over the containers and equipment. In updating the IAEA Board on the events, Minty (2004: 2) confirmed that all material, documentation and instruments confiscated at various locations were placed “under IAEA seal” (Minty 2004: 2). In further efforts to counter the diplomatic damage caused by the Khan network and the *Wisser Affaire*, the South African government issued several statements at IAEA gatherings reiterating its “principled policy regarding nuclear disarmament” while warning against the acquisition of nuclear weapons capabilities by states and non-state actors (Xingwana 2004: 21).

In a statement on safeguards; non-proliferation; and nuclear weapon free zones made in New York in May 2005, the South African government outlined the diplomatic process it followed in order to address the issue. It indicated that South Africa (2005b), in cooperation with other affected countries and the IAEA, conducted a “thorough and urgent investigation” into the Khan network. South Africa (2005b) also expressed its gratitude to the IAEA for the “important role” that it has played in the investigation of the network that had led to the prosecution of those contravening South Africa’s non-proliferation legislation. The South African government also indicated that it would “continue to closely co-operate with these and others involved in the investigations into the international illicit network and efforts to ensure its elimination” (South Africa 2005b).

During the period that Wisser's case served before a South African court, Minty (2007b) once again reiterated South Africa's position on illicit nuclear proliferation networks. He maintained that South Africa:

remains concerned about the illicit clandestine nuclear networks" and he also called on states that "[i]t is imperative that all countries that have been affected by the network closely co-operate to eliminate this threat. Our own experiences with the illicit network for the transfer of and trade in nuclear material, equipment and technology have clearly shown that States need to provide their pro-active and full support to the Agency in its verification obligation.

A few months after the sentencing of Wisser, Minty addressed the second PrepCom for the 2010 NPT RevCon in Geneva on 29 April 2008. Repeating South Africa's earlier views on illicit nuclear networks, he warned of the dangers of these networks as they pose "one of the most serious challenges to the international community" (Minty 2008c). Minty also suggested that the international community "effectively and decisively take appropriate action" against these networks.

For South Africa, its response to the Wisser *Affaire* had several diplomatic implications. As previously indicated, South Africa's use of multilateral diplomacy throughout the process is clear from its cooperation with affected European states and the IAEA. South Africa was also required to improve its diplomatic communication on its commitment to nuclear non-proliferation (Minty 2007). These measures resulted in cooperation and partnership as diplomatic strategies.

A third implication for South Africa's nuclear diplomacy was the opportunity to demonstrate leadership; the opportunity to assert its identity as a state committed to nuclear non-proliferation; and renewed norm entrepreneurship. To the extent that it related to the IAEA, South Africa (2005b) proposed the review and improvement of controls over nuclear material, technologies and equipment in order to "prevent nuclear weapons proliferation and illicit trafficking". Once the establishment of an Advisory Committee on Safeguards and Verification to improve the effectiveness of the IAEA's safeguards system took effect, South Africa also proposed that IAEA members should use the opportunity to "evaluate and possibly agree on

recommendations that could improve the safeguards system” (Minty 2006). Following the break-in at NECSA’s headquarters, Pelindaba, on 8 November 2007, South Africa invited the IAEA to assist the country in assessing and improving the security of Pelindaba. At the time South Africa observed that the IAEA’s visit could also benefit other IAEA members in the “implementation of their nuclear security policies and the improvement of relevant guidelines”.

A similar request for the improvement of safeguards was made by South Africa’s Minister of Energy, Dipuo Peters (2009), in her address to the IAEA GC in September 2009. South Africa also made a greater diplomatic effort to emphasise the role of the Agency as the “sole competent authority in the field of nuclear safeguards and verification”, reiterating that it “attaches great importance to the role, authority, impartiality and integrity of the Agency and would not wish to do anything that would reduce or undermine its solemn responsibilities” (Minty 2006). Continuing with its self-ascribed role as the voice of developing countries at the IAEA, South Africa also proposed that developing countries should receive more support in the implementation of their agreements with the IAEA.

