

CHAPTER THREE

SOUTH AFRICA AND THE NUCLEAR NON-PROLIFERATION EXPORT CONTROL REGIMES

1. Introduction

On 10 July 1991 South Africa became a State Party to the NPT. However, it was only after President de Klerk's 1993 announcement that the country had produced at least six "nuclear devices" that the full extent of the country's nuclear weapons programme became known. De Klerk's announcement also raised the questions of how South Africa developed its nuclear weapons capability, and which countries assisted it during this process. In other words, it raised questions on the country's position, involvement and non-compliance with the norms of the nuclear non-proliferation export control regimes operational at the time.¹⁶

Subsequent to his election as South African President on 14 September 1989, FW de Klerk, according to Waldo Stumpf (1995a) of the AEC, "instructed that an investigation be carried out to dismantle the nuclear deterrent completely with the aim of acceding to the NPT as a state without a nuclear weapons capability". A first report on the matter was submitted to President De Klerk in November 1989 and he subsequently appointed an Experts Committee under the chairmanship of Prof Wynand Mouton, a nuclear physicist, to outline procedures to dismantle and destroy South Africa's "nuclear devices" (De Klerk 1993). These developments paved the way for a new phase in South Africa's nuclear diplomacy and more pertinent to this chapter is that this phase paved the way for South Africa's greater involvement in and compliance with nuclear export control regimes.

The aim of this chapter is to analyse South Africa's involvement in multilateral nuclear export control regimes as a representative case study and manifestation of South Africa's nuclear diplomacy as a FNWS. As a former illicit importer and exporter of nuclear-related equipment South Africa was determined to project itself

¹⁶ For the purpose of this study, the concept nuclear non-proliferation export control regimes is used interchangeably with the concepts multilateral nuclear export control regimes; nuclear export control regimes; or nuclear export regimes.

as a rehabilitated nuclear weapons state. Despite this and as will be pointed out, the South African government's efforts were undermined by a series of contentious nuclear proliferation-related incidents, most notably the involvement of South Africans in the Khan proliferation network.

The chapter is divided into three main sections. The first section defines and analyses the nuclear non-proliferation export control regime. The second section analyses South Africa's institutional framework to comply with its international commitments due its membership of various nuclear export control regimes. The final section includes an analysis and assessment of South Africa's nuclear diplomacy *vis-à-vis* these regimes. In particular, the chapter analyses the links of the Khan network with South Africans, and their implications for the country's niche diplomacy and state identity.

2. Nuclear non-proliferation export control regimes: definition and utility

A regime can be defined as “sets of implicit or explicit principles, norms, rules and decision-making procedures around which actors' expectations converge in a given area of international relations” (Krasner 2009: 113). Regimes are more than mere temporary arrangements that change with shifts in power and interests. Regimes imply certain norms and expectations, but also a specific form of cooperation. Regime-governed behaviour are not based on short-term interests only but also on the principle of reciprocity. In accepting reciprocity, a state will sacrifice its short-term interests with the expectation that other states will reciprocate, even if they are not obliged to do so. For Krasner (2009: 114), principles and norms “provide the basic defining characteristic of a regime”. Several explanations for regime development can be provided. According to Krasner (2009: 120), some explanations are based on a state's egotistic self-interest; political power; norms and principles; habit and custom; and knowledge.

Global nuclear export or nuclear non-proliferation regimes originated prior to the Second World War as the US, the UK, the USSR, Japan and Germany competed and cooperated to develop nuclear technology, equipment and material (IISS 2007: 8). Originally established as the international “Atoms for Peace” organisation within the UN, the IAEA was the first multilateral effort to create a nuclear export regime.

The *Statute of the IAEA* (hereafter IAEA Statute or the Statute) came into force on 29 July 1957 with the objective to:

accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world. It shall ensure, so far as it is able, that assistance provided by it or at its request or under its supervision or control is not used in such a way as to further any military purpose (IAEA 1957).

Article III of the Statute outlines the functions of the organisation, namely to encourage and assist the development of nuclear science and technology for peaceful uses; overseeing the safety and security of nuclear material and installations for peaceful uses; and enforcing safeguards and verification processes with regards to nuclear disarmament (IAEA 1957).

A former Under-Secretary General for Disarmament Affairs at the UN, Jayantha Dhanapala (2003: vii), explained the need for nuclear export controls by stating:

The exponential growth in dual-use technology around the globe is redefining national interests and deeply complicating national capacities to regulate trade in sensitive technologies. It is, therefore, important to pursue the efficient and effective implementation of national non-proliferation export controls, while ensuring their responsiveness to new challenges.

Thus, the significant range of technologies, material, equipment and raw materials used to construct nuclear weapons also have legitimate civilian, or peaceful, applications; hence the so-called dual-use dilemma for states (Early 2009: 3).

Multilateral nuclear non-proliferation export control regimes can be defined as “laws, regulations and norms designed to regulate the transfer of WMD components, materials and technologies” (Beck & Gahlaut 2003: 2). Nuclear non-proliferation export controls, which form part of these regimes, are defined as:

laws that regulate the export and sharing of sensitive technologies, equipment, software, and related data and services to foreign states and citizens, including to foreign nationals or representatives of a foreign entity on

domestic territory, for reasons of national security and/or protection of trade (Early 2009).

Both definitions refer to the regulation of various objects through several instruments. These controls are not necessarily complete prohibitions. Rather, they require that licenses or government permission be obtained for the export or dissemination of controlled goods and dual-use technologies.

Multilateral nuclear non-proliferation export control regimes share the following characteristics. They are voluntary, informal and impose no legally-binding obligation on their participants; they involve like-minded states; they have exclusive membership criteria; they rely on states' voluntary cooperation, consensus agreement, and communication to improve national export controls; and they enable the coordination of national nuclear export control policies to control the proliferation of controlled goods through the joint implementation of common export control lists by participating governments. Therefore, members can trade more freely with one another because they know that such trade is safe (Early 2009).

The utility of nuclear export controls is wide-ranging. Firstly, they preserve global security by preventing the spread of nuclear weapons or nuclear WMDs by deviant international actors. In an address to the NSG, former IAEA Director General and Executive Chairman of the UN Monitoring, Verification and Inspection Commission (UNMOVIC), Hans Blix (1997: 11) expressed the importance of export controls, stating that "export control is an important component in the efforts to prevent further nuclear proliferation".¹⁷ Secondly, nuclear export controls can delay the acquisition of nuclear WMDs. In the third instance, export controls "buy time" for diplomatic channels to operate. A fourth utility is that these controls also serve as a deterrent by increasing the cost of acquiring WMDs. In the fifth instance, they contribute to the protection of commercial interests and secure trade in dual-use goods between countries. Finally, nuclear export controls assist to "reinforce international non-proliferation norms" (Beck & Gahlaut 2003: 2-4; Bertsch 2003: ix; Early 2009; Krasner 2009: 117). Therefore, these regimes offer significant benefits to states.

¹⁷ UNMOVIC was responsible for investigating Iraq's nuclear weapons programme prior to the US-led invasion of Iraq in March 2003. Maintaining that Iraq did not have any WMDs in contrast to the view held by the US government, Blix resigned from UNMOVIC in June 2003.

3. The principal nuclear non-proliferation export control regimes

The UN Office of Disarmament cites six principal multilateral export control regimes, namely the Zangger Committee (ZC); the Nuclear Suppliers Group (NSG); the Wassenaar Arrangement (WA); the Missile Technology Control Regime (MTCR); the Australia Group (AG); and the Proliferation Security Initiative (PSI) (UN 2011b). This section outlines each of these regimes and, where relevant, refers to South Africa's nuclear diplomacy pertaining to these regimes.

The decision on 31 August 1994 of the Nelson Mandela-led Cabinet to accept Minister of Foreign Affairs Alfred Nzo's proposals that South Africa should actively participate in various international non-proliferation regimes and suppliers groups; use its position to promote nuclear non-proliferation publicly; and ensure that export controls are not discriminatory against developing countries, introduced a new era for South Africa's nuclear diplomacy (Markram 2004: 12). The Cabinet decision also set the tone for the country's subsequent employment of multilateral diplomacy as an approach to the country's nuclear diplomacy. Some of the early results of this decision were South Africa's membership of multilateral nuclear export control regimes such as the MTCR and the NSG in 1995, as well South Africa's participation in the 1995 REC.

3.1 The Zangger Committee

Established in 1971, the Zangger Committee (ZC) is one of the oldest nuclear export control regimes and not formally part of the NPT regime. The purpose of the ZC, also known as the NPT Exporters Committee, is to "harmonize the interpretation of nuclear export control policies for NPT Parties" - especially the interpretation of Article III (paragraph 2) of the NPT (ZC 2010a), which requires:

Each State Party to the [Nuclear Non-Proliferation] Treaty undertakes not to provide: (a) source or special fissionable material, or (b) 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 this article (IAEA 1970).

In deciding to designate its status as ‘informal’, its membership as voluntary and its decisions legally non-binding, the ZC had, in 1972, reached consensus contained in two memoranda. These covered several issues most notably the definition of and procedures for the export of materials and equipment described, but not defined in Article III (paragraph 2) of the NPT (ZC 2010b: 2). Members of the ZC agreed to apply these two memoranda as a so-called *Trigger List* (ZC 2010a) (see *Table 4*) since they refer to the containment of equipment, items and material whose export would ‘trigger’ the need for safeguards to be implemented (SIPRI 2005: 711).

Table 4: The Zangger Committee’s *Trigger List*

Memorandum	Contents of <i>Trigger List</i>
Memorandum A	Defines two categories of nuclear material: <ul style="list-style-type: none"> • Source material: natural or depleted uranium and thorium • Special fissionable material: plutonium-239, uranium-233, uranium enriched in the isotopes 235 or 233
Memorandum B	Identifies equipment and material specifically designed or prepared for the processing, use or production of special fissionable material in the following categories: <ul style="list-style-type: none"> • Nuclear reactors • Non-nuclear materials for reactors • Reprocessing • Fuel fabrication • Uranium enrichment • Heavy water production • Conversion

ZC (2010b: 3)

In addition to the two memoranda, the ZC’s *Understandings* and *Trigger List* also reflect the requirements set out in the NPT, with the following three conditions of the export or supply of items specified in its *Trigger List*:

- *Condition #1: Non-diversion.* Exports of source or special fissionable material to NNWS shall not be diverted to nuclear weapons or other nuclear explosive devices.
- *Condition #2: Subject to IAEA safeguards.* Exports of source or special fissionable material, as well as transferred equipment and non-nuclear

material, to NNWS shall be subject to safeguards under an agreement with the IAEA.

- *Condition #3: Re-export based on acceptance of safeguards.* Source or special fissionable material, and equipment and non-nuclear material shall only be re-exported to a NNWS if the recipient state accepts IAEA safeguards on the re-exported material or equipment (ZC 2010a; ZC 2010b).

Unlike the NPT and the provisions of the IAEA Statute, verification and compliance arrangements of the ZC are informal and its decisions are not legally binding upon its members. Member states have also agreed to exchange information about exports or issues of licences for exports to any NNWS which is not party to the NPT, through the ZC's system of "Annual Returns" (CNS 2010). The establishment of the ZC and NSG (see section 3.2) are examples of the international norm of nuclear non-proliferation on the conduct of suppliers which should prevent the transfer of nuclear commodities and technologies to specific users for specific purposes. Another norm developed by these organisations is that of transparency. To advance greater transparency, the IAEA has assisted supplier states in publicising their supplier arrangements. The IAEA also publishes the *NSG Guidelines* and *Trigger List*, and the *Zangger Understandings* and *Trigger List* (Thorne 1997: 25-26).

By 2010, the ZC had 37 members, including all NWS; some NNWS; and South Africa which became a member of the ZC on 23 October 1993 (DIRCO 2011a).¹⁸ According to the South African government, the *raison d'être* of the ZC is to "establish guidelines for implementing the export control provisions" of the NPT and to "define and monitor trade in goods and equipment specially designed for nuclear use" (DIRCO 2011a). In South Africa, the ZC Controls are implemented by NECSA, the state-owned nuclear energy corporation (DIRCO 2011a).

¹⁸ By August 2010, the ZC's 37 members included Argentina, Australia, Austria, Belgium, Bulgaria, Canada, China, Croatia, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Kazakhstan, South Korea, Luxemburg, The Netherlands, Norway, Poland, Portugal, Romania, the Russian Federation, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Turkey, Ukraine, the UK and the US. The European Commission is permanent observer at the ZC.