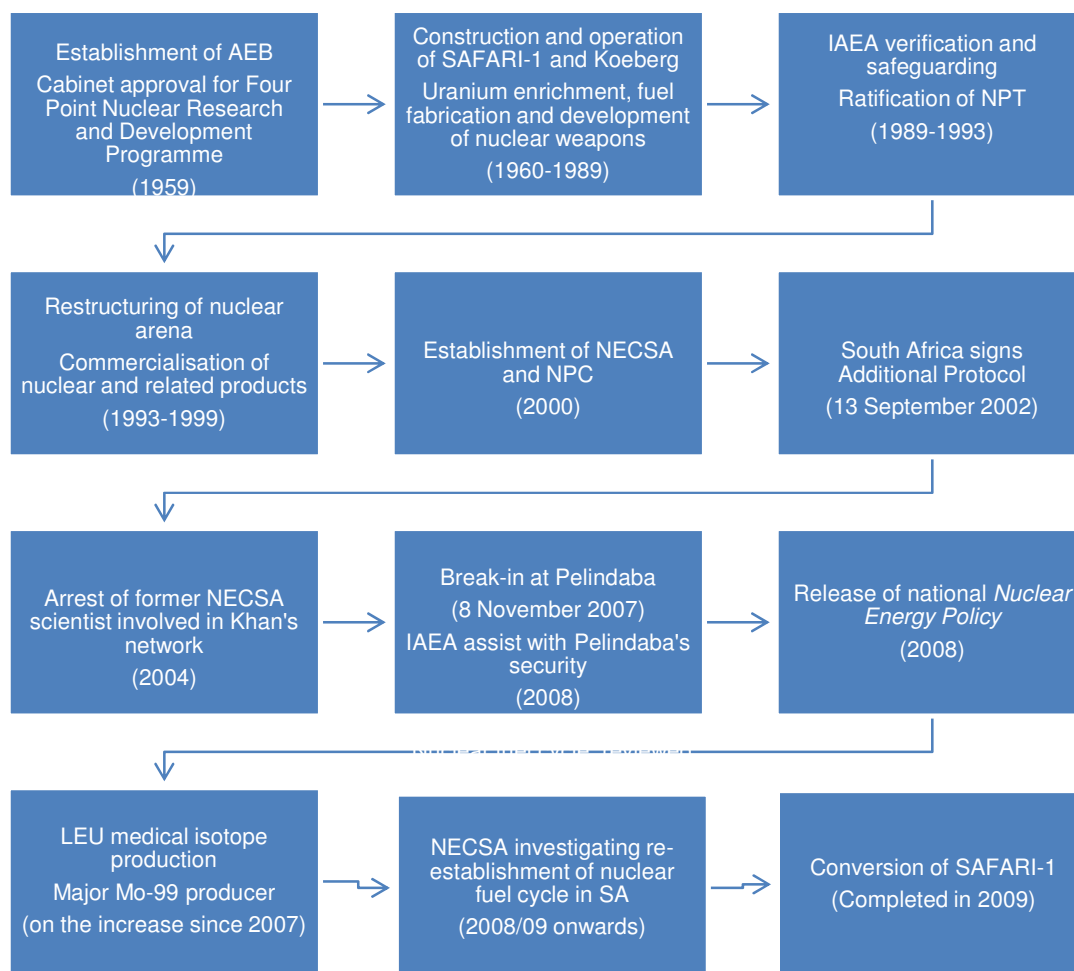
Whereas this section focused on South Africa’s nuclear non-proliferation experience since it terminated its nuclear weapons programme and on its diplomatic strategies of cooperation, confrontation and parallelism, the next section outlines the country’s relations with the IAEA against the background of the provision in the IAEA Statute that all states have an inalienable right to develop nuclear energy for peaceful purposes.

### **3.2.6 The SAFARI-1 conversion and isotope production**

In the wake of 9/11, international concerns about the threat of nuclear terrorism increased. Through its *Nuclear Security Plan 2006-2009*, the IAEA and its members cooperated to improve nuclear security worldwide and counter illicit nuclear trafficking (IAEA 2008a). One of these efforts was to shift the use of HEU to LEU in commercial applications through the conversion of nuclear reactors (IAEA 2010a: 8). However, these initiatives were preceded by IAEA diplomatic efforts to influence the South African government to convert South Africa’s nuclear research reactor, SAFARI-1, from using HEU to LEU.

Initiated in 1960 as a 20 megawatt (MW) tank-in-pool type light water reactor, the operation of the SAFARI-1 nuclear reactor was affected by South Africa's international isolation.<sup>40</sup> In 1976 an international embargo was instituted against the supply of nuclear fuel to SAFARI-1. This did not deter the South African government from using SAFARI-1 to commence with uranium enrichment, *inter alia*, for its nuclear weapons programme.

**Figure 9: Events and developments in the existence of NECSA**



IAEA (1994b, 2008b & 2010b); Damane (2001); NECSA (2003 & 2009); DME (2008) & Adam (2009)

<sup>40</sup> SAFARI-1 was inaugurated by Prime Minister Hendrik Verwoerd in 1965.

Following the post-1994 developments, the diplomatic focus between South Africa and the IAEA also shifted to the conversion of SAFARI-1 from HEU to LEU as some IAEA members remained cautious of South Africa's nuclear intentions. By 1993, SAFARI-1's operations shifted from military purposes to commercial applications, especially producing medical isotopes, using HEU from South Africa's inventory verified by the IAEA (Vlok 2006: 2). However, the IAEA demanded the conversion of the nuclear reactor; an issue South Africa was hesitant to address as SAFARI-1's HEU-based operations provided South Africa with considerable scientific status and prestige; valuable income from its isotope production; and even some deterrent status.

As the successor of the AEB, NECSA is the contact point between the South African government and the IAEA (see *Figure 9*). NECSA is also, in terms of the Nuclear Energy Act 46 of 1999, responsible for the management of South Africa's Safeguards Agreement with the IAEA and the country's nuclear material to prevent nuclear proliferation. Subsequent to the efforts of the IAEA, the South African government authorised the conversion of SAFARI-1 in July 2005 and financed the conversion to the amount of R 12 million *per annum* for three years (De Waal & Galeni 2005).