3.2 The Nuclear Suppliers Group

Also known as the “London Club”, the NSG was established in 1974 as an informal voluntary institution. Its establishment followed the explosion of a nuclear device by India (a NNWS at the time), which “demonstrated that nuclear technology transferred for peaceful purposes could be misused” (NSG 2010a).¹⁹ In 1978, the NSG published its *Guidelines* “to apply to nuclear transfers for peaceful purposes to help ensure that such transfers would not be diverted to unsafeguarded nuclear fuel cycle or nuclear explosive activities” (NSG 2010a). By 1992, the NSG published additional guidelines, the *Dual-Use Guidelines*, for the transfer of nuclear-related dual-use equipment, material and technology, which could be used for an unsafeguarded nuclear fuel cycle or a nuclear explosive activity. These *Guidelines* are the:

- *Guidelines for Nuclear Transfers*, which governs the export of items that are particularly designed or prepared for nuclear use. These items include nuclear material, nuclear reactors and equipment, non-nuclear material for reactors, plant and equipment for the reprocessing, enrichment and conversion of nuclear material and for fuel fabrication and heavy water production, and technology associated with each of these items.
- *Guidelines for Transfers of Nuclear-Related Dual-Use Equipment, Materials, Software and Related Technology*, which governs the export of nuclear-related dual-use items and technologies that “can make a major contribution to an unsafeguarded nuclear fuel cycle or nuclear explosive activity, but which have non-nuclear uses as well, for example in industry” (NSG 2010b).

The purpose of the NSG *Guidelines* is to:

ensure that nuclear trade for peaceful purposes does not contribute to the proliferation of nuclear weapons or other nuclear explosive devices which would not hinder international trade and cooperation in the nuclear field (NSG 2010b).

¹⁹ By September 2010, the states participating in the NSG included Argentina, Australia, Austria, Belarus, Belgium, Brazil, Bulgaria, Canada, China, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Kazakhstan, South Korea, Latvia, Lithuania, Luxembourg, Malta, The Netherlands, New Zealand, Norway, Poland, Portugal, Romania, the Russian Federation, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Turkey, Ukraine, the UK and the US.

In this way, the *Guidelines* aim to “facilitate the development of trade” by providing the “means whereby obligations to facilitate peaceful nuclear cooperation can be implemented in a manner consistent with international nuclear non-proliferation norms” (NSG 2010b).

South Africa joined the NSG on 5 April 1995, prior to the start of the 1995 NPT REC. According to a former South African diplomat, Thomas Markram (2004: 62), South Africa “worked actively” in the NSG and sought to make the operations of the NSG more transparent as the NSG is perceived by developing countries as secretive and exclusive. By its own admission, the South African government regards its role in the NSG as:

- the promotion of the rights of developing states to develop and maintain nuclear energy programmes for peaceful purposes;
- efforts to make the NSG’s activities more transparent; and
- Changing the perception among some developing states that the NSG is not an “exclusive secretive club” (DIRCO 2009a: 39).

By adopting these roles, South Africa gained some advantage as it was elected to leadership positions within the NSG. In 1997, for example, South Africa was elected to chair the *International Seminar on the Role of Export Controls*. South Africa’s Governor on the IAEA Board, Abdul Minty, acted as the chairperson of the seminar. Attended by all UN member states, academics, the nuclear industry and international organisations, the seminar reiterated the need for suppliers and recipients to evaluate the legitimacy and effectiveness of their domestic nuclear export controls and how these contributed to nuclear non-proliferation. The seminar also proposed steps to increase the transparency of nuclear export controls (DIRCO 2009a: 39).

The South African government often uses its participation in international nuclear-related fora to express its normative approach to international relations, as well as to reiterate its role and identity. One illustration of this is the statement by the South African Minister of Foreign Affairs, Nkosazana Dlamini-Zuma (2007a) speaking at

the opening of the Plenary of the NSG hosted by South Africa in Cape Town on 19 April 2007.²⁰ Minister Dlamini-Zuma (2007a) stated that whilst the NSG has to:

consider how to further strengthen the controls on the export of nuclear and nuclear-related material, equipment and technology, it is imperative that we [members of the NSG] do not lose sight of the many people around the world that continue to live in abject poverty.

She also reminded the participants that the efforts of the NSG should:

contribute to creating a better life for all and not hinder international co-operation on the peaceful uses of nuclear energy, which potentially could strengthen and accelerate the economic development of the economically marginalized parts of the world (Dlamini-Zuma 2007a).

Minister Dlamini-Zuma (2007a) reiterated that this “renewed international focus on the expansion of nuclear energy as [*sic*] renewable energy source” requires “increased international co-operation to ensure the safety, security and peaceful use of nuclear energy”. Explaining South Africa’s position, she stated that South Africa ‘consistently’ maintained that the ownership of advanced dual-use capabilities placed a “special responsibility” on a state to remove any concerns and suspicions about nuclear weapon proliferation. Her statement also reflected a level of realism through her reference to the “activities of the illicit network in nuclear technology to manufacture nuclear weapons” which “will continue to impact on the work of the NSG” (Dlamini-Zuma 2007a).

One of the contentious issues faced by South Africa as a member of the NSG is how to handle India. For years, the NSG deliberated on a special dispensation in terms of the NSG *Guidelines* for India, who is not member of the NSG and not a signatory to the NPT, but who has an extensive nuclear industry and weapons programme (DFA 2008). In 2007, members of the NSG resolved to explore ways for co-operation with India in the civil nuclear field. The NSG’s support came at a time when India sought

²⁰ Nkosazana Dlamini-Zuma first served as Minister of Health in President Mandela’s Cabinet. In 1999, President Mbeki appointed her as his Minister of Foreign Affairs, a position she held until the national elections in 2009. She was appointed as President Zuma’s Minister of Home Affairs in May 2009. Accordingly, she was familiar with the South African government’s position during the whole period from 1994 to 2010.

the NSG's assistance to commence trade in the nuclear sector with several signatories of the NPT.

Since the ANC came to power in 1994, South Africa and India's diplomatic relations strengthened. In fact, the new South African government's foreign policy priorities, according to the then Director-General of the Department of Foreign Affairs (DFA), Rusty Evans (1995: 100), included an "increased emphasis" on Asia and the Far East.²¹ As a result, South Africa and India signed a *Strategic Partnership Accord* in March 1997. Notwithstanding these diplomatic developments, South Africa's nuclear non-proliferation stance emerged as a contentious issue between the two countries. For India, South Africa had aligned itself with the position of major nuclear powers in the West on nuclear arms control (Beri 2001).

South Africa's views on India were expressed by the Minister of Foreign Affairs. In response to the question during a Cable News Network-Indian Broadcasting Network (CNN-IBN) interview on 22 July 2007 on whether South Africa has "any objections to sharing its nuclear resources with India", Minister Dlamini-Zuma reverted to South Africa's preference for multilateralism in its nuclear diplomacy. She stated that the "discussion is going to be put in a multilateral among the nuclear suppliers group" where "we will all have to mark [*sic*] some consensus about it" (Dlamini-Zuma 2007b). Implicitly, the South African government supports the NSG's special dispensation for India, which is not a party to the NPT. This indicates South Africa's nuclear partnership with both the developed and developing world.

3.3 The Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies

Established in 1995, the Wassenaar Arrangement (WA) is the first global multilateral arrangement which covers conventional weapons as well as sensitive dual-use goods and technologies that can be used in the development of WMDs and their delivery systems.²² Therefore, the WA was established in the wake of the end of the

²¹ The position Director-General is often also spelt Director General. See <http://www.dfa.gov.za> and <http://www.dirco.gov.za>. In 2009 subsequent to the inauguration of President Jacob Zuma, the DFA's name was changed to the Department of International Relations and Cooperation (DIRCO).

²² By April 2012, the following states participated in the WA: Australia, Austria, Belgium, Bulgaria, Canada, Croatia, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Latvia, Lithuania, Luxembourg, Malta, Mexico, The Netherlands, New Zealand,

Cold War as “a nuclear export control regime” to “contribute to regional and international security and stability, by promoting transparency and greater responsibility in transfers of conventional arms and dual-use goods and technologies, thus preventing destabilising accumulations” (WA 2011).

In order to be admitted to the WA, a state has to comply with three requirements. Firstly, it has to be a producer and/or exporter of arms or sensitive industrial equipment. Secondly, it has to maintain non-proliferation policies and appropriate national policies including the adherence to non-proliferation policies, control lists and, where applicable, the guidelines of the NSG, the MTCR and the AG. A state also has to adhere to the NPT; the *Biological and Toxin Weapons Convention* (BTWC); the *Chemical Weapons Convention* (CWC); and, where applicable, START 1, including the Lisbon Protocol. Finally, a state has to maintain fully effective export controls (DIRCO 2011b).

South Africa became the first African member of the WA on 28 February 2006. Prior to its membership, South Africa had incorporated the WA control lists as part of the National Conventional Arms Control Act 41 of 2002. In addition to this, South Africa also participated in the WA’s first outreach seminar in Vienna on 19 October 2004. The purpose of the seminar was to “raise awareness” of the WA’s role in transfers of conventional arms and dual-use goods and technologies (SIPRI 2005: 706-707). Thus, for South Africa, its membership of the WA illustrates its compliance with the norms of nuclear non-proliferation and the peaceful uses of nuclear energy. Moreover, the country’s adoption of the principles of the WA in legislation prior to its membership signals its commitment to nuclear non-proliferation.

3.4 The Missile Technology Control Regime and The Hague Code of Conduct against Ballistic Missile Proliferation

This section specifically focuses on nuclear export control regimes on missile technology and ballistic (*i.e.* nuclear) missile technology.²³ In addition, it focuses on a specific aspect of South Africa’s nuclear diplomacy since 1990; namely the country’s

Norway, Poland, Portugal, Republic of Korea, Romania, Russia, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Turkey, Ukraine, the UK and the US.

²³ According to the UN (1991: 18), ballistic missiles are primarily regarded as nuclear weapon delivery vehicles.

(ballistic) missile capability and its dismantling. The rationale for an extended discussion of these regimes is that several developments related to them occurred during the De Klerk presidency and prior to the country's accession to the first of these regimes in 1995. The development of South Africa's ballistic missile capability has been addressed in various sources (NTI 2009a; Steyn, Van der Walt & Van Loggerenberg 2003) and is not the focus of this section. However, some historical references contextualise these developments. The case of South Africa provides useful insights into the operations of a nuclear proliferator as well as the nuclear non-proliferation regime. Despite UN and other sanctions against South Africa, the country continued to develop a rocket and missile industry as part of its armaments industry; thus acting as a nuclear proliferator in non-compliance with the norms of nuclear non-proliferation; nuclear disarmament; and the peaceful uses of nuclear energy as espoused in the IAEA Statute and the NPT.

South Africa's missile development programme commenced in 1963 and resulted early in the manufacturing of the 22km-range Valkiri (a tactical surface-to-surface artillery rocket) and the 4-10km-range V3 Kukri (a tactical air-to-air missile) (UN 1991: 18). As South Africa's missile-related expertise improved, a missile test range was constructed in St. Lucia (close to the Mozambican border) in 1968. The National Party (NP) government also commenced with the development of a single-stage, intermediate-range ballistic missile (IRBM), the first of what became known as the Republic of South Africa (RSA) missile series (see *Table 5*). This initiative formed part of a government-supported commercial space launch vehicle programme in the 1970s with the assistance of, *inter alia*, Israel and Iraq (NTI 2009a). Originally, the intended payload for these missiles was most likely to be the "fission gun-type devices" developed in South Africa between 1971 and 1989, to which Stumpf (1995a) referred.

In 1978 Kentron Missiles, a subsidiary of the state-owned Armscor, was established as the country's dedicated missile manufacturer (NTI 2009a).²⁴ In 1983, the South African government announced its intention to close the St. Lucia test range and constructed a new range, the Overberg Toetsbaan (OTB or Overberg Test Range) in the De Hoop Nature Reserve in the Overberg in the Western Cape. This

²⁴ While still in office, President de Klerk's government presided over the establishment of Armscor successor, Denel (Pty) Limited (hereafter Denel) on 1 April 1992.

development signaled a new era in South Africa’s missile capabilities. By the 1980s according to Hannes Steyn (a former member of the Armscor Board); Richardt van der Walt (a former General Manager of the AEC); and Jan van Loggerenberg (a former Chief of the South African Air Force) South Africa’s missile arsenal included, *inter alia*, air-to-air missiles and an anti-tank missile (Steyn, Van der Walt & Van Loggerenberg 2003: 54-55).²⁵ The RSA-3 missile could have delivered a small warhead, and was most likely a space launch adaptation of the RSA-2 missile. In order to support its missile development programme, the NP-led South African government developed an indigenous solid-propellant production capability, the RSA-4 missile, which was developed when President De Klerk announced the dismantlement and destruction of South Africa’s “nuclear devices” and, subsequently, its space programme. The RSA-4 missile may have been capable of delivering a 700kg nuclear warhead from South Africa to any location in Southern Africa (Steyn, Van der Walt & Van Loggerenberg 2003: 54-55).