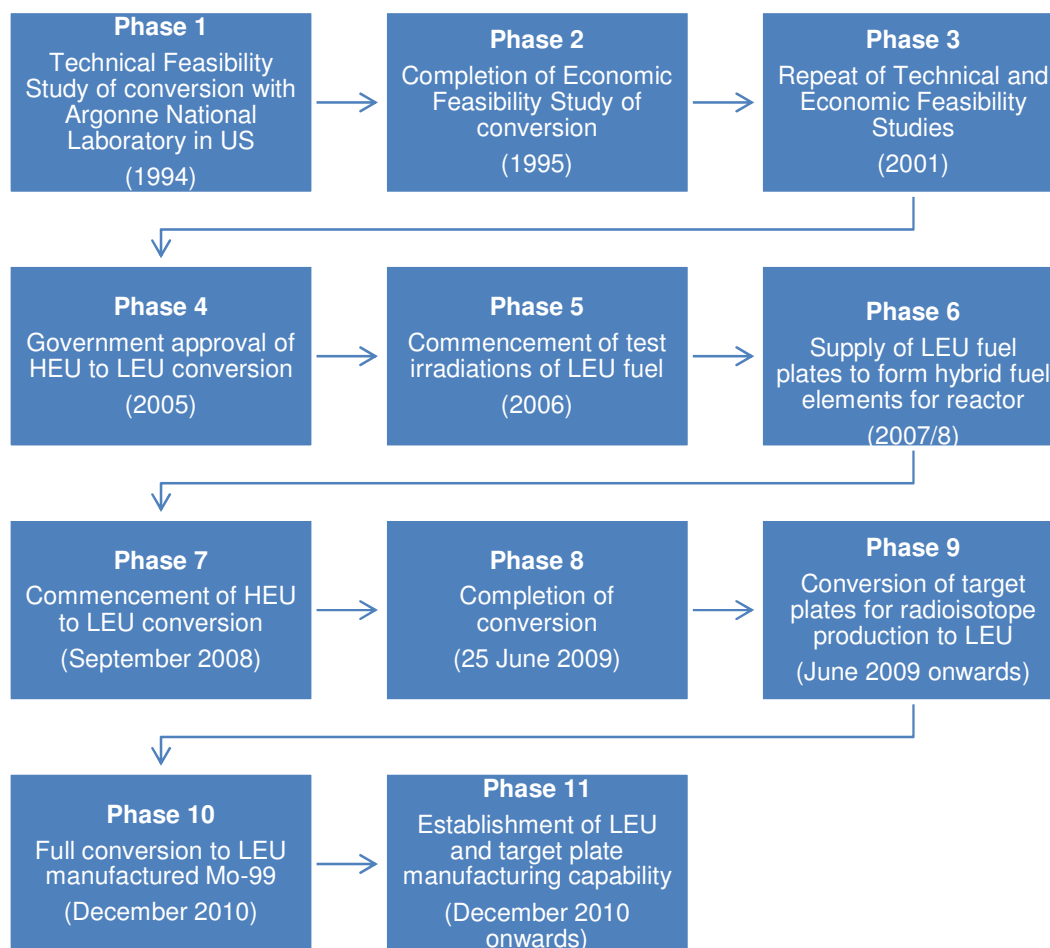
According to Piani (2007: 4), a SAFARI-1 nuclear scientist at NECSA, the original conversion process was to be completed over three to four years in two main phases, namely the establishment of a local LEU manufacturing capability, which NECSA manufactured (NECSA 2010: 11), and the conversion of the SAFARI-1 core from HEU to LEU fuel. By 2010, the latter phase had already resulted in NECSA (2010: 21) producing 83 LEU fuel elements and 18 control rods (see *Figure 10*).

By 2008, NECSA (2008: 16) reported that "good progress" had been made with the conversion of SAFARI-1 through a cooperation agreement with AREVA-CERCA, a French state-owned nuclear power utility which provided NECSA with LEU fuel plates. On 25 June 2009, SAFARI-1 used LEU for the first time since it went critical on 18 March 1965 (IAEA 2009d). Announcing the successful conversion, NECSA (2009) stated that the conversion was "in line with international norms to reduce proliferation risks" and that it will 'enable' South Africa to promote South African products as "non-proliferation compliant" and enable "preferential treatment" in key



markets such as the US, and in other international joint ventures. This statement correlates with Colby's (2011) observation that states base the conversion of their nuclear reactors on economic, political, military and technical considerations. From 2009 to 2010 NECSA's subsidiary, NTP Radioisotopes (Property) Limited (hereafter NTP), earned South Africa considerable foreign exchange amounting to R 623 million, exceeding its sales target for the period by 21 percent (*Reuters* 1 March 2010). Moreover, the NECSA (2009) statement is indicative of the strategies of cooperation and partnership, especially as they relate to South Africa's relations with the IAEA.

**Figure 10: The schedule for the SAFARI-1 conversion**



Piani (2007: 4) & NECSA (2008: 16; 2009 & 2010: 21)

More important than the aforesaid considerations are the diplomatic considerations of and diplomatic ‘returns’ on the conversion (Colby 2011). For South Africa, the successful conversion was beneficial in non-material terms. Not only did it receive international recognition from the IAEA, but its status and prestige were advanced by the scientific expertise, as well as by the moral authority, associated with the conversion. By April 2010, during President Obama’s NSS in Washington, South Africa announced that it “quite ambitiously, had not only adopted a national policy of HEU-free production of medical isotopes - that is, using only LEU for both fuel and targets - but it also had developed the technology to carry it out” (Pomper & Potter 2010). In 2010, NECSA announced that its subsidiary, NPT Radioisotopes, had become the first and only company in the world producing the medical isotope Molybdenum-99 (Mo-99) on a commercial scale using LEU-based technology (NECSA 2010: 5; *World Nuclear News* 14 April 2010).<sup>41</sup>