Table 5: South Africa’s missile series

Name of missile	Type	Trajectory (km)	Warhead mass (kg)
RSA-1	Intermediate range, single-stage ballistic missile	1 100	1 500
RSA-2	Intermediate range, single-stage ballistic missile	1 900	1 500
RSA-3	Solid-fuel orbital launch vehicle	Information not available	Information not available
RSA-4	Solid-propellant	Information not available	700

NTI (2010)

As South Africa was developing its ballistic missile capabilities, other states met in 1987 to establish the Missile Technology Control Regime (MTCR). An informal and voluntary regime, the purpose of the MTCR is to:

restrict the proliferation of missiles, complete rocket systems, unmanned air vehicles, and related technology for those systems capable of carrying a 500

²⁵ Steyn, Van der Walt and Van Loggerenberg were closely involved in various aspects of the South African nuclear weapons programme.

kilogram payload at least 300 kilometres, as well as systems intended for the delivery of weapons of mass destruction (MTCR 2011).²⁶

Notwithstanding these restrictions, partners to the MTCR recognise the “importance of controlling the transfer of missile-related technology without disrupting legitimate trade and acknowledge the need to strengthen the objectives of the Regime through cooperation with countries outside the Regime” (MTCR 2010c). The MTCR *Guidelines for Sensitive Missile-Relevant Transfers* (also called the MTCR Guidelines) and the *Equipment, Software and Technology Annex* provide states with guidelines to legislate national control laws taking a two-category common control list into account. It also provides guidelines to states to deny the transfer of any nuclear weapon delivery systems development (CNS 2011c: 1).

South Africa did not initially join the MTCR. Instead, the country continued with its missile development programme and on 5 July 1989, two months before President De Klerk took office, successfully launched what the South African government called a “booster rocket” but what US intelligence sources called a missile from the OTB (UN 1991: 19; NTI 2009a). According to the UN (1991: 25), the range of this rocket was 1 450 km. Towards the end of 1989 the Berlin Wall collapsed which, *inter alia*, ushered in the demise of the USSR and the end of the Cold War. These events cascaded to Southern Africa with the independence of Namibia; the withdrawal of Cuban troops from Angola; and the USSR’s departure from the region.

Despite President De Klerk’s announcement on 2 February 1990 on the release of political prisoners like Nelson Mandela and the unbanning of liberation movements such as the ANC, and his decision to commence with the dismantlement and destruction of the country’s “nuclear devices” the international community remained concerned about the country’s nuclear capabilities and nuclear missile proliferation activities. Several developments contributed to this. Firstly, on 19 September 1990 US Customs officials charged a Dutch national and an accomplice for buying parts for guided missiles intended for sale to South Africa (NTI 2009a).

²⁶ By April 2010, the MTCR’s members included Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Luxembourg, The Netherlands, New Zealand, Norway, Poland, Portugal, the Republic of Korea, the Russian Federation, South Africa, Spain, Sweden, Switzerland, Turkey, Ukraine, the UK and the US.

Secondly, in November 1990, the South African government admitted that it was conducting a second missile test-flight from an operational site in the Judaeen Hills in Israel. This test was followed by a joint Israeli-South African test of Israel's Barak 1 missile off the South African coast in August 1991; followed by US intelligence reports that Israel exported key ballistic missile components to South Africa (NTI 2009a). Further evidence of international concerns pertaining to South Africa's missile capabilities was the publication by the UN Department of Disarmament Affairs of the 1991 report on *South Africa's Nuclear Tipped Ballistic Missile Capability* (UN 1991). The report outlined South Africa's ballistic capabilities and South Africa's nuclear-related diplomatic relations with Israel to acquire these capabilities. In addition to this, reports of South Africa's missile-related nuclear diplomacy with Taiwan and China also surfaced (NTI 2009a).

Amidst all of this, US officials were negotiating with the South African government to terminate the manufacture of long-range missiles and to dismantle its capability to produce large space rockets. South Africa agreed to terminate and dismantle these missiles and capabilities on 30 June 1993. In return, according to the NTI (2009a) South Africa was given access to the military and high-tech markets of industrialised countries. The US government also provided financial assistance to South Africa for the destruction of South Africa's MTCR Category I ballistic missile delivery systems in January 1994. The US assistance included US\$ 500 000 for the destruction of South Africa's rocket motor static facility at Rooi Els in the Western Cape. Moreover, the SA-US agreement also resulted in President De Klerk's announcement of the termination of the RSA-3 and RSA-4 space launch vehicle (SLV) programmes. By March 1994, a month before South Africa's first all-inclusive elections in April 1994, negotiations between South Africa and the US on South Africa's membership of the MTCR had already progressed significantly.

Barely a month after the April 1994 elections, the new South African government issued Government Notice No 88, which introduced licensing requirements for all items that fell within the limits of the MTCR. On 4 October 1994, South Africa and the US signed a bilateral agreement on South Africa's termination of its missile development programme (US 1994). Moreover, South Africa undertook to comply with the export guidelines of the MTCR.

South Africa became a member of the MTCR on 13 September 1995. This development can be regarded as one of the first successes of the nuclear diplomacy of the ANC-led government. It can also be regarded as one of the last nuclear-related diplomatic actions of President de Klerk's government, which also presided over the IAEA's successful verification of the dismantling of the country's nuclear weapons programme in 1993 (see Chapter 4). In the case of the MTCR, South Africa's missile-related nuclear diplomacy from 1990 to 1995 was characterised by two strategies, namely cooperation (with the US) and confrontation. The latter refers to South Africa's confrontation with the international community during this period on Israeli-South African cooperation on missile development. This cooperation ended once the ANC came to power as it favoured an independent Palestinian state.

With the government of South Africa as the sole shareholder, Denel is the largest manufacturer of defence equipment in South Africa and operates in the military aerospace and landward defence environment. As indicated earlier, President de Klerk also presided over the termination of South Africa's manufacturing programme for long-range missiles and the dismantling of its capability to produce large space rockets. These developments severely impacted on the operations and revenue of state-owned Denel. There followed a series of restructurings of Denel to align South Africa's major armaments manufacturer with the new South African government's policies and interests.

Despite the termination of a large section of its missile development programme, South Africa was able to maintain and further develop some capabilities. From 1999 onwards, Denel actively sought joint venture partners to develop its missile programme. However, Denel's efforts coincided with a new development pertaining to the missile-related nuclear export control regime. The Hague Code of Conduct against Ballistic Missile Proliferation (HCOC or the Code) entered into force in 2002. Regarded as a political rather than a legally binding instrument by its 131 subscribing states, the Code encourages states to limit and report on their ballistic missile activities. Moreover, it is the only global instrument that morally obliges states to verify the proliferation of ballistic missiles capable of delivering WMDs (HCOC 2011).

Apart from the HCOC, another development impacted on the development of Denel's missile business. In July 2004, a decade after the ANC came to power, the

US government rescinded its debarment against state-owned South African arms manufacturing companies Armscor, Fuchs and Denel. Originally instituted in 1994 in response to the activities undertaken in the US by these three South African state-owned entities during the pre-1994 arms embargo era, the debarment was suspended in 1998 as a result of an agreement between the South African and US governments. In response to the US decision, Deputy Minister of Foreign Affairs Aziz Pahad (quoted in DFA 2004) welcomed the US statement that the South African government “instituted concrete and far-reaching measures to establish a comprehensive and effective national export control regime”. This signaled the normalisation of diplomatic relations between the US and South Africa.

Subsequent to several restructurings and cognisant of South Africa’s obligations in terms of the MTCR and the HCOC (South Africa became a subscribing state to the Code on 26 November 2006), Denel aligned its nine business entities, which currently (2012) include Denel Dynamics, the only African missile house. Denel Dynamics is a designer, developer, system engineer, manufacturer, supplier and provider of services in all related aspects in the domains of missiles, guided weapons and unmanned air vehicle (UAV) systems (Denel 2010: 36). Denel Dynamic’s Missile Business Unit designs, develops and manufactures five types of missiles (see *Table 6*).

The South African National Defence Force (SANDF) remains Denel Dynamic’s primary local customer. However, local defence expenditure is insufficient to sustain Denel Dynamics, making it highly dependent on its sales of a small number of products to a limited number of international clients. Denel Dynamics and its counterpart in Brazil cooperated to develop Denel’s fifth generation Darter air-to-air missile, which has been integrated with Gripen, the Swedish-built fighter aircraft acquired by the South African government in terms of the South African government’s controversial *Strategic Arms Procurement Package*. The fifth generation Darter is expected to enter production in 2012/13 (*Engineering News* 18 January 2012). Denel Dynamic’s Umkhonto (MK) surface-to-air missile has proved successful in the South African Navy, while the MK 2 is in production for the Finnish Navy and has also been selected for purchase by Sweden. By 2010, Denel Dynamic’s 10km-range Mokopa laser-homing missile was ready for integration with

Gripen but lacked a launch customer, whereas the laser beam-riding Ingwe has been in production for export and will arm the South African Army's future tank destroyer. The television-guided Raptor II boosted standoff bomb is also exported and has been cleared on, amongst others, the Su-24 (Römer-Heitman 2010).

Table 6: South Africa's current missile development programme

Type of missile	Name of missile	Key features of missile
Air-to-air Missile Systems	A-Darter	Infrared air-to-air missile
Air Defence Missile Systems	Umkhonto-IR	Vertically-launched, high-velocity, infrared homing missile
Anti-Armour Missile Systems	Ingwe	Medium-range multi-purpose, anti-armour missile
	Mokopa	Long-range, precision-guided, anti-armour missile
Stand-off Weapon	Raptor II	Long-range, precision-guided weapon that can be launched from a variety of aircraft

Denel (2009: 33-36; 2010: 36)

Addressing the 9th Regular Meeting of Subscribing States to the HCOC in 2010, South African Ambassador Xolisa Mabhongo (2010) stated that South Africa supports efforts to achieve universality of the Code. This statement is in accordance with South Africa's position on global nuclear disarmament. However, South Africa finds itself in a peculiar position. According to the South African government, the country's "advanced arms industry has developed technology and items which could contribute to the development of ballistic and cruise missiles" (DIRCO 2012). Although the country's nuclear-related programme has been terminated, the South African arms and missile industry is one of the country's major export sectors. According to, *inter alia*, Members of Parliament (MPs) (Feinstein 2007; Maynier 2009; De Lille 2010), these industries and the South African government drew considerable domestic and international criticism against post-1994 South Africa due to the country's controversial arms sales.

These developments indicated the South African government's intentions and attempts to expand the South African defence industrial complex. With a workforce of 721, Denel Dynamics Missiles had revenues of R 656 million in, for example, 2010, up from R 575 million in 2009 (Denel 2010: 36). This adds much-needed income to the South African government. However it is too early to determine the implications of the draft 2012 Defence Review under the chairmanship of Roelf Meyer, a former NP-government Minister of Defence, for the South African missile industry.

3.5 The New Agenda Coalition

Towards the end of Nelson Mandela's presidential term, on 9 June 1998, South Africa along with Ireland, Sweden, New Zealand, Egypt, Brazil, Mexico and Slovenia (collectively known as the New Agenda Coalition or the NAC) announced a joint declaration, *Towards a Nuclear Weapons Free World - the need for a new agenda* (DFA 1998). At the announcement of the declaration, Deputy Minister of Foreign Affairs Aziz Pahad (1998) alluded to South Africa's identity as a state which had terminated its nuclear weapons programme. He stated that:

South Africa's own experience of turning away from the brink of the nuclear weapon abyss is a telling one: not only for the recognised five nuclear weapon states but also for the three nuclear-weapon-capable states.

Pahad further reiterated South Africa's identity and role as a "good international nuclear citizen" by pointing out that South Africa has 'actively' worked to "move the process of nuclear disarmament forward in all disarmament forums including the Conference on Disarmament where the establishment of an Ad Hoc Committee on nuclear disarmament has been proposed (DFA 1998).

Moreover, the South African government referred to the announcement as an "important international initiative on nuclear disarmament" (DFA 1998). With the declaration, South Africa and these like-minded states:

underlines the threat to humanity represented by the perspective of the indefinite possession of nuclear weapons and calls for a clear commitment to the speedy, final and total elimination of nuclear weapons and nuclear weapons capability (DFA 1998).