**Table 13: Major reactors producing and supplying all types of medical isotopes**

Reactor producing and supplying medical isotopes	Country of origin	Years in operation (in 2009)	Share of global production (percentage)
<b>NRU (Chalk River)</b>	Canada	52	40
<b>BR-2 (Mol)</b>	Belgium	48	10-15
<b>HFR (Petten)</b>	The Netherlands	48	30
<b>Osiris (Saclay)</b>	France	43	5-8
<b>SAFARI-1 (Pelindaba)</b>	South Africa	44	10-15

IAEA (2010a: 156; 2010b: 3)

The South African Minister of Energy (2010) also observed that South Africa “will be the first radioisotope producing country to have completed this conversion process, which is a requirement for supplying radio isotopes into certain key markets”. Reporting on South Africa’s activities to the 54<sup>th</sup> Session of the IAEA GC,

<sup>41</sup> The medical isotope Mo-99 is used in diagnostic tests for illnesses such as cancer and heart disease.

ambassador Minty (2010a: 4) announced that, since July 2010, South Africa had been the world's largest supplier of Mo-99 based on LEU. Subsequently, the IAEA (2010b: 8) recognised that South Africa's conversion of SAFARI-1 to LEU as the "first step" towards LEU target conversion by a 'major' <sup>99</sup>Mo producer.<sup>42</sup>

In 2010, the IAEA (2010a: 18-19) acknowledged that subsequent to the conversion of SAFARI-1, South Africa became the world's "first large scale" producer of Mo-99, whereas it was only the world's third largest isotope producer in 2007, according to NECSA Chief Executive Officer (CEO), Rob Adam (2007). Moreover, in 2010, the IAEA (2010b: 2) recognised SAFARI-1 as one of the world's major five isotope producers. In 2010, South Africa (NTP); Canada (MDS Nordion); Belgium (*Institut National des Radioéléments*); France (Osiris); and The Netherlands (Covidien) produced 95 percent of the medical isotope Molybdenum-99 (Mo-99) (Ahmad 2009: 286; IAEA 2010a: 151) (see *Table 13*). Other Mo-99 producing countries include Australia, Argentina, China, Malaysia, Brazil, Russia, Poland, France, India, Kazakhstan and Uzbekistan (Ahmad 2009: 286-287; IAEA 2010a: 153).

Through SAFARI-1's conversion, South Africa has contributed to a redefinition of the concept "nuclear symbolism", which previously referred to the idea that a state's nuclear weapons capability "symbolizes a strong, independent and modern state". By referring to the LEU requirements set by some isotope-importing countries to which South Africa now complies with, NECSA (2009) has added "nuclear leverage" to South Africa's nuclear diplomacy. Through the conversion, the country also acted as a norm entrepreneur as a state that previously had a HEU-based nuclear weapons programme. In addition to this, it has become a country that produces medical and other isotopes from LEU, thereby illustrating its commitment to nuclear non-proliferation and the peaceful uses of nuclear energy. With this, South Africa has consolidated its identity as a major nuclear power and moral authority in the developing world.

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<sup>42</sup> The IAEA (2010b: 8) has been involved in 'fostering' developments in the production of Mo-99 for more than three decades. Since 2007, disruptions such as planned and unplanned shut-downs of major Mo-99 producing reactors in Canada and The Netherlands affected the global production and supply of Mo-99 (IAEA 2010a: 155).