For South Africa, this reiterated its niche role and state identity in nuclear diplomacy. South Africa's decision to sign the NAC declaration serves as an example of the application of Henrikson's (2005: 74) three niche diplomatic strategies. South Africa's employment of partnership is clear in its cooperation with other signatories to the NAC declaration, and parallelism is evident in its involvement in this concurrent initiative alongside existing nuclear regimes. Confrontation as a niche diplomatic strategy is evident in South Africa's support of the text of the NAC declaration:

We can no longer remain complacent at the reluctance of the nuclear-weapon States and the three nuclear-weapons-capable States to take that fundamental and requisite step, namely a clear commitment to the speedy, final and total elimination of their nuclear weapons and nuclear weapons capability and we urge them to take that step now (NAC 1998).

Moreover, NAC members declared: "We are deeply concerned at the persistent reluctance of the nuclear-weapon states to approach their Treaty obligations as an urgent commitment to the total elimination of their nuclear weapons" (NAC 1998). Coalition members also called on the governments of each NWS and "nuclear-weapons-capable states" to:

commit themselves unequivocally to the elimination of their respective nuclear weapons and nuclear weapons capability and to agree to start work immediately on the practical steps and negotiations required for its achievement (NAC 1998).

Therefore, South Africa's involvement in the NAC reflects some nuclear activism (confrontation with NWS); cooperation with these like-minded states; and parallelism. The latter is further evident in and enhanced by the country's participation in the NAC as well as in other regimes.

In summary, the nuclear export control regimes addressed in this section have been criticized by non-members as "violating obligations to foster international cooperation in the peaceful uses of the related technologies under the NPT, the CWC and the BWC" (UN 2004: 47-48). Non-members also regard these export control regimes as 'suspicious' and that they serve "the defence of economic privileges by their

predominantly more wealthy, industrialized members” (UN 2004: 47-48). In some cases, members of these regimes from developing countries such as Brazil also maintain that these export controls are discriminatory where the transfer of advanced nuclear technology is concerned (Zaborsky 2003: 134). In response to these accusations, regime members and participants have defended these regimes as “necessary to implement their undertakings under the legal regimes or to prevent dangers to peace and international security” (UN 2004: 47-48).

Despite differences in the nature, membership, structure and operations of each of the existing global nuclear export control regimes, all share the same objective: to prevent nuclear proliferation. Moreover, these regimes have evolved from initial global cooperation on nuclear non-proliferation to the global coordination of nuclear non-proliferation (Zaborsky 1998: 92-93). Some regimes such as the WA and the MTCR have coordination arms only. Consequently, non-proliferation efforts and regimes focus predominantly on limiting technical proliferation instead of focusing on the level of political decision-making of nuclear proliferants. The *ZC Trigger List* and the *NSG Guidelines* are examples of the focus on technical aspects of proliferation. As Zaborsky (1998: 94) contends, a state or a non-state actor with a strong political will to develop a nuclear weapons capability is “likely to do so despite technical barriers to proliferation”. Therefore, evidence suggests that there is a need for the development of a new legal framework for international nuclear export control cooperation (SIPRI 2005: 701).

South Africa’s defence in supplier regimes of developing countries’ right to access advanced nuclear technology can be regarded as a strategy of confrontation against the more advanced developed states in the supplier regimes. In reinforcing its status as a “responsible producer, possessor and trader of advanced nuclear diplomacy” (DFA 2009a), South Africa has partnered with major nuclear states in control regimes to combat nuclear proliferation. In this respect, former South African diplomat Thomas Markram (2004: 61) described South Africa as a “dialogue bridge and interlocutor between the developed and developing states”. From the analysis in the aforesaid it is evident that nuclear non-proliferation export control regimes and South Africa’s involvement therein give credence to the country’s recognition and observance of the norms of nuclear non-proliferation, nuclear disarmament and the

peaceful uses of nuclear energy. If not managed properly and constrained, a state's "dual-use dilemma", its nuclear ambitions and its need for status and prestige are a powerful combination that contributes to nuclear proliferation.

4. South Africa's nuclear non-proliferation export control policy and mechanisms

Whereas the previous section outlined nuclear export control regimes and referred to South Africa's nuclear diplomacy related to these regimes, this section analyses the dynamics and processes contributing to South Africa's compliance with the norms associated with the export control regimes. The purpose is to indicate South Africa's efforts to also depart from its nuclear past on an institutional level, which informed its foreign policy and nuclear diplomacy. Although this nuclear past on an institutional level is not the main focus of this study and also considering that it is addressed in detail by respectively O'Meara (1996); Steyn, Van der Walt and Van Loggerenberg (2003); and Sanders (2006), a brief historical overview is provided to contextualise South Africa's efforts to transform its nuclear policy and diplomacy. In the process, reference is made to the South African link between the agents and structures of these regimes.

4.1 The diplomatic context of South Africa's involvement in nuclear export regimes

In response to the country's domestic policies, the UNSC adopted its first resolution calling for an arms embargo against South Africa in 1963. Unanimously adopted, UNSC Resolution 181 (1963) called on all UN member states to "cease forthwith the sale and shipment of arms, ammunition of all types and military vehicles to South Africa" against the background of an "arms build-up" by the South African government to further "that Government's racial policies" (UNSC 1963). However, the resolution was not implemented by all UN members. By 1977, the UNSC adopted another resolution, Resolution 418 (1977), against South Africa which called for a mandatory arms embargo against South Africa. Acting in terms of Chapter VII of the UN Charter, the UNSC expressed its concern that "South Africa is at the threshold of producing nuclear weapons" and decided that "all states shall refrain

from any cooperation with South Africa in the manufacture and development of nuclear weapons”, as well as any other types of arms (UN 1977).

Subsequent to the adoption of these resolutions, the UNSC also adopted Resolution 473 (1980) to implement Resolution 418 (1977), which imposed a mandatory arms embargo on South Africa. This resolution was extended by Resolution 558 (1984) that prohibited the imports of arms and weapons from South Africa. Subsequently, Resolution 569 (1985) prohibited “all new contracts in the nuclear field” with South Africa (UNSC 1985). On 28 November 1986, the UNSC adopted yet another resolution against South Africa. Resolution 591 (1986) called on all UN members to strengthen the arms embargo against South Africa and included a prohibition on any contribution to the manufacture and development of nuclear weapons by South Africa (UN 1994: 52).

What concerned the international community was that South Africa, despite these comprehensive UN arms and weapons embargoes, continued to improve and maintain its nuclear weapons capability. In a further series of resolutions (A/RES/37/69 A, 9 December 1982; A/RES/44/27 I, 22 November 1989; A/RES/45/176 C, 19 December 1990; A/RES/46/79 C, 13 December 1991) the UN General Assembly (UNGA) called on all UN members and in particular on the US, Israel, the UK, France, Chile and the Federal Republic of Germany (West Germany, now Germany) to terminate their cooperation with South Africa in the military and nuclear fields. It was only in December 1993, during the final phases of the South African constitutional negotiations and after the IAEA’s verification of the completeness of South Africa’s dismantlement, that the UNGA lifted its call for sanctions and embargoes against South Africa (UN 1994: 52, 114).

The above-mentioned developments highlight some of the loopholes in global nuclear non-proliferation efforts, especially in nuclear export control regimes during the Cold War and its immediate aftermath. President De Klerk’s 1993 announcement paved the way for South Africa’s full disclosure of its nuclear weapons programme. It also resulted in the country’s accession to, membership of and participation in a number of global nuclear non-proliferation export control regimes and related arrangements that “contribute to the prevention of the proliferation of weapons of mass destruction and their means of delivery” (UN 2011b).

The development of domestic nuclear non-proliferation export controls in South Africa occurred in tandem with South Africa's diplomatic initiatives and legal commitments to nuclear non-proliferation since 1990. Writing prior to the institution of the GNU in his now oft-quoted article in *Foreign Affairs*, Nelson Mandela (1993: 87) outlined the 'pillars' of South Africa's post-1994 foreign policy, which included human rights; the promotion of democracy worldwide; global peace, "including effective arms-control regimes"; a focus on Africa; and economic development based on international cooperation.

In 1993, prior to the 1994 democratic elections the South African government commenced to align the country's international nuclear non-proliferation position with its domestic legislation. The promulgation of the Non-Proliferation of Weapons of Mass Destruction Act 87 of 1993, as amended in 1995 and 1996, on 23 June 1993 was not only one of the last nuclear-related policy actions of the NP government under President FW de Klerk but, in its amended form, one of the first nuclear-related policy actions of the President Nelson Mandela-led GNU in South Africa.

Speaking at the *Conference on Nuclear Policy for a Democratic South Africa* in February 1994 (a few months prior to the ANC's accession to power), Trevor Manuel (1994: 5) stated that "(w)e [the ANC] need to state unambiguously that the African National Congress does not want a nuclear weapons capability in South Africa. We have endorsed the OAU [Organisation of African Unity] declaration calling for the African continent to be a nuclear weapon-free-zone. The ANC has also endorsed the Nuclear Non-Proliferation Treaty".²⁷ Years later, Manuel's view was confirmed by South Africa's second post-1994 Minister of Foreign Affairs, Nkosazana Dlamini-Zuma (2007a) who admitted that the ANC government:

at that early stage [1994] already adopted a policy whereby South Africa should be an active participant in the various non-proliferation regimes and suppliers groups; adopt positions publicly supporting the non-proliferation of weapons of mass destruction with the goal of promoting international peace

²⁷ In the late 1980s Trevor Manuel was a founder-member of the United Democratic Front (UDF), an ANC front organisation during the time the ANC was banned. He served on the ANC's Economic Desk and, after the elections of April 1994, became Minister of Trade and Industry. Subsequently, he served as Minister of Finance until 2008. Since 2009, he served as National Planning Minister in the Cabinet of President Jacob Zuma.

and security; and use its position as a member of the suppliers' regimes and of the Africa Group and the Non-aligned Movement to promote the importance of non-proliferation and to ensure that these controls do not become the means whereby developing countries are denied access to advanced technologies required for their development.

Table 7: South Africa's membership of nuclear non-proliferation export control regimes

Nuclear export control regime	Date of membership
Australia Group (AG)	Not applicable
Missile Technology Control Regime (MTCR)	1995
Nuclear Suppliers Group (NSG)	1995
Proliferation Security Initiative (PSI)	Not applicable
Wassenaar Arrangement (WA)	2006
Zangger Committee (ZC)	1993

Authors own compilation

Minister Dlamini-Zuma (2007a) also reiterated that the South African government:

has therefore since its inauguration in May 1994, committed itself to a policy of non-proliferation, disarmament and arms control, which covers all weapons of mass destruction and extends to concerns relating to the proliferation of conventional weapons.

In fact, South Africa joined the principle nuclear export control regimes prior to the time of the Minister's statement, *i.e.* during the Mandela presidency (see *Table 7*).

Earlier, a similar statement on South Africa's post-1994 commitment to nuclear non-proliferation was made by the South African government in a *Note Verbale* to the UN that it has, since the new Government's inauguration in May 1994, 'committed' itself to non-proliferation, disarmament and arms control. By its own admission, South Africa is, therefore, committed to prohibiting the manufacture, acquisition, transport

or use of weapons of mass destruction and their means of delivery, including by non-State actors (South Africa 2005: 2-3). Since 1994 these views and statements have become the mantra of South Africa's nuclear diplomacy.

4.2 The sources of South Africa's nuclear non-proliferation export control policy

Various sources inform the South African government's policy on nuclear non-proliferation, arms control and disarmament practices. These include:

- Policy documents and statements by government and its officials. Since 1994, the ANC-led government has repeatedly maintained that it has been consistent in its non-proliferation stance. It claims that "throughout our long liberation struggle" (Gumbi 2008a: 5) and "since its inauguration in 1994", it has "committed itself to a policy of non-proliferation, disarmament and arms control which covers all weapons of mass destruction and extends to concerns relating to the proliferation of conventional weapons" (DIRCO 2010). The South African government's stance on multilateralism and nuclear non-proliferation was repeated in a statement by the DFA prior to President Mbeki's attendance of the UNGA's 58th session in September 2003. According to the DFA, "[the] goal of ensuring peace and stability in Africa remains a high priority for the Government" (DFA 2003). Moreover, the South African government included, amongst others, in its foreign policy objectives to "reinforce the role of multilateralism and challenge the unilateral and protectionist approach"; to "promote the central role of the UN in combating terrorism and the conclusion of the Comprehensive Convention Against Terrorism"; and to "promote arms control and disarmament in the context of conventional arms, including small arms, and weapons of mass destruction" (DFA 2003).
- Various Acts of Parliament, including the Nuclear Energy Act 46 of 1999; the National Nuclear Regulator Act 47 of 1999; and the Non-Proliferation of Weapons of Mass Destruction Act 87 of 1993, as amended in 1995, 1996 and 2005.
- Several Government Notices such as Government Notice No 20 (3 February 2010) which include the declaration of certain nuclear-related dual-use

equipment, materials and software and related technology as controlled goods, and control measures applicable to such goods. Government Notice No 21 (3 February 2010), for example, includes an additional declaration of certain nuclear-related dual-use equipment; materials and software and related technology as controlled goods; and control measures applicable to such goods. In addition to this, Government Notice No 22 (3 February 2010) contains a declaration of certain missile technology and related items as controlled goods and control measures applicable to such goods (NPC 2010).

Apart from the above-mentioned measures, South Africa also executes its international nuclear non-proliferation commitments through several international instruments. These include the NPT to which it acceded on 10 July 1991; 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 Comprehensive Safeguards Agreement or Safeguards Agreement) on 16 September 1991; and 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) on 13 September 2002) with the IAEA. Other instruments include its membership of the NSG and the ZC; and its ratification of the *Convention on the Physical Protection of Nuclear Material* (CPPNM) (17 September 2007) and the Pelindaba Treaty (DOE 2010).

In other words, South Africa adheres to the fundamental *pacta sunt servanda* principle of International Law that states should comply with international agreements. South Africa recognises, in the words of International Law expert Malcolm Shaw (2008: 94), the “obligatory nature of treaties”. In fact, one of the principles ‘underpinning’ South Africa’s foreign policy is “a commitment to justice and international law in the conduct of relations between nations” (DIRCO 2009a). In compliance with this principle, South Africa has incorporated its obligations in terms of international agreements into its domestic legislation and policy.

4.3 South Africa’s nuclear non-proliferation export control policy

In 1994, South Africa’s nuclear energy installations included the Koeberg Nuclear Power Station’s two nuclear power reactors (Koeberg 1 and Koeberg 2) (see *Table 8*) and Pelindaba’s research reactor (SAFARI-1).

Table 8: South Africa’s nuclear reactors

Reactors	Type	Purpose	Net Megawatt	Operational Since
SAFARI-1	Pool-type Research Reactor	Research	20	1965
Koeberg 1	Pressurised Water Reactor	Power generation	921	1984
Koeberg 2	Pressurised Water Reactor	Power generation	921	1985
TOTAL			1 862	

World Nuclear Association (2010); Eskom (2011) & Tillwick (2011)

The Non-Proliferation of Weapons of Mass Destruction Act 87 of 1993 served as South Africa’s primary nuclear non-proliferation legislation. The aim of the Act is to control and manage matters relating to the proliferation of such weapons in South Africa (NPC 2009). The Act prohibits:

- the conduct of nuclear explosions and tests in South Africa; and
- any person to be or become involved in any activity or with goods that contribute to WMD programmes; any person to be or become involved in any dual-use goods or activities that could contribute to WMD with countries, individuals, groups, undertakings and entities subject to restrictions imposed by the UNSC acting under Chapter VII of the UN Charter; and involved in international terrorism, including non-state actors (NPC 2011a).
- South Africa’s promulgation of the Non-Proliferation of Weapons of Mass Destruction Act 87 of 1993 is significant for a number of reasons. Firstly, the legislation generated some diplomatic benefits for South Africa. Through the Act, South Africa - after entering the NPT in 1991 - illustrated its commitment to global nuclear non-proliferation. Secondly, by adopting the Act South Africa

prepared itself for membership of other nuclear export control regimes such as the MCTR and the NSG, which it joined in 1995. In the third instance, the Act enabled the South African government, through the NPC, to maintain control over the import and export of dual-use and sensitive goods. Finally, the ANC's support of the Act once in government was a continuation of the liberation movement-turned-governing-party's historical anti-nuclear stance (Reddy 1994).²⁸

In August 1994, the South African Cabinet reiterated the country's commitment to nuclear non-proliferation. According to former South African diplomat Thomas Markram (2004: 12), the Cabinet on 31 August 1994 accepted a proposal by the Minister of Foreign Affairs, Alfred Nzo that South Africa should:

- actively participate in various international non-proliferation regimes and suppliers groups;
- publicly adopt positions on nuclear and other WMD non-proliferation in order to promote international peace and security; and
- Use its position in the NAM and suppliers groups to ensure that nuclear-related export controls do not turn into instruments whereby developing states are denied access to advanced nuclear-related technology.

The GNU's term expired in 1999. From 1999, the South African government adopted additional nuclear and non-proliferation related legislation in support of South Africa's nuclear non-proliferation stance. These included the:

- Nuclear Energy Act 46 of 1999;
- National Nuclear Regulator Act 47 of 1999; and the
- National Conventional Arms Control Act 41 of 2002 (see *Table 9*).²⁹

²⁸ A review of the Non-Proliferation of Weapons of Mass Destruction Act 87 of 1993 commenced in 2005 to incorporate UN and IAEA resolutions that were adopted since the promulgation of the Act in 1993. A draft of the review of the Act was submitted to the Minister of Trade and Industry in mid-2012.

²⁹ The nuclear sector in South Africa is also governed by several other related Acts, including the National Radioactive Waste Disposal Institute Act 53 of 2008; the Hazardous Substances Act 15 of 1973; the Patent Act 57 of 1978; the National Strategic Intelligence Act 39 of 1994 as amended by Act No 67 of 2002; the National Key Points Act 102 of 1980 as amended by Act No 47 of 1985; the Protection of Constitutional Democracy Against Terrorist and Related Activities Act 33 of 2004; the Mine Health and Safety Act 29 of 1996; the Mineral and Petroleum Resources Development Act 28 of 2002; the National Environmental Management Act 107 of 1998; the National Water Act 36 of 1998 and the Dumping at Sea Control Act 73 of 1980 as amended by Act No 73 of 1995.

Table 9: South Africa's core nuclear non-proliferation legislation (1990-2010)

Legislation	Date of promulgation
Non-Proliferation of Weapons of Mass Destruction Act 87 of 1993, as amended in 1995 and 1996	1993, as amended in 1995 and 1996
Nuclear Energy Act 46 of 1999	1999
National Nuclear Regulator Act 47 of 1999	1999
National Conventional Arms Control Act 41 of 2002	2002
National Radioactive Waste Disposal Institute Act 53 of 2008	2008

DOE (2011)

The Nuclear Energy Act 46 of 1999 provides, *inter alia*, for the establishment of NECSA as the successor of the NP-era's AEC. In terms of section 33(1) of the Nuclear Energy Act 46 of 1999, the Minister of Energy is responsible for the implementation of the country's Safeguards Agreement and Additional Protocols. The Ministry of Energy delegated this function to NECSA. NECSA, therefore, also executes South Africa's international obligations in terms of the ZC. In addition to this, the main functions of NECSA (2011) are:

to undertake and promote research and development in the field of nuclear energy and radiation sciences and technology; to process source material, special nuclear material and restricted material; and to cooperate with persons in matters falling within these functions.

4.4 South Africa's nuclear non-proliferation export control mechanisms

South Africa employs two mechanisms or institutions to control and regulate nuclear exports, namely the NPC and the National Conventional Arms Control Committee (NCACC) (see *Table 10*). Both institutions were established after 1990. The

members of the NPC are appointed by the Minister of Trade and Industry, whereas the members of the NCACC are appointed by a higher state authority, *i.e.* a Statutory Committee of Cabinet and the President.

4.4.1 The Council for the Non-Proliferation of Weapons of Mass Destruction

The Non-Proliferation of Weapons of Mass Destruction Act 87 of 1993 provides for the establishment of the South African Council for the Non-Proliferation of Weapons of Mass Destruction (NPC) administered by the Minister of Trade and Industry. In South Africa, all transfers of listed technologies, equipment and material require permits issued by the NPC. In terms of the Act, the NPC “on behalf of the State protect the interests, carry out the responsibilities and fulfil the obligations of the Republic with regard to non-proliferation”. In terms of section 6 the functions of the NPC are, *inter alia*, to control and manage all activities relating to non-proliferation and to supervise and implement South Africa’s compliance with international conventions, treaties and agreements related to non-proliferation affairs and issues.

The NPC ensures that all relevant industries and government departments are represented. It also oversees the implementation of South Africa’s nuclear export control policy in compliance with South Africa’s international commitments in this regard. For this purpose, the NPC has produced a 94-page document, *Internal compliance programme for industry*, on guidelines for the South African industry (NPC undated). The latter document outlines South Africa’s non-proliferation policies, legislation, mechanisms, control processes and permit application procedures. It also outlines the multilateral nuclear export control regimes which South Africa participates in.

Finally, it includes lists of all controlled goods and activities in terms of South African legislation (NPC 2011a). The NPC is one of the first nuclear non-proliferation institutions established after the complete dismantlement of the country’s nuclear weapons programme. As a regulating organisation, it ensures that the South African government and companies comply with the various nuclear non-proliferation export control regimes.

4.4.2 The National Conventional Arms Control Committee

In 1994 South Africa had the most sophisticated defence force and arms industry in Africa. Moreover, the country's arms industry was also one of its most lucrative industrial sectors. Between 1989 and 1993 the value of the country's arms exports increased by more than 160 percent (Truesdell 2009: 112). By 1994, South Africa's arms were the second largest export product amounting to approximately R 1 billion and employing almost 54 000 people. However, between 1991 and 1995, the South African defence budget decreased by 45 percent and arms production by 60 percent, reflecting the new political realities of the post-Cold War era, as well as the new realities in South and Southern Africa (Truesdell 2009: 112).

In May 1996 the South African government published *The White Paper on Defence* and in December 1999 *The White Paper on the South African Defence Related Industries*. One of the significant proposals of *The White Paper on Defence* was that the NCACC should control and regulate the import, export and transit of conventional arms through South Africa. Established in 1995 by a Cabinet memorandum, but legislated in 2002 in terms of the National Conventional Arms Control Act 41 of 2002, the NCACC is a statutory body which reports to Parliament (see *Table 10*). It is composed of Cabinet Ministers and Deputy Ministers, effectively making it a subcommittee of Cabinet. In terms of section 4 of the National Conventional Arms Control Act 41 of 2002, the functions of the NCACC include "the regulation of development, manufacturing and transfer of conventional arms in South Africa" and to:

- ensure compliance with the arms control policy of the South African government;
- ensure the implementation of a legitimate, effective and transparent control process;
- foster national and international confidence in South Africa's control procedures;
- provide for an Inspectorate to ensure compliance with the provisions of the Act;
- provide for guidelines and criteria to be used when assessing applications for permits made in terms of the Act;

- ensure adherence to international treaties and agreements;
- ensure proper accountability in the trade in conventional arms; and
- Provide for matters connected with the work and conduct of the NCACC and its Secretariat.

Table 10: South African institutions responsible for nuclear non-proliferation

Controlling institution		
	South African Council for the Non-Proliferation of Weapons of Mass Destruction (NPC)	National Conventional Arms Control Committee (NCACC)
Date established	1993	2002
Appointed by	Minister of Trade and Industry	Statutory Committee of Cabinet and appointed by the President
Members	Government officials and representatives from industry	Cabinet Ministers and Deputy Ministers
Controlled material	Chemical, biological, nuclear dual-use and missile delivery items	So-called 'other' dual-use materials and items
Relevant legislation	Non-Proliferation of Weapons of Mass Destruction Act 87 of 1993	National Conventional Arms Control Act 41 of 2002

South Africa (2005: 3)

In terms of the National Conventional Arms Control Act, no person “may trade in conventional arms or render foreign military assistance unless that person is registered with the NPC and is in possession of a permit authorised by the NCACC” (NPC 2011b). In South Africa, permits are required for:

armaments development and manufacturing, marketing, contracting, exporting, importing or transferring (conveyance) of conventional arms, which includes; weapons, munitions, vessels (land, sea and air) designed for war, articles of war, and related systems, components, technologies, dual-use goods or services (NPC 2011b).

The proposals of the *White Paper on the South African Defence Related Industries* of 1999 meant that the South African government did not regard the country's defence industry as a separate industrial sector and that the Government did not intend to develop a separate industrial development policy for the defence industry (Truesdell 2009: 117). Facing a future with relatively little government support, the South African defence industry, including state-owned arms manufacturers such as Armscor and Denel was forced to realign itself with these new political realities, compounded by the controversial 1999 Strategic Defence Procurement Package (the so-called arms deal). Despite these factors, exports by the South African defence-related industries have increased significantly between 1996 and 2004, most notably from 2002 when the NCACC was established. For example, exports increased from R 517 million in 1996 to more than R 1 billion in 2001, and from approximately R 2 billion in 2002 to more than R 2 billion in 2004 (Truesdell 2009: 118). In 2008, 111 South African companies had registered with the NCACC (2008: 6). These companies exported to 88 countries, whereas they imported material and equipment from 61 countries (NCACC 2008: 6 & 18).