#### **4. An assessment of South Africa's relations with the International Atomic Energy Agency**

In an assessment of South Africa's international relations policy from 1994 until 2010, DIRCO (2010c: 38-42) identified South Africa's major foreign policy "priorities and objectives" which includes, amongst others, the consolidation of the African Agenda; the strengthening of South-South cooperation; the strengthening of North-South cooperation; participation in the global system of governance; and the strengthening of political and economic relations. This section assesses South Africa's relations with the IAEA and all these foreign policy priorities and objectives in the context of norm compliance and state identity.

##### **4.1 The African Agenda and South-South cooperation**

With regards to its position on the consolidation of the African Agenda and strengthening South-South cooperation, South Africa has cooperated and established partnerships with African and other developing countries on issues such as the reform of the IAEA, and has advocated the expansion of developing countries' representation on the IAEA Board (hence also Minty's nomination for the position of Director General of the IAEA) as well as their right to develop nuclear energy for peaceful purposes. South Africa's position has also been evident in discussions on the establishment of the IEC in Russia as South Africa maintains that the nuclear fuel reserve will prevent some countries from obtaining enriched uranium for developmental purposes. Moreover, South Africa exports medical isotopes to several developing countries and therefore promotes the Millennium Development Goals (MDGs); a key objective of the IAEA. This application of South Africa's nuclear expertise and industry is a major departure from the earlier position taken by the head of the ANC Environment Desk, Thami Sokutu (1994: 238) in February 1994. Addressing a conference on *Nuclear policy for a democratic South Africa* he stated that: "The nuclear industry should be phased out in the shortest possible time".

In 2001, the South African Minister of Minerals and Energy, Phumzile Mlambo-Ngcuka (2001) declared that "(t)he nuclear energy industry in South Africa, although relatively small, plays an important role in our country". According to her, the South African nuclear industry, at the time, employed approximately 2 700 people and

accounted for foreign exchange earnings of R 330 million in 2000 through the export of uranium oxide by the Nuclear Fuels Corporation of South Africa (NUFCOR) and of medical isotopes by NECSA (Mlambo-Ngcuka 2001).

#### **4.2 North-South cooperation**

On the issue of strengthening North-South cooperation, South Africa has used its position as a member of the IAEA Board to cooperate and form partnerships with traditional diplomatic partners of the North. Addressing the National Assembly on 18 May 1995, Minister of Foreign Affairs Alfred Nzo (1995: 114-115) highlighted some of South Africa's earliest foreign policy dilemmas, namely balancing relations between the developing and industrialised countries while South Africa sought to expand its relations with Africa and the developing world. Nzo cautioned that South Africa cannot afford to "overlook or downgrade the importance of the industrialised countries" to South Africa's national interests. Moreover, South Africa also advocated that IAEA members from developed countries should assist members from developing countries to comply with the IAEA Statute and with other IAEA obligations. However, South Africa's conversion of SAFARI-1 to use LEU provides a very good indicator of North-South cooperation, as well as cooperation and partnerships in the IAEA.

South Africa's intention to participate in the global system of governance has been clearly evident in its membership of the Board once it resumed its seat in 1995 after its suspension in 1977. According to the Government, its foreign policy attaches great importance to multilateralism for the "resolution of global challenges and places the UN [and hence the IAEA as an agency of the UN] at the centre of the multilateral system" (DIRCO 2010c: 38-42). An example of this is its cooperation with the IAEA on its verification process in South Africa.

More importantly, South Africa's participation in the global system of governance is also evident in its repeated commitment; diplomatic actions; and statements on nuclear disarmament, non-proliferation and arms control to promote international peace and security. On this issue, Minister of Foreign Affairs Nkosazana Dlamini-Zuma (2007a) noted that the ANC-led government had at an "early stage" decided that the country should be an active participant in various non-proliferation regimes

and suppliers groups; that it should adopt positions publicly supporting the non-proliferation of WMDs; and use its position as a member of the nuclear export control regimes, the Africa Group in the IAEA and the NAM to promote nuclear non-proliferation. In pursuance of this, South Africa in the IAEA supported the “inalienable right of nations to use nuclear technology for peaceful purposes” (DIRCO 2010c: 42).