The 2009 report of the NCACC indicated that the South African government approved contracting permits worth more than R 82 billion for 2009. Not all approved contracts resulted in exports and sales as companies often apply for approval prior to this in order to market their products. Figures showed that the NCACC approved 371 contracts between South African companies and approved defence procurement authorities in 89 countries. This is over four times more than the R 19 billion allocated for the 2008 calendar year. In 2008, the NCACC approved 370 contracts with 90 countries. The figures are down from 388 in 2004, but up from 326 in 2003 (*DefenceWeb* 20 September 2010).

Few aspects of post-1994 South Africa's international relations have been as contentious as the country's arms sales. In some instances, accusations were made that South Africa had sold dual-use goods to known nuclear proliferators. However, it is unclear whether these were nuclear or military dual-use goods in terms of the WA's dual-use lists. As indicated below, irregular reporting to Parliament by the relevant South African government authorities inflamed these accusations.

Section 1 of the South African National Conventional Arms Control Act 41 of 2002 defines “dual-use goods” as “products, technologies, services or other goods which, besides their normal use and application for civilian purposes, can also be used for the furtherance of general military capability” (NPC 2009). Speaking at the 1995 REC, Minister Alfred Nzo (1995: 137) stated that “democratic South Africa is a responsible possessor of advanced technologies” and that South Africa regards its “non-proliferation and arms control policy as being an integral part to *[sic]* our commitment to democracy, human rights, sustainable development, social justice and environmental protection”. In addition to this, from 1994 onwards, the South African government admitted that “a primary goal” of its foreign policy is to:

reinforce and promote South Africa as a responsible producer, possessor and trader of defence-related products and advanced technologies in the nuclear, biological, chemical and missile fields. South Africa, in so doing, promotes the benefits which non-proliferation, disarmament and arms control hold for international peace and security, particularly to countries in Africa and the Non-Aligned Movement (NAM) (DFA 2009).

This position of South Africa has influenced the moderation of NAM’s position on the export control regimes considerably (Potter & Mukhatzhanova 2011).

The National Conventional Arms Control Act 41 of 2002 defines 'services' as “aid, advice, assistance, training, and product support” (section 1), whereas the NSG defines “dual-use goods or items” as goods or items that “can make a major contribution to an unsafeguarded nuclear fuel cycle or nuclear explosive activity, but which have non-nuclear uses as well, for example in industry” (NSG 2010b). The NPC primarily looks at the proliferation risk of a particular transaction while it takes note of the NCACC decisions based on the issues highlighted below. Where the same items are controlled by both bodies, a process of consultation takes place to ensure that both bodies’ decisions are consistent. Apart from the definitions in the National Conventional Arms Control Act 41 of 2002, several criteria are used by the NCACC when it approves arms contracts and import and export permits. These are:

- respect for human rights and fundamental freedoms in the recipient country;

- an evaluation based on the UN *Universal Declaration of Human Rights* and the *African Charter on Human and People's Rights*;
- the internal and regional security situation in the recipient country against the background of existing tensions or armed conflicts;
- the recipient country's record of compliance with international arms control agreements and treaties;
- the nature and cost of the arms to be transferred relative to the situation in the recipient country, including the recipient country's legitimate security and defence needs, taking into account that the transaction should divert minimal funding from human and economic development; and
- The degree to which arms sales are supportive of South Africa's national and foreign interests (Landsberg 2010: 112).

The South African government had not consistently applied these criteria. South Africa's arms trade, conducted predominantly by the state-owned entity Denel, remains a contentious foreign policy and diplomatic issue. Academics such as Sylvester and Seegers (2008); MPs of opposition parties such as the Democratic Alliance's Shadow Minister of Defence and Veterans Affairs David Maynier (2009) and the Independent Democrats' Patricia de Lille (2010); and former ANC MP Andrew Feinstein (2007) have repeatedly expressed grave concerns about South Africa's arms sales to countries such as Libya, Pakistan and Zimbabwe. Concerns centred around the volume of exports; the types of arms exported (including dual-use); the imbalance between South Africa's stated policy on human rights and its sale of arms to undemocratic governments; and South Africa's national economic interests and the ideal of an ethical foreign policy.

Nonetheless, South Africa's legislation complies with the nuclear non-proliferation regimes referred to earlier. In some instances, as previously indicated, the South African government had even implemented certain regulations before it joined a particular regime. This signals the Government's efforts to comply with the norms of nuclear non-proliferation; nuclear disarmament; and the peaceful uses of nuclear energy as espoused by these regimes.

5. Concerns about South Africa's post-1990 commitment to nuclear non-proliferation

South Africa is one of at least 20 states that have terminated their nuclear weapons programmes since 1945. Several explanations have been offered for South Africa's nuclear reversal.³⁰ These explanations include US pressure on the NP government (Levite 2003: 65-66; Liberman 2001: 78); De Klerk's "anti-nuclear preferences" (Liberman 2001: 75); changes in the decision-makers and advisors involved in nuclear decision-making under the De Klerk-government (Liberman 2001: 75); the NP government's determination not to transfer a nuclear weapons capability to the ANC government (Levite 2003: 94; Fig 2005: 70); international sanctions against South Africa (Liberman 2001: 48); changes in the regional and domestic security environment (De Klerk 1993; Levite 2003: 84; Liberman 2001: 45); the ANC's historical stance against nuclear energy and nuclear weapons (Gumbi 2008a: 5); changes in the international environment in the wake of the end of the Cold War (De Klerk 1993; Tsygankov & Tsygankov 2010: 665); domestic regime change (Levite 2003: 84); national ideology (Tsygankov & Tsygankov 2010: 667); and international incentives such as the US offer for future commercial and scientific cooperation (Liberman 2001: 79).

Speaking prior to the ANC's accession to power in 1994, Trevor Manuel (1994: 5) observed that:

indications are that important Western powers are far more nervous about a nuclear capability in the hands of an ANC-led government than they ever were about the same, or even an enlarged capacity in the hands of the apartheid regime.

Since 1993, a series of developments, events and statements cast on the post-1994 South African government's commitment to nuclear non-proliferation. Firstly, the international community was concerned about the South African government's stance on its weapons capability. By its own acknowledgement, the South African government "is engaged in various aspects of the trade in weapons and related

³⁰ Nuclear reversal can be defined as the "phenomenon in which states embark in [*sic*] a path leading to nuclear weapons acquisition but subsequently reverse course, though not altogether abandoning their nuclear ambitions" (Levite 2003: 61).

materials, equipment, technology and services” (NPC 2011a). For the South African government, “(t)rade in weapons/armaments/defence equipment and related materials, equipment, technology and services forms an integral part of South Africa’s foreign-, defence-, trade- and industrial policies and initiatives” (NPC 2011a). Moreover:

it is South Africa’s declared national interest in conjunction with its international obligations and commitments, particularly as these relate to non-proliferation, disarmament and arms control, and the implementation of international humanitarian law, to exercise due restraint in the transfer and trade in weapons and related materials, equipment, technology and services (NPC 2011a).

The South African government also acknowledged the competitive nature of the international nuclear-related market and that it wants to be regarded as a “responsible and reliable supplier of weapons and related materials, equipment, technology, aid and services” (NPC 2011a).

The South African government repeatedly emphasised that “a primary goal” of South Africa’s foreign policy is to “reinforce and promote South Africa as a responsible producer, possessor and trader of defence related products and advanced technologies in the nuclear, biological, chemical and missile fields” (Markram 2004: 12). Moreover, it is South Africa’s:

declared national interest in conjunction with its international obligations and commitments, particularly as these relate to non-proliferation, disarmament and arms control, and the implementation of international humanitarian law, to exercise due restraint in the transfer and trade in weapons and related materials, equipment, technology and services (NPC 2011a).

In addition to this, the South African government through the NPC maintains that “(t)rade in weapons/armaments/defence equipment and related materials, equipment, technology and services forms an integral part of South Africa’s foreign-, defence-, trade- and industrial policies and initiatives” (NPC 2011a). This decision was the “opening [of] a new chapter in South Africa’s nuclear history” (Shelton 2000b: 19); particularly in respect of its obligations in terms of the nuclear export control regimes.

Secondly, another concern was the South African government's "nuclear inheritance" whereby:

nuclear weapons or nuclear weapons material produced by South Africa might fall in to the hands of a radical ruling faction, black or white, which might use or threaten to use them to advance extremist objectives (Pabian 1995: 10).

The co-called "mini nuke conspiracy", referred to by Hounam and McQuillan (1995) suggested that the pre-1994 South African government manufactured over 1 000 small tactical nuclear warheads that could be in the hands of an anti-Mandela, right-wing faction. Following the "mini nuke conspiracy", reference was also made to a "confidential Afrikaner Weerstandsbeweging (Afrikaner Resistance Unit, AWB) report", prepared by its intelligence unit, which claimed that "enough raw materials and equipment might have been removed from the nuclear project site [at Pelindaba near Pretoria] during the winding-down phase [in 1993] to enable such a device to be assembled elsewhere" (Koch, Moodley & Porteous 1996: 150). The report also referred to the "high level of support among personnel in the nuclear sector for the right-wing cause" and stated that "at the very least the raw materials, parts and expertise are available to the right to build such a device at short notice" (Koch, Moodley & Porteous 1996: 150). However, the so-called "Completeness Report" referred to previously by the IAEA Director General in paragraphs 28 to 32 concluded that all HEU from the South African nuclear weapons programme was accounted for and placed under IAEA safeguarding by 1993 (IAEA 1993a).

In the third instance, the US, in particular, was concerned about the post-1994 South African government's nuclear-related diplomatic relations with nuclear ambitious states such as Iran, Pakistan and Libya (Koch, Moodley & Porteous 1996: 113). The South African government's controversial arms sales were linked to this. These included the sale of dual-use goods to so-called rogue states such as Iran and Libya. The UNSC resolutions on Iran have been strictly enforced. There may be a few areas where South African legislation is limited to the UNSC resolutions but US and EU sanctions are much wider. However, the time factor is important as exports made prior to UNSC Resolutions do not count as a contravention of the Resolution.

The fourth concern was the ‘complex’ nature - according to IAEA officials von Baeckmann, Dillon and Perricos (1995) who were involved in the process - of the verification of South Africa’s nuclear inventory and the termination of South Africa’s nuclear weapons programme. The international community regarded South Africa as not always willing to cooperate. Moreover, according to the IAEA (2005: 5), South Africa still had “several hundred kg” of HEU in the country’s inventories which are under IAEA safeguards, whereas other sources estimated about 300kg (Fig 2005: 71). South Africa’s refusal to give up its large HEU stockpile was also regarded as a concern (Bunn 2008: 51). This HEU inventory is a major political lever in favour of the South African nuclear diplomacy. If South Africa forfeited this inventory, it would lose its niche political position. This is one of the reasons why South Africa did not support the IAEA decision to establish a nuclear fuel reserve (see Chapter 4).

These concerns were amplified when the international community realised that the post-1994 South African government was slow in its efforts to convert the country’s nuclear research reactor (SAFARI-1) at Pelindaba from using HEU to using LEU. This conversion was only achieved by 2009 considering that the conversion process began as early as 1994 (NECSA 2009).

Another concern was the fate of South African nuclear scientists who worked on the country’s nuclear weapons programme. It was feared that these scientists may be employed by emerging nuclear weapons states. In 2007, for example, reports stated that Iran had been actively recruiting South African nuclear scientists for its nuclear programme (Barletta *et al.* 1998:145). These concerns re-surfaced in 2010 when the South African government announced the termination of its PBMR programme, which once again resulted in the retrenchment of a large number of South African nuclear scientists (Hogan 2010; Fig 2010).

A sixth concern was the safety of South Africa’s nuclear installations. For example, in 2006, the World Association of Nuclear Operators (WANO) conducted a peer-review of the Koeberg Nuclear Power Station north of Cape Town and identified “gaps in performance in several areas” at the power station (South Africa 2007: 8). On 8 November 2007 armed attackers broke in at South Africa’s major nuclear facility, Pelindaba, where significant volumes of weapons-grade HEU are kept, raising global concerns about nuclear safety in South Africa (Bunn 2008: v, 3-4).