### **4.3 Norms and state identity**

From 1989 onwards, South Africa engaged in norm re-enactment by ratifying the NPT and allowing the IAEA to verify the dismantling of its nuclear weapons programme. South Africa has reconstructed its state identity as a NWS to a state that has terminated its nuclear weapons programme and that complies with the IAEA Statute’s nuclear non-proliferation norms (see *Figure 11*). In this respect, South Africa acted as a morally responsible and good global citizen. Moreover, it acted as a leader on behalf of the developing countries on the Board.

Once the IAEA completed the verification of the termination of South Africa’s nuclear weapons programme in 1993, South Africa engaged in norm compliance by restructuring its nuclear regulatory environment and adherence to the IAEA Statute. South Africa’s construction of a norm-abiding identity as a responsible producer, possessor and trader of advanced nuclear technology is even more significant in this respect.

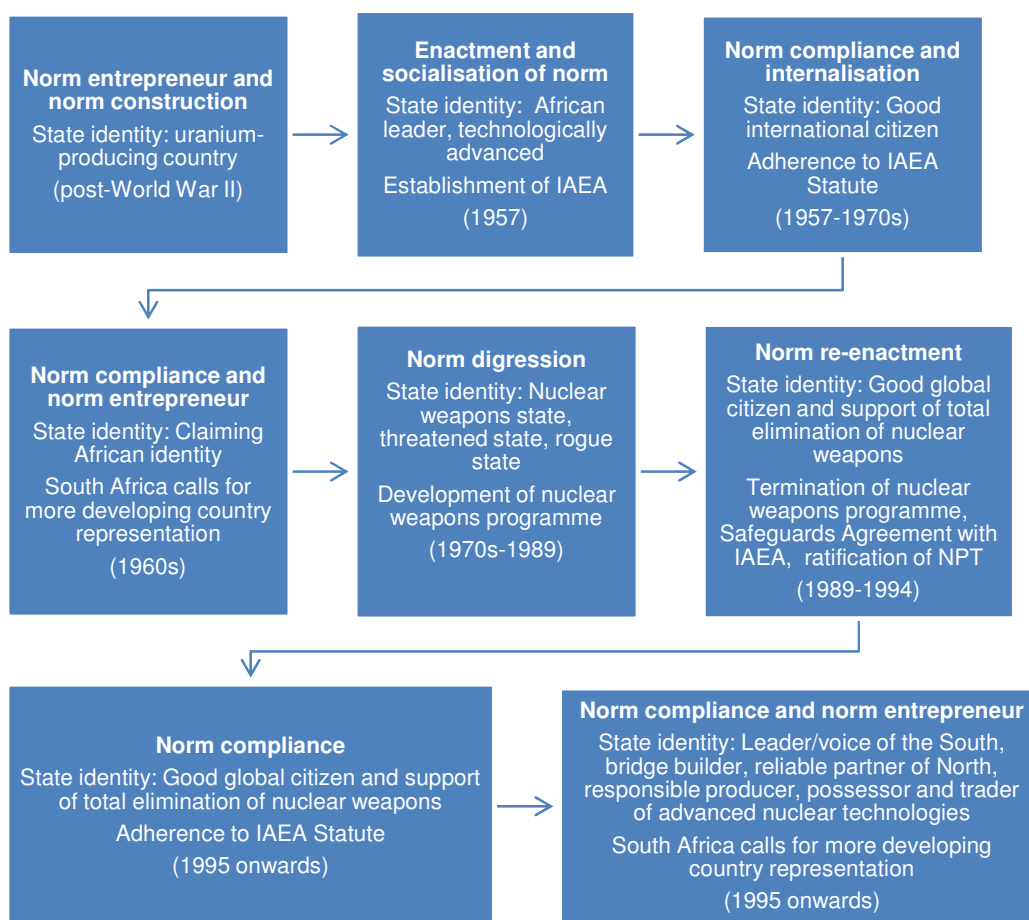
South Africa has also exerted its influence as a norm entrepreneur in the context of the IAEA. This is evident in South Africa’s stance on the use of LEU and the representation of developing countries on the IAEA Board.

### **4.4 South Africa’s diplomatic conduct at the International Atomic Energy Agency**

South Africa’s diplomatic conduct at the IAEA follows the country’s stated foreign policy objectives. It maintains its preference for multilateral diplomacy; especially in the context of the G-77 and the NAM at the IAEA. It has emerged as a campaigner for more representation of developing countries and their right to the peaceful uses of nuclear energy. South Africa’s diplomatic relations with the IAEA and its members

display several aspects of the country’s nuclear diplomacy since 1989. South Africa has not only constructed a new state identity and role but has also constructed and advanced its national interests in its diplomatic relations with the IAEA. Apart from gains in its material interests through the conversion of SAFARI-1 and the increase in its isotope production and exports, South Africa also gained in a non-material sense through the status and prestige it acquired due to its often quoted “unique identity”. Finally, South Africa has consistently promoted the norm of nuclear non-proliferation; the norm behind the existence of the IAEA and the idea of the peaceful uses of nuclear development to improve human security.

**Figure 11: South Africa’s norm construction and state identity in the IAEA**



DFA (1996); Koh (1997: 2598-2599); Finnemore & Sikkink (1998: 894-905); Farrell & Lambert (2007: 97; 104-105) & DIRCO (2010c: 38-42)



## 5. Conclusion

This chapter considered South Africa's nuclear diplomacy with the IAEA in respect of two major phases. The first phase covered South Africa's relations with the Agency since its establishment in 1957 until 1990. The second phase covered the period subsequent to 1990. Initially the first phase (until 1964) was characterised by the country's initial norm entrepreneurship and norm compliance. The period subsequent to the inauguration of SAFARI-1 and the development of a nuclear deterrent strategy contributed to the increased isolation of South Africa. In the context of the Cold War, the NP government attempted to protect the integrity and national security of South Africa. In the IAEA, South Africa's eventual refusal to comply with non-proliferation norms entrenched in the IAEA Statute resulted in the country's suspension from the Board in 1977, and the rejection of the South African delegation's credentials and Egypt's replacement of South Africa as the designated African country on the Board in 1979. As South Africa's nuclear capabilities increased, the Agency adopted a more strict approach towards the country. This resulted in a decision in 1987 to suspend South Africa from the Agency. However, subsequent decisions by President PW Botha resulted in the IAEA deferring this decision. Nonetheless, the latter part of this first phase was characterised by confrontation as a diplomatic strategy.

The second phase coincided with the presidency of FW de Klerk with South Africa cooperating with the IAEA to verify the complete dismantlement of the country's nuclear weapons programme. South Africa's norm compliance is evident in a series of agreements it signed with the IAEA. Despite its identity as a state that had dismantled its nuclear weapons programme, South Africa's diplomatic strategy towards the IAEA also involved confrontation on issues such as the expansion of the membership of the Board, the establishment of a nuclear fuel reserve and the right of developing countries to use nuclear energy for peaceful purposes. Although the conversion of SAFARI-1 was eventually concluded, it took a number of years to complete. Finally, South Africa's leadership ambitions were also evident during the post-1990 period. However, Abdul Minty's candidature for the position of the Director General of the Agency failed despite Government efforts to prevent this.

As a founder member, South Africa's return to the IAEA Board of Governors in 1995 represents a major development in its post-1990 nuclear diplomacy. The IAEA's

verification of South Africa's terminated nuclear weapons programme and the country's membership on the Board added weight to its nuclear diplomacy and, amongst others, paved the way for South Africa's ratification and the entry into force of the *African Nuclear Weapons Free Zone Treaty* (the Pelindaba Treaty).