In the seventh instance, the South African government's stated ambition to develop the country's nuclear energy sector is another matter of concern. The South African government has adopted the *Nuclear energy policy for the Republic of South Africa* in 2008 (DME 2008) and has stated its intentions in the *Ten Year Plan for Science and Technology, 2008-2018* to develop the country's nuclear-related industrial sector (DST 2007; Economic Sectors and Employment Cluster 2010). In 2011, the Minister of State Security, Siyabonga Cwele (2011), announced that government was investigating the restarting of the country's enrichment facilities. Moreover, in 2012/13, the South African government is expected to announce the successful bidders for the construction of new nuclear power stations.

A final concern was the involvement and the subsequent charging of South Africans in the nuclear proliferation network of AQ Khan (NPA 2007; IISS 2007) (see section 5.1). This compromised South Africa's commitment to nuclear non-proliferation (Minty 2007a). In addition to this, the South African government seemed unwilling to charge Asher Karni, a businessman with South African connections and a known operator in the global nuclear illicit market, for alleged illicit activities in South Africa. However, South African authorities conducted a search of Karni's premises in December 2003. Subsequent to this, Karni requested permission to go on holiday in the US, which was granted by the NPA. He was arrested in Denver (Colorado) on 2 January 2004, less than a month after the South African authorities had opened a case against him. The US prosecuted him and sentenced him before he could return to South Africa. Karni was sentenced in the US to three years imprisonment on 4 August 2005 (US 2005: 1; Lacey 2010).

In response to the aforesaid concerns and developments, the South African government employed several confidence-building measures such as portraying a positive nuclear identity; joining major multilateral nuclear export control regimes to reiterate the country's commitment to nuclear non-proliferation; and communicating the country's national interests as complementing (and not opposing) international nuclear non-proliferation. Internationally, South Africa also aligned its international and domestic nuclear non-proliferation export control policies. Notwithstanding this, the activities of the nuclear proliferation network of Pakistani nuclear physicist AQ

Khan in South Africa contributed to concerns about South Africa's commitment to nuclear non-proliferation.

5.1 The AQ Khan nuclear proliferation network in South Africa

The arrest of AQ Khan on 31 January 2004 confirmed the diplomatic and security challenges posed by illicit nuclear proliferation networks. Considered the 'father' of Pakistan's nuclear weapons programme, Khan's nuclear black market spanned the globe and involved actors from NWS and NNWS. It included illicit trade in nuclear equipment, expertise, goods, weapons and nuclear material by, amongst others, Iraq, North Korea, Libya, Dubai, Malaysia, Turkey, Spain, The Netherlands, Germany, Switzerland, the UK, South Korea and Japan. The Khan network also operated in several African states, including Egypt, Mali, Mauritania, Sudan, Tunisia, Niger, Côte d'Ivoire, Nigeria and South Africa (IISS 2007: 43-50; 65-88). The involvement of South Africans in the AQ Khan network was confirmed and reported to the IAEA by South Africa's representative at the IAEA, Ambassador Abdul Minty. He also confirmed that Khan's illicit nuclear weapons proliferation network operated in more than 30 countries and that it comprised of several entities and individuals of different nationalities (Minty 2007a).

Prior to 1990, South Africa was an active international nuclear trader who tapped into clandestine procurement networks in Europe, the US and Israel (Albright 1994; UN 1994: 52, 114). South Africa thus undermined global norms pertaining on nuclear trade. For the post-1994 government, South Africans' involvement in the Khan network (henceforth the *Wisser Affaire*) was a diplomatic embarrassment which brought into question and undermined South Africa's constructed identity and status as a self-professed good global nuclear actor. It also raised fears of the country's nuclear recidivism.

5.1.1 The *Wisser Affaire*

Subsequent to Khan's arrest, the South African government instituted an investigation into the possible involvement of two South African registered corporate entities, namely Krusch Engineering Company (Property) Limited and Tradefin Engineering CC, in the network's procurement activities for Libya and Pakistan. The

allegations related to the import and export of a controlled flow-forming lathe as well as the production and possession of certain components of a centrifuge enrichment plant without the necessary permits. These items do not constitute a weapon of mass destruction, but they are essential components of the process to enrich uranium. It was alleged that these activities were intended to assist in the now abandoned nuclear weapons programme of the Libyan government. On the premises of Tradefin Engineering, the South African authorities found 11 shipping containers containing dual-use components of a centrifuge uranium enrichment plant. They also uncovered feed systems/product and tails withdrawal systems and machine header piping systems, defined in the NSG lists; and documentation relating to the import and export of a flow-forming machine, classified as “nuclear related dual-use equipment (NPC 2004; Minty 2007a).

In response to these developments, Minty as chairperson of the NPC stated that:

the South African Government shares the international community's concern over the illicit transfer of nuclear and nuclear related dual-use technology and materials that could be used in weapons of mass destruction and encourages the sharing of information that would identify individuals or entities involved in such illicit activities with a view to prevent, combat and eradicate this illicit trade (NPC 2004).

Minty's “damage control” statement confirmed South Africa's diplomatic embarrassment to the extent that it reminded the international community of South Africa's clandestine nuclear behaviour before 1990 (Minty 2007a).

The South African government's investigation also revealed that both the flow-forming machine and the systems formed part of Libya's undeclared nuclear activities. At the time, Libya was subject to UN sanctions. The South African investigation also revealed that during the period from 1986 to 1995, South Africans supplied controlled nuclear equipment to Pakistan. On 2 September 2004, eight months after the arrest of AQ Khan, Johan Andries Muller Meyer formerly involved with the South African government's nuclear weapons programme and founding-director of Tradefin Engineering in Vanderbijlpark was arrested. He had been responsible for the manufacture of the feed systems/product and tails withdrawal

systems, and machine header piping systems. He was subsequently charged with contravening the NSG *Guidelines*; the Non-Proliferation of Weapons of Mass Destruction Act 87 of 1993 “by importing and exporting a flow-forming lathe without the necessary permits”; and the Nuclear Energy Act 46 of 1999 “by possessing and producing certain components of a centrifuge enrichment plant without the necessary authorisation of the Minister of Minerals and Energy” (NPC 2004).

The charges against Meyer were withdrawn once he revealed that he had been acting on behalf of Krisch Engineering. The South African government gave Meyer the status as a cooperating, complicit witness. On the strength of Meyer’s evidence, the Managing and Design Directors of Krisch Engineering, namely German citizen Gerhard Wisser and Swiss citizen Daniel Geiges - both mechanical engineers - were arrested. Wisser and Geiges were subsequently charged with contravening South Africa’s non-proliferation legislation (Minty 2007a). The South African National Prosecuting Authority (NPA) indicted Wisser and Geiges on ten charges. Six of these charges related to Libya’s nuclear weapons programme and the remaining four to Pakistan’s programme. The NPA’s indictment alleged that Wisser and Geiges cooperated with other members of the AQ Khan network outside South Africa (Minty 2007a). Gerhard Wisser was convicted for contraventions of the Non-Proliferation of Weapons of Mass Destruction Act 87 of 1993 and the Nuclear Energy Act 46 of 1999. On 4 September 2007, in the case of *S v Gerhard Wisser*, Wisser entered into a Plea and Sentence Agreement with the State. Wisser confirmed that his crimes had contributed to the Khan network’s activities and admitted that he had cooperated with other members of the network outside South Africa (NPC 2007).

Wisser also pleaded guilty to charges linked to the Libyan nuclear weapons programme, namely the import and export of a flow-forming machine between November 2000 and December 2001; the manufacture of systems for the Libyan gas centrifuge plant between 1999 and 2003; and an attempt to export nuclear systems in 2003. On charges relating to Pakistan’s nuclear weapons programme, Wisser pleaded guilty to four charges, namely the manufacture of three autoclaves in 1994/1995; the export of the autoclaves in 1995; forgery of an order form in order to acquire Leybold Heraeus vacuum equipment in May 1995; and forgery of an order form in order to acquire Leybold Heraeus equipment in July 1995 (NPC 2007).

Wisser entered into a Plea and Sentence Agreement with the State and pleaded guilty to charges linking him to the Khan network, and to the Libyan (from 1999 to 2003) and Pakistani (from 1994 to 1995) nuclear weapons programmes. Found guilty, Wisser's concurrent sentences included three years correctional supervision, and three to ten year imprisonment, suspended for five years. Wisser also consented to a confiscatory order in respect of almost € 3 million and R 6 million as being the proceeds of crime (Minty 2007a; NPA 2007; NPC 2007).

The case against the remaining accused, Daniel Geiges, continued (NPC 2007). In 2006, he was diagnosed as being terminally ill with cancer, which resulted in him not being able to attend certain trial hearings. The case against him was separated and postponed, pending medical reports concerning his health status and ability to stand trial. On 5 February 2008, a South African court convicted Geiges on charges linking him to the Khan network. Geiges' plea bargain with South African authorities resulted in him receiving a 13 year suspended sentence on the condition that he assists South African authorities in further investigations into the Khan network (NPA 2008).

The South Africans involved in the Khan network were economically - rather than politically - motivated. This undermined global efforts to counter illicit proliferation. The Wisser *Affaire* undermined not only South Africa's national security and interests but also its identity as a former "nuclear-contender-turned-good-global-nuclear-citizen". Moreover, it affected South Africa's nuclear diplomacy; a niche area it was carefully crafting for itself in the global arena.

5.1.2 The implications of the AQ Khan legacy

The social construction of the AQ Khan legacy and the Wisser *Affaire* as a nuclear proliferation crisis has several implications. Jutta Weldes' (1999) analysis of the Cuban Missile Crisis is instructive. Weldes (1999: 37) observes that crises are "social constructions that are forged by state officials in the course of producing and reproducing state identity". Despite the routine nature of crises for states, crises also benefit states in two ways. In the first instance, crises facilitate the domestic consolidation of state power by facilitating the establishment of state machinery, enhancing the control exercised by a state over its citizens, and refine or elaborate relations of power within a state. In the second instance, crises enable the

“(re)articulation of relations of identity/difference as a means of both constituting and securing state identity” (Weldes 1999: 58). In the case of the AQ Khan network and the *Wisser Affaire*, the narrative of the ‘crisis’ (*i.e.* nuclear proliferation in South Africa) included references to the dangers of nuclear proliferation to global security, the legacy of South Africa’s nuclear past and the post-1994 government’s continuing commitment to nuclear non-proliferation. Therefore, in the social construction of these events, South Africa made every effort to maintain its identity as a state committed to nuclear proliferation.

According to South Africa’s Deputy Minister of Foreign Affairs, Aziz Pahad (2008a), Mohamed ElBaradei, Director General of the IAEA, described the AQ Khan network as the “biggest threat to the NPT”, a statement with which he (Pahad) agreed. The legacy of the AQ Khan network had several implications for South Africa’s nuclear diplomacy. Firstly, the South African government admitted that the investigations which resulted in Wisser’s sentencing had taken place in the context of the so-called Khan network. The South African government confirmed that certain countries were indeed provided with nuclear technology through international networks (NPC 2004) and that the exposure of the Khan network and the *Wisser Affaire* had occurred after South Africa’s initial successes at diplomatic events such as the 1995 REC of the NPT. Despite the arrest and sentencing of Wisser, the *Affaire* raised concerns about South Africa’s commitment and ability to fulfil its obligations to the norm of nuclear non-proliferation (Minty 2007a).

Secondly, in constructivist terms, the *Wisser Affaire* highlighted the social dimensions of South Africa’s nuclear diplomacy. In terms of language, South Africa had constructed a role and identity as a state that had voluntarily terminated its nuclear weapons programme; that was a subscriber to and advocate of nuclear non-proliferation and disarmament; and that was a trustworthy nuclear actor. In contrast, the *Wisser Affaire* raised concerns about South Africa’s nuclear intentions, trustworthiness and integrity.

A third implication of the *Wisser Affaire* underlined the importance of multilateral efforts to prevent nuclear proliferation. In a statement to the IAEA Board, Minty (2007a) attempted to allay the international community’s fears of a nuclear-South Africa. Apart from stating that investigation into the contravention of non-proliferation

legislation was “yet another demonstration of South Africa's commitment to the Treaty's non-proliferation provisions”, South African authorities cooperated with other countries as well as with the IAEA (Minty 2007a). In its response to the conviction of Wisser and through its NPA, the South African government indicated specifically that the governments of the US, the UK, Malaysia, Switzerland, Spain and Jordan had provided assistance in the matter (NPA 2007).

In the fourth instance, the South African government regarded the *Wisser Affaire* as one of the “first successful cases” against individuals involved in the Khan network, with the South African experience having “illustrated the value of the IAEA and of effective information-sharing that has allowed us to identify individuals or entities involved in such illicit activities with a view to prevent, combat and eradicate this illicit trade” (NPC 2007).

A fifth implication was that the *Wisser Affaire* remained unresolved. Although the NPC had withdrawn the charges against Meyer (NPC 2004), South Africa's Deputy Minister of Foreign Affairs, Aziz Pahad (2008a) confirmed the unresolved nature of the *Wisser Affaire* and the impact of the network by stating that he suspected that:

many governments feel that they have evidence, but not enough evidence for a conviction. In Germany, they have attempted a couple of prosecutions but they did not succeed as the authorities wished to. And there are some indications that they might be resuming some of those efforts.

Pahad (2008a) also lamented the fact that despite some countries being “well-positioned” to assist the South African government in its investigations into the Khan network, assistance from these countries was “not forthcoming”.

Finally, the South African government's self-assessment of its handling of the Khan network and the *Wisser Affaire* was in line with the country's constructed identity and role. Commenting on South Africa's handling of the *Affaire*, Pahad (2008a) observed that “we [South Africa] have acted far better than other countries involved in it”. Pahad (2008a) also described South Africa's handling of the issue by explaining that when government authorities first found evidence, it cooperated with internal authorities on the matter and conducted a “very thorough and comprehensive”

investigation. Thus, the South African government's handling of the matter was another indication of its commitment to comply with international nuclear non-proliferation norms.

6. An assessment of South Africa's role and identity regarding the nuclear non-proliferation export control regimes

Concerns about a possible South African nuclear reversal have persisted between 1990 and 2010. However, South Africa's niche role and identity is evident from its nuclear diplomacy pertaining to the nuclear non-proliferation export control regimes.

6.1 South Africa's state identity and national interests

Since the ANC came to power and despite diplomatic efforts to assert a new identity, South Africa continues to grapple with "multiple identities" (Serrão & Bischoff 2009: 363). In terms of nuclear-related matters South Africa identified itself as a "responsible possessor, producer and trader" of dual-use goods (DIRCO 2009: 42) and as a state that has a "long and principled position on advancing the peaceful uses of nuclear energy" (Gumbi 2008a: 5). These self-defined identities emanate from the country's reconstructed post-1994 foreign policy which, in turn, has resulted in new diplomatic practices to give expression to them. In this way, South Africa conceptualised its nuclear-related identity through both negative approximation and positive approximation (Messari in Serrão & Bischoff 2009: 371). The former refers to an identity that is formed and maintained through interaction with so-called enemies. In other words, identity is defined in terms of what South Africa is not. In this regard, South Africa has distanced itself from actors such as the AQ Khan network contravening the nuclear export control regimes. In contrast, the latter refers to South Africa's positive identification with allies, like-minded states and non-state actors when commonalities are reinforced through mutual constitution of ideas and norms. Examples of this included South Africa's membership of the various nuclear export control regimes.

In order to define South Africa's state identity in accordance with its nuclear diplomacy, Wendt's (1999:224) constructivist typology of identity, namely corporate or personal, type, role and collective identities, is applied. Therefore, in the context of the nuclear export control regimes, South Africa's corporate or personal identity was

constituted by its legislation which complied with the nuclear non-proliferation norm. South Africa's type identity referred to its shared identity with like-minded states in the nuclear export control regimes to prevent nuclear proliferation. The country's role identity was evident from its ability to play various roles in these regimes. These roles include that of a compliant state and a state that promoted nuclear non-proliferation. South Africa's collective identity was a combination of its roles as well as its type identity as a state committed to nuclear non-proliferation.

6.2 South Africa's diplomatic roles and strategies

South Africa's social identity as a reflection of its diplomatic roles consists of a set of meanings that the South African state attributes to itself while taking those of other states into account. Therefore, the meaning(s) that South Africa ascribes to actors, events and developments becomes the basis for the country's actions and interactions. For South Africa, the material and non-material incentives associated with niche diplomacy were of particular importance in its attempt to convince the international community of its commitment to continue with a civilian nuclear programme. With the dismantling of its nuclear weapons programme and nuclear weapons, South Africa has accrued moral authority and legitimacy. It has also secured a niche role through the construction of the country's nuclear identity. Speaking at the 1995 NPT REC, Foreign Minister Alfred Nzo (1995: 137) stated that "democratic South Africa is a responsible possessor of advanced technologies" and that South Africa regards its "non-proliferation and arms control policy as being an integral part to *[sic]* our commitment to democracy, human rights, sustainable development, social justice and environmental protection". This nuclear identity includes an identity of self-proclaimed leadership in nuclear matters. Addressing the Parliamentary Portfolio Committee on Foreign Affairs in May 1995, Rusty Evans (1995: 106), the then Director-General of the DFA, for example, stated that due to South Africa's destruction of its nuclear weapons and accession to the NPT, it is "able to play a leading role in multilateral disarmament fora".

South Africa's diplomatic behaviour pertaining to multilateral nuclear export control regimes exemplifies that of a typical middle power. In fact, South Africa is recognized as a middle power by Van der Westhuizen (1998); Nel, Taylor and Van der Westhuizen (2001); and Schoeman (2000 & 2003); and as an "emergent para-

Western middle power” (Serrão & Bischoff 2009: 378). As Ungerer (2007: 396) indicates, middle powers more often than not have substantial technical and scientific expertise that contributes to their diplomatic competence in negotiations on these issues. South Africa falls into this category. At the height of its nuclear weapons programme, the AEC, predecessor of NECSA employed about 8 200 scientists (Lieberman 2001: 77).

In its practice of nuclear diplomacy, South Africa has employed all the strategies of confrontation, parallelism and partnership on the international nuclear non-proliferation export control regimes. In engaging on international nuclear non-proliferation export controls, South Africa has applied partnership as a diplomatic strategy, as evidenced by its collaborative partnership with NWS and emerging NWS in voluntary export control regimes such as the ZC and the WA. Its use of parallelism is evidenced by its parallel action alongside one or more nuclear superpowers and its coalition partners in the NAC. In supporting India, for example, a special dispensation outside the NSG, or supporting Iran’s nuclear programme for some years (Du Preez 2006), South Africa also confronted some NWS. South Africa is strongly supporting the principles of Article III of the NPT which provides states an “inalienable right” to nuclear power for peaceful purposes (see Chapter 4). More recently in 2011, South Africa cooperated with NWS in the call upon Iran to implement the requirements set by several UN Resolutions calling on Iran to terminate its nuclear weapons programme (Minty 2011a).

South Africa’s nuclear diplomacy provided it with locational (one of the few African states to have acquired and give up nuclear weapons); traditional (the country has a nuclear history); and consensual (South Africa’s non-proliferation commitment is reflective of the country’s post-apartheid commitments) advantages over other countries. Therefore, South Africa has increased its diplomatic influence, authority, non-material power and economic incentives. Moreover, the country has constructed a unique brand of niche diplomacy by employing a number of diplomatic practices which have provided some material and non-material rewards such as status, prestige and trade opportunities. For South Africa, these rewards were particularly important to convince the international community of its commitment to continue with a civilian nuclear programme rather than reverting back to a nuclear weapons

programme or becoming involved in illicit nuclear networks. By dismantling its nuclear weapons programme and destructing its “nuclear devices”, South Africa has accrued moral authority and legitimacy. South Africa has evolved as a normative power from the developing South in the area of nuclear diplomacy.

The South African government has also expressed its preferred form for its nuclear diplomacy, *i.e.* “all bilateral and multilateral initiatives to prevent the proliferation and development of such weapons on the one hand and to promote total disarmament of these weapons on the other” (DIRCO 2011a). In fact, the South African government maintained that it regards multilateralism as an important instrument for the “resolution of global challenges” such as disarmament and the non-proliferation of nuclear weapons (DIRCO 2010c: 41).

6.3 South Africa’s norm entrepreneurship and leadership

In terms of Young’s (1991) leadership autonomy, South Africa has displayed at least two out of three types of leadership in the multilateral nuclear export regimes. Young’s (1991) first type of leadership is structural leadership. This is exhibited when leaders, or a leading country, make decisions about resources available to them to achieve a multilateral bargain. With regards to South Africa’s role exposing the Khan network, the Nuclear Threat Initiative (NTI) stated that South Africa “worked closely” with the IAEA after investigations of a South African connection to the Khan nuclear non-proliferation network (NTI 2010a).³¹ The South African government has admitted that South Africa’s experience has “shown that no control regime, no matter how comprehensive, can fully guarantee against abuse” (Dlamini-Zuma 2007a).

Secondly, entrepreneurial leadership refers to leaders who are not in a position of power but nonetheless use their diplomatic negotiating and bargaining skills to achieve a particular outcome. South Africa has positioned itself as a norm entrepreneur (Geldenhuys, 2006a). Moreover, South Africa has also positioned itself as a “responsible possessor, producer and trader” in dual-use goods (DIRCO 2009a: 42); especially in its handling of the *Wisser Affaire* and the Khan network. South Africa’s norm construction in its nuclear diplomacy is evident in the South African

³¹ Established in 2001, the NTI is a US-based non-governmental organisation under the co-leadership of US Senator Sam Nunn. The NTI focuses, *inter alia*, on nuclear disarmament and uranium security (NTI 2011).

government's legislation and policies on nuclear non-proliferation, disarmament and arms control that incorporates the obligations of the CWC, the BTWC, the NSG and the WA (DIRCO 2011a). South Africa has incorporated these obligations sometimes prior to its accession to or membership of these conventions or groups.

Predominantly, most governments require only export permits for the export or re-export of controlled goods. However, according to the South African government, the country is one of a small number of states that require both import permits for the import of controlled goods and export permits for the export or re-export of controlled goods (South Africa 2005a: 8). In terms of the Non-Proliferation of Weapons of Mass Destruction Act 87 of 1993, it is required that for the import and export of chemical, nuclear dual-use and missile controlled goods, import and export permits should be obtained from the NPC. In addition to this and in terms of the Nuclear Energy Act 46 of 1999, the South African government requires that for the "import, export or transport of nuclear material", import, export or transport permits should be obtained from the Minister of Minerals and Energy (since May 1990, the Minister of Energy). For the import, export or re-export of conventional armament items or dual-use items, import or export permits should be obtained from the NCACC (South Africa 2005a: 8-9).

Finally, intellectual leadership can change the normative or ideational environment to create opportunities for the achievement of a particular objective (Browne, Shetty & Somerville 2010: 381). South Africa has styled itself and gained global recognition as a leader in the global nuclear arena. Some global recognition for South Africa's nuclear non-proliferation efforts occurred. In January 2010, the NTI, amongst others, maintained that South Africa "has emerged as a champion of both global nuclear nonproliferation and equal access to peaceful nuclear energy" (NTI 2010a).

7. Conclusion

Since 1990, South Africa has constructed its norms, identity, role and interests in such a way that it has increased its diplomatic influence, authority and non-material power in terms of nuclear non-proliferation export control regimes. Moreover, the country has constructed a brand of nuclear diplomacy by employing a number of

niche diplomatic practices which have provided some material and non-material rewards in the form of status, prestige and even trade opportunities.

This chapter traced South Africa's nuclear diplomacy in the multilateral nuclear non-proliferation export control regimes. It explained the nature and utility of these regimes prior to outlining the principles of export control regimes and it traced South Africa's ascension to these regimes. South Africa's involvement in these regimes is voluntary and only places a moral responsibility on the country. Thus, it indicated the sincerity of the South African government to comply with its international nuclear non-proliferation obligations. However, the period between 1990 and 1993 - the *interregnum* between a nuclear-armed South Africa and a global nuclear icon - was particularly problematic. During this period, South Africa continued with testing ballistic missiles and importing nuclear-related equipment. Subsequent to the IAEA's verification of the dismantling of South Africa's nuclear weapons programme in 1993, the South African government introduced aspects of these regimes in its legislation prior to its membership of some of these regimes.

South Africa's nuclear export control establishment and policies are wide-ranging and comply with its international obligations. However, despite these comprehensive institutional frameworks, several concerns about South Africa's sincerity remained. These international concerns were amplified with the involvement of former government nuclear scientists and foreign nationals' involvement in the AQ Khan network. Nevertheless, South Africa has conducted its nuclear diplomacy in such a manner as to secure a niche role and state identity by employing three main strategies.

South Africa's membership and partnership of these regimes illustrates the country's departure from its previous nuclear identity as a state with nuclear weapons. Moreover, South Africa's nuclear diplomacy pertaining to these regimes resulted in the construction of a niche role and state identity as a FNWS that complies with nuclear non-proliferation norms.

The next chapter analyses South Africa's diplomatic relations with the IAEA as an expression of South Africa's commitment to multilateralism and nuclear non-proliferation norms in its conduct of nuclear diplomacy